Dividends and Taxes:

An Analysis of the Bush Dividend Tax Plan

Aswath Damodaran

March 23, 2003

Stern School of Business
44 West Fourth Street
New York, NY 10012
adamodar@stern.nyu.edu

Professor of Financc

Abstract

What are the implications of making dividends tax free to investors? This question is now very much on the minds of investors and corporate finance practitioners after President Bush proposed it as part of his economic package in early 2003. While much of the debate has concentrated on the consequences of the tax law change for the stock market and budget deficits, the real effects may be in how companies raise money (debt versus equity), how much cash they choose to accumulate and how they return this cash to stockholders (dividends versus stock buybacks). If the tax law changes occur as proposed, it will profoundly alter the terms of the debate and require us to rewrite much that we take for granted in corporate finance today. In particular, we believe that over time, you will see companies become more (if not entirely) equity financed, a decrease in cash balances and a dramatic surge both in the number of companies that pay dividends and in how much they pay.

On January 8, 2003, President Bush proposed a dramatic change in the tax laws when he suggested that dividends be made tax exempt to the investors who receive them. Since the inception of the income tax in the early part of the 20th century, investors have had to pay taxes on dividends, which in turn were paid out by corporations from after-tax income. The double taxation of dividends, once at the hands of the corporation and once in the hands of investors, contrasts with the tax code's treatment of interest expenses – they are deductible to the companies that pay them. This asymmetric treatment of debt and equity has formed the basis for much of the debate in corporate finance on whether firms should use debt or equity and how much firms should pay out to their stockholders in dividends. It has also been built in implicitly into the models that we use to value stocks.

In this paper, we will consider the implications of the tax law change for both valuation and corporate finance practice. We will begin by presenting a history of the tax treatment of dividends in the last century and provide a contrast with its treatment in other countries. In the next section, we will consider how the tax treatment of dividends is built implicitly into valuation models and the consequences of changing the tax law on valuation. In the third section, we will consider how the tax disadvantage associated with dividends has been built in explicitly into corporate financial analysis and how the discussion will change if the tax law is changed. In the last two sections, we will consider the effects of the tax law on other markets and for the economy.

The History of Dividend Taxation

In this section, we will review how dividends have been taxed, when received by individuals, and contrast this with the tax treatment of dividends received by corporations, mutual funds and other institutional investors. We will also look at how dividends are taxed in other countries.

Tax Treatment of Dividends in the U.S.

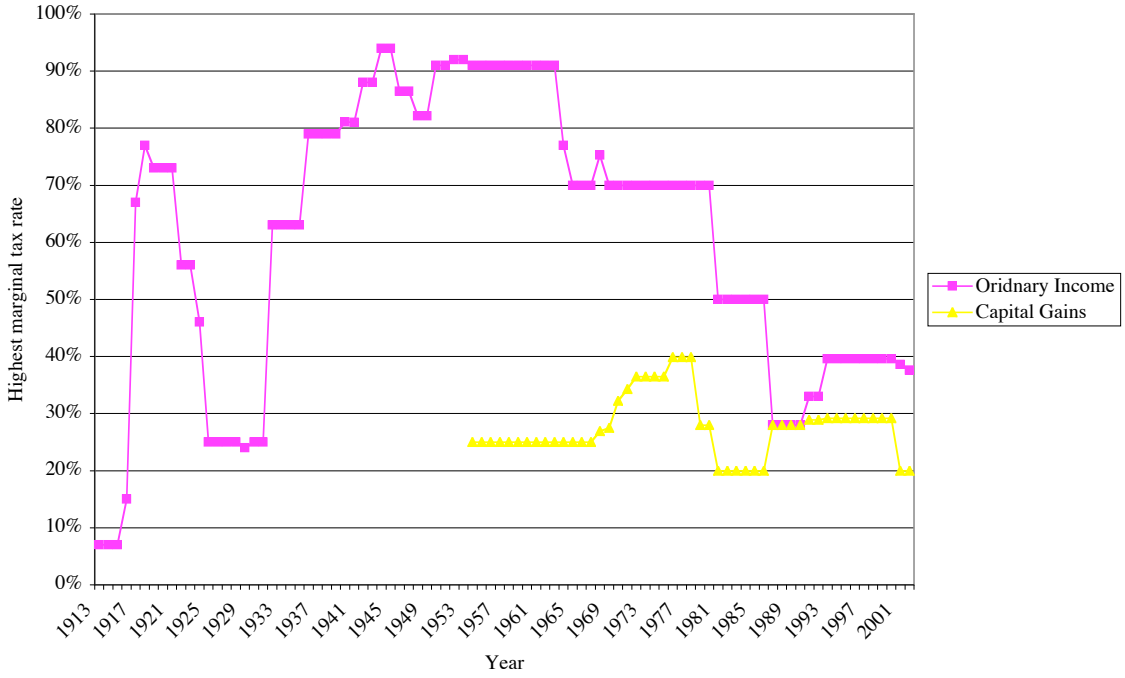
The tax treatment of dividends varies widely depending upon who receives the dividend. Individual investors are taxed at ordinary tax rates, corporations are sheltered from paying taxes on at least a portion of the dividends they receive and pension funds are not taxed at all. In this section, we will examine the differences across different tax paying entities.

Individuals

Since the inception of income taxes in the early part of the twentieth century in the United States, dividends received on investments have been treated as ordinary income,

when received by individuals, and taxed at ordinary tax rates. In contrast, the price appreciation on an investment has been treated as capital gains and taxed at a different and much lower rate. Figure 1 graphs the highest marginal ordinary tax rate in the United States since 1913 (the inception of income taxes) and the highest marginal capital gains tax rate since 1954 (when capital gains taxes were introduced).

Figure 1: Ordinary Income and Capital Gains Tax Rates



Barring a brief period after the 1986 tax reform act, when dividends and capital gains were both taxed at 28%, the capital gains tax rate has been significantly lower than the ordinary tax rate in the United States.

There are two points worth making about this chart. The first is that these are the highest marginal tax rates and that most individuals are taxed at lower rates. In fact, some older and poorer investors may pay no taxes on income, if their income falls below the threshold for taxes. The second and related issue is that the capital gains taxes can be higher for some of these individuals than the ordinary tax rate they pay on dividends. Overall, though, wealthier individuals have more invested in stocks than poorer individuals, and it seems fair to conclude that individuals have collectively paid significant taxes on the income that they have received in dividends over the last few decades.

Where is the double taxation of dividends? Corporations are taxed on their income and they pay dividends out of after-tax income. Individuals then get taxed on these dividends. To see the magnitude of the double taxation, assume that you have a corporation that has $ 100 million in pre-tax income and faces a tax rate of 30%; this firm will report a net income of $ 70 million. Further, assume that this corporation pays out all of its net income as dividends to individuals who face a tax rate of 40%. They will pay taxes of $ 28 million on the $ 70 million that they receive in dividends. Summing up the taxes paid, the effective tax rate on the income is 58%.

Institutional Investors

About two-thirds of all traded equities are held by institutional investors rather than individuals. These institutions include mutual funds, pension funds and corporations and dividends get taxed differently in the hands of each.

- Pension funds are tax-exempt. They are allowed to accumulate both dividends and capital gains without having to pay taxes. There are two reasons for this tax treatment. One is to encourage individuals to save for their retirement and to reward savings (as opposed to consumption). The other reason for this is that individuals will be taxed on the income they receive from their pension plans and that taxing pension plans would in effect tax the same income twice.
- Mutual funds are not directly taxed, but investors in mutual funds are taxed for their share of the dividends and capital gains generated by the funds. If high tax rate individuals invest in a mutual fund that invests in stocks that pay high dividends, these high dividends will be allocated to the individuals based on their holdings and taxed at their individual tax rates.
- Corporations are given special protection from taxation on dividends they receive on their holdings in other companies, with 70% of the dividends exempt from taxes[1]. In other words, a corporation with a 40% tax rate that receives $ 100 million in dividends will pay only $12 million in taxes. Here again, the reasoning is that dividends paid by these corporations to their stockholders will ultimately be taxed.

[1] The exemption increases as the proportion of the stock held increases. Thus, a corporation that owns 10% of another company's stock has 70% of dividends exempted. This rises to 80% if the company owns between 20 and 80% of the stock and to 100% if the company holds more than 80% of the outstanding stock.

Tax Treatment of Dividends in other markets

Many countries have plans in place to protect investors from the double taxation of divided. There are two ways in which they can do this. One is to allow corporations to claim a full or partial tax deduction for dividends paid. The other is to give partial or full tax relief to individuals who receive dividends.

Corporate Tax Relief

In some countries, corporations are allowed to claim a partial or full deduction for dividends paid. This brings their treatment into parity with the treatment of the interest paid on debt, which is entitled to a full deduction in most countries. Among the OECD countries, the Czech Republic and Iceland offer partial deductions for dividend payments made by companies but no country allows a full deduction. In a variation, Germany, until recently, applied a higher tax rate to income that was retained by firms than to income that was paid out in dividends. In effect, this gives a partial tax deduction to dividends.

Why don't more countries offer tax relief to corporations? There may be two factors. One is the presence of foreign investors in the stock who now also share in the tax windfall. The other is that investors in the stock may be tax exempt or pay no taxes, which effectively reduces the overall taxes paid on dividends to the treasury to zero.

Individual Tax Relief

There are far more countries that offer tax relief to individuals than to corporations. This tax relief can take several forms:

- *Tax Credit for taxes paid by corporation*: Individuals can be allowed to claim the taxes paid by the corporation as a tax credit when computing their own taxes. In the example earlier in the paper, where a company paid 30% of its income of $ 100 million as taxes and then paid its entire income as dividends to individuals with 40% tax rates the individuals would be allowed to claim a tax credit of $ 30 million against the taxes owed, thus reducing taxes paid to $ 10 million. In effect, this will mean that only individuals with marginal tax rates that exceed the corporate tax rate will be taxed on dividends. Australia, Finland, Mexico, Australia and New Zealand allow individuals to get a full credit for corporate taxes paid. Canada, France, the U.K and Turkey allow for partial tax credits.
- *Lower Tax Rate on dividends:* Dividends get taxed at a lower rate than other income to reflect the fact that it is paid out of after-tax income. In some countries, the tax rate on dividends is set equal to the capital gains tax rate. Korea, for instance, has a flat tax rate of 16.5% for dividend income.

In summary, it is far more common for countries to provide tax relief to investors than to corporations. Part of the reason for this is political. By focusing on individuals, you can direct the tax relief only towards domestic investors and only to those investors who pay taxes in the first place.

The Bush Dividend Tax Proposal

The Bush proposal seems simple in its overall scope – it will make dividends tax deductible – but there are details that are complex. Almost all of this complexity is designed to prevent investors and companies from taking advantage of the tax law change to evade taxes. While we will not examine all of the details, here are some salient components of the proposal:[2]

- *The dividend tax exemption will be available only to investors in companies that pay taxes in the first place*. Since the proposed tax change is designed to prevent the double taxation of dividends, the law's designers clearly felt that it should not apply to companies that do not pay taxes in the first place.
- *Companies that choose not to pay out dividends but reinvest them instead will be allowed to create a provision for future dividends that can then be used by investors in the stock to increase the basis for their stock*. This will reduce the capital gains taxes that they will pay when they sell the stock.[3] This provision is intended to correct for another quirk that will be created if dividends are made tax exempt. Since capital gains will continue to be taxed at the capital gains tax rate, investing in growth companies that do not pay out dividends but reinvest earnings may become less attractive on an after-tax basis.
- *Investors who borrow money to buy stock may still be taxed on dividends*. This is designed to prevent investors from claiming the tax deduction for interest expenses on the borrowing while their dividends are protected from taxes.

Some of these provisions will be difficult to implement. For instance, companies often do not know until the end of a financial year whether and how much they will be paying in taxes for the year but they pay dividends during the course of the year. Thus, a company

---

[2] See "Eliminating the Double Tax on Corporate Dividends", Council of Economic Advisers, January 7, 2003.

[3] While the details of the basis adjustment remain hazy, a short example will illustrate how it works. Assume you buy a stock for $ 10. The company sets aside $ 1 per share into the provision for future dividends and invests this money. If the stock price rises to $ 15 and you sell the stock, your capital gain will be assessed at $ 4 (with the basis increasing from $ 10 to $ 11) rather than $ 5.

may pay a dividend expecting this payment to be tax exempt to investors (because it expects to pay taxes for the year) and discover that it was mistaken in its assumptions at the end of the year.

Dividends and Valuation

The change in tax status for dividends should have value consequences and there are three places in a valuation where you would expect it to show up – the cashflows that determine value, the discount rate used to discount those cashflows and the expected growth rate in the cash flows. In this section, we will consider what impact, if any, dividend tax exemption will have on the value of equity.

Cash Flows

In conventional discounted cash flow valuation, the value of an asset or business is the present value of the expected cash flows from owning it. It seems reasonable to assume that reducing or eliminating the tax rate on dividends will push up the cash flows and asset value. This is not the case, though. In standard practice, the cash flows discounted are cash flows after corporate taxes but before personal taxes. This is done partially for tractability – different investors holding the same stock have different tax rates – and partially for simplicity – if you use cash flows after corporate and personal taxes, your discount rates will also have to be after corporate and personal taxes. Since cashflows are prior to personal taxes, any change in personal tax status will not change these cashflows.

There is one version of the discounted cash flow model – the dividend discount model – where you may expect an impact from changing the tax status of dividends. Even here, though, the dividends discounted are dividends paid to investors, prior to personal taxes, and a change in tax status should not affect the cash flows.

Discount Rates

The component of discounted cashflow models that is most likely to be affected by a change in the tax status of dividends is the discount rate. In this section, we will consider how changes in the taxes paid by individuals on dividends may affect the cost of equity. Later in this paper, we will look at the broader issue of how the change in tax status of dividends may change the mix of debt and equity used by companies to fund operations.

The Equity Risk Premium

The cost of equity for any company is composed of a riskfree rate and a risk premium. While there is a consensus that the riskfree rate should be the rate on a default-free government bond (a treasury bond rate in the United States, the rate on a German

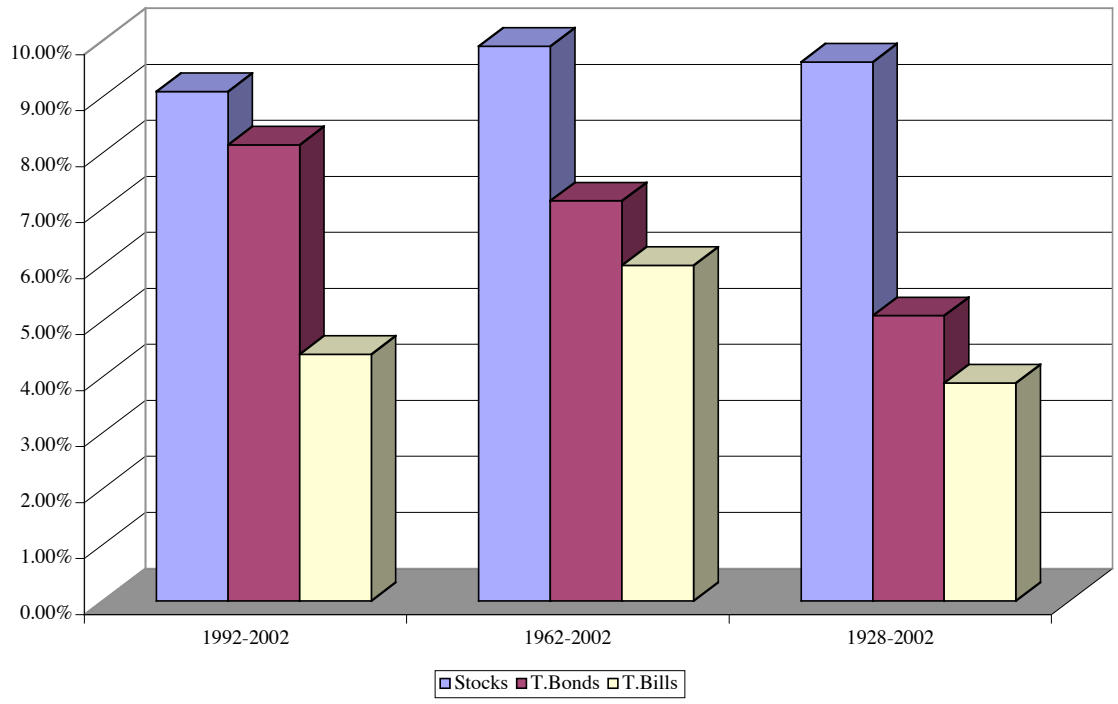
government Euro bond), different risk and return models attempt to estimate the risk premium in different ways. In the simplest version of these models, the capital asset pricing model, the cost of equity for a stock is:

Cost of equity = Riskfree Rate + Beta of stock * Equity Risk Premium

The beta, scaled around one, measures the relative exposure of the stock to market risk and the equity risk premium is an estimate of how much investors require as an additional return for investing in equities as a class.

But what goes into this equity risk premium? One input is obviously the risk aversion of investors. As investors become more risk averse about their and the economy's future, they are likely to demand higher equity risk premiums. In fact, equity risk premiums have historically fallen during economic booms and risen during recessions. Another is the perception of the riskiness of equity investments, with a perception of higher risk going with higher equity risk premiums. Here again, it should come as no surprise that accounting scandals that undercut the reliability of accounting earnings increase equity risk premiums. Many investors look at the past when estimating equity risk premiums, looking at return on stocks and treasuries over very long periods, and figure 2 summarizes these historical premiums:

Figure 2: Geometric Average Annual Returns



Source: Federal Reserve, St. Louis.

What does this table tell us? Over the last 75 years, stocks in the United States have delivered a compounded return of 9.62%, 4.53% more annually than you would have earned investing in treasury bonds over the same period (5.09%). In a much broader study of the ten largest equity markets over the last 100 years, Dimson, March and Staunton estimate an equity risk premium of 3.8%.[4] Historical risk premiums, while easy to compute, are also backward looking and require a lot of history. There is an alternative. An implied equity risk premium[5] is a forward looking estimate and can be obtained by looking at how equities are priced today (the level of the stock index today) and investor expectations of future cash flows from owning equities. Figure 3 provides a graph of the implied equity risk premium of the US market from 1960 to 2002.

Figure 3: Implied Premium for US Equity Market

Note that the implied equity risk premium dropped through the 1990s to reach a historic low of 2% in 1999 and has since climbed back to around 4.10% in 2002.

Why would the equity risk premium be affected by the taxation of dividends? The equity risk premium measures how much more on a pre-personal tax basis investors

---

[4] E.Dimson, P.Marsh and M.Staunton: "Global Investment Returns Yearbook 2003", ABN Amro/London Business School.

[5] For more on implied equity risk premiums and how they are estimated, you can look at Estimating Risk Premiums, Aswath Damodaran, www.damodaran.com (under research/papers)

demand from their equity investments than from a riskfree investment. To the extent that investors are taxed on the income that they make on their equity investments, they will have to demand a higher pre-tax return. Consider a simple example. Assume that all investors pay a 40% tax rate on ordinary income (including dividends and coupons) and face a 20% tax rate on capital gains and that the dividend yield on equities is 5%. Furthermore, assume that the treasury bond rate is 6% and that investors want to end up with an-after tax return on equities which is 4% higher than the after-tax return on treasury bonds (where after-tax is after personal taxes):

Expected return after taxes on treasury bond = 6% (1-.4) = 3.6% (since interest paid on treasury bonds is taxable)

To get an expected after tax return of 7.6% (which is 4% higher than the treasury bond return), investors will have to earn the following:

After-tax return on equities (7.6%)

= Dividend yield (1- ordinary tax rate) + Price appreciation (1- capital gains rate)

= 5% (1-.4) + X% (1-.2)

Price appreciation (X) = 5.75%

Pre-tax return on equities = Dividend Yield + Price appreciation = 5% + 5.75% = 10.75%

To earn an after tax risk premium of 4%, investors will have to demand a pre-tax risk premium of 4.75% (Pre-tax return on equities – Treasury bond rate)

Now assume that investors no longer have to pay taxes on dividends and that they continue to demand the same after-tax premium of 4% (and the same after-tax equity return on 7.6%). The price appreciation needed to get this after-tax return now will be:

7.6% = 5% - X% (1-.2)

X% = 3.25%

The pre-tax return on equity will now have to be only 8.25%, which reduces the pre-tax risk premium from 4.75% to 2.25%, a drop of 2.50%.

In other words, a decrease in tax rates on dividends will affect pre-tax equity risk premiums and the magnitude of the effect will depend upon the average tax rate paid by investors on dividends, the dividend yield on stocks and the after-tax premium demanded by investors for investing in equities. To measure the sensitivity of the change in equity risk premiums to tax rates and dividend yields, table 1 measures the change in the equity risk premium (for a given after-tax premium of 4% and a pre-tax treasury bond rate of 6%):

Table 1: Change in pre-tax equity risk premium if dividends are tax exempt

		Dividend yield on Equities								
		1%	*1.50%*	*2%*	*2.50%*	*3%*	*3.50%*	*4%*	*4.50%*	*5%*
A > e	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	5%	0.06%	0.09%	0.13%	0.16%	0.19%	0.22%	0.25%	0.28%	0.31%
	10%	0.12%	0.19%	0.25%	0.31%	0.38%	0.44%	0.50%	0.56%	0.63%
	15%	0.19%	0.28%	0.38%	0.47%	0.56%	0.66%	0.75%	0.84%	0.94%
	20%	0.25%	0.38%	0.50%	0.62%	0.75%	0.87%	1.00%	1.13%	1.25%
	25%	0.31%	0.47%	0.63%	0.78%	0.94%	1.09%	1.25%	1.41%	1.56%
	30%	0.37%	0.56%	0.75%	0.94%	1.13%	1.31%	1.50%	1.69%	1.88%
	35%	0.44%	0.66%	0.88%	1.09%	1.31%	1.53%	1.75%	1.97%	2.19%
	40%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%
	45%	0.56%	0.84%	1.13%	1.41%	1.69%	1.97%	2.25%	2.53%	2.81%
	50%	0.63%	0.94%	1.25%	1.56%	1.88%	2.19%	2.50%	2.81%	3.13%

The equity risk premium does not change much at low dividend yields and low tax rates, but drops substantially at higher tax rates and dividend yields.

Can we use this table to predict the effect of making dividends tax exempt on current equity risk premiums and therefore the level of stocks? At least from a static perspective, where we hold current dividend yields and tax rates constant, we can. The dividend yield on US stocks in early 2003 was roughly 2% and the average tax rate paid by investors in the market on ordinary income was roughly 21% and the capital gains was 15%[6]. The treasury bond rate in early 2003 was 4% and the pre-tax equity risk premium on January 1, 2003, was 4.1%. Working with these numbers:

Pre-tax Expected return on equities = T.Bond rate + Pre-tax Premium
= 4% + 4.1% = 8.1%

Since the dividend yield was 2%, the expected price appreciation has to be 6.1%.

After-tax Expected return on equities
= Dividend yield (1-Ordinary tax rate) + Price appreciation (1- capital gains rate)
= 2% (1-.21) + 6.1% (1-.15) = 6.765%

After-tax Expected return on treasury bonds = 4% (1-.21) = 3.16%

After-tax Equity Risk premium = 6.765% - 3.16% = 3.605%

If we hold the after--tax expected equity return at 6.765% and change the tax rate on dividends to zero, we can solve for the expected price appreciation after the tax law change:

After-tax return on equity = 6.765% = 2% + Expected price appreciation (1-.15)

Solving for the expected price appreciation, we get

Expected price appreciation = 5.61%

---

[6] About 30% of stocks are held by pension funds and are not taxed. The remaining 70% are held by mutual funds and individual investors. These investors tend to be wealthier and we are assuming an average tax rate of 30% for these investors.

Thus, the pre-tax expected return on equity will become 7.61%, translating into a drop in the equity risk premium from 4.1% to 3.61%.

The final question, though, is what the overall impact on the equity market will be of the change in equity risk premium. Again, holding the dividend yield constant, we valued the S&P 500 using both the 4.1% implied premium and the 3,63% premium:

Value of S&P 500 with an implied premium of 4.1% = 879.82 (on January 1, 2003)

Value of S&P 500 with an implied premium of 3.61% = 1003.02

If our calculations hold up, the change in tax rates would translate into an increase in the level of the index of roughly 13.3%.

What makes this prediction particularly difficult to make is that changes in the tax law are likely to change both corporate and investor behavior. Corporations are likely to pay more in dividends if dividends are tax exempt; in fact, Microsoft and Oracle both announced in the aftermath of the new tax proposal that they would pay dividends. In fact, there will be a shift from stock buybacks to dividends across companies, which should increase the dividend yield across all stocks. In addition, higher tax rate individuals are likely to shift their portfolios to include more high-dividend paying stocks, thus raising the average tax rate for investors. Both of these are likely to increase the effect of the tax change on equity values.

divtaxprem.xls: This spreadsheet allows you to estimate the effect of changing the tax rate on dividends on the equity risk premiums and the overall value of equity.

High Dividend versus Low Dividend Stocks

Adjusting the equity risk premium for changes in the tax status of dividends is a simple way of estimating the aggregate effect on equities. The limitation, though, is that it does now allow us to distinguish between stocks that pay high dividends and stocks that pay very little dividends or no dividends. The effect of changing the tax rate on dividends should be much greater on the former. One way to consider the effect of changing the tax rate on different stocks is to analyze each stock using the approach described in the last section.

1. Given the current stock price and expected dividends on the stock, estimate the required return on the stock. This required return is the pre-tax required return on the stock.
2. Break this required return down into dividends and price appreciation components, using today's dividend yield. Then compute the after-tax return, using the average tax rate (ordinary income and capital gains) of individuals holding the stock.

3. Compute the after-tax risk premium demanded on the stock using this after-tax return on the stock and the after-tax treasury bond rate.
4. Holding the after-tax premium fixed, recompute the pre-tax expected return assuming that dividends do not get taxed.
5. Revalue the stock using this pre-tax expected return and calculate the change in the stock price.

Let us consider two examples – Consolidated Edison, a power utility serving the New York area, and Coca Cola, the beverage giant. In table 2 below, we list out the key values for the two companies in January 2003:

Table 2: Fundamentals of Companies

	Consolidated Edison	*Coca Cola*
Price per share	$42.90	$40.73
Dividends per share	$2.18	$0.88
Dividend Yield	5.08%	2.16%
Expected growth rate in earnings & dividends	3% forever	15% for 5 years 4% thereafter

If we take the market price as a given, we can solve the pre-tax return required by equity investors in each stock. For Consolidated Edison, this is relatively simple since dividends are in perpetual growth:

Price = $42.90 = Expected dividends next year / (r – g) = 2.18 (1.03)/(r - .03)

Solving for r, we get:

Pre-tax Required Return on Equity= 8.23%

For Coca Cola, the process is a little more complicated. Setting up the equation:

Price = $ 40.73 = $1.01/(1+r) + 1.16/(1+r)^2 ++ 1.34/(1+r)^3 + 1.54/(1+r)^4 + 1.77/(1+r)^5 + (1.84/(r-.04)) /(1+r)^5$

Solving for r, we get:

Pre-tax Required Return on Equity = 7.61%

Converting both pre-tax return to after-tax returns, using a 21% tax rate for dividends and 15% for capital gains:

After-tax return for Con Ed

= Dividend yield (1 – Ordinary tax rate) + Price appreciation (1 – Capital gains tax rate)

= 5.08% (1-.21) + (8.23%-5.08%)(1-.15) = 6.69%

After-tax return for Coca Cola

= Dividend yield (1 – Ordinary tax rate) + Price appreciation (1 – Capital gains tax rate)

= 2.16% (1-.21) + (7.61%-2.16%)(1-.15) = 6.34%

If the taxes on dividends goes to zero, the price appreciation and pre-tax return needed for each of these stocks to deliver the same after-tax return will decrease:

Pre-tax Price appreciation: post tax law change: Con Ed = (6.69% - 5.08%)/(1-.15) = 1.9%

Pre-tax return on Con Ed = 5.08% + 1.90% = 6.98%

Revaluing Con Ed using this new pre-tax return, we get

New Value: Con Ed = 2.18 (1.03)/(.0698 - .03) = $56.44

Increase in value for Con Ed = (New Value/ Price today) –1 = (56.44/42.90) –1 = 31.56%

For Coca Cola:

Pre-tax Price appreciation: post tax law change: Coke = (6.34% - 2.16%)/(1-.15) = 4.92%

Pre-tax return on Coca Cola = 2.16% + 4.92 = 7.08%

New Value: Coca Cola = $1.01/(1.0708) + 1.16/(1.0708)^2 + 1.34/(1.0708)^3 + 1.54/(1.0708)^4 + 1.77/(1.0708)^5 + (1.84/(.0708-.04))/(1.0708)^5 = \$47.93$

Increase in value for Coca Cola = 47.93/40.73 –1 = 17.68%

The effect of changing the tax treatment on dividends will be much greater for firms that pay high dividends like Con Ed.

stockvaldiv.xls: This spreadsheet allows you to estimate the effect of changing the tax rate on dividends on the values of individual stocks.

The Trade Off between Growth and Cashflows

There is one final element of the valuation relationship that can be indirectly affected by changes in the tax treatment of dividends. If corporations start paying more dividends in response to the tax law change, it is possible that they will reinvest less back into the business. This, in turn, will lower expected growth. In fact, the sustainable growth rate in earnings per share for a company can be written as:

Expected growth rate = (1 – Dividends / Earnings) * Return on Equity

A firm with a 30% dividend payout ratio and a 15% return on equity will therefore have an expected growth rate of 10.5%.

Expected growth rate = (1-.30) (.15) = .105 or 10.5%

If this firm increases the amount it pays in dividends, it will reduce its expected growth rate.

Will this automatically reduce the value of equity in this company and make equity investors worse off? Not necessarily. Higher growth does not always increase value, especially if growth is created by poor investments. One simple measure of the quality of a firm's investments is the difference between a firm's return on equity and its cost of equity. A firm that earns a return on equity greater than its cost of equity is taking good projects whereas a firm that earns a return on equity less than its cost of equity is investing in poor

projects. The latter will see its value of equity go up if it redirects funds from projects to dividends. The former will see its value of equity go down if it redirects funds from projects to dividends.

In summary, higher corporate dividends can have unpredictable effects on value, depending upon which firms increase dividends. If firms with poor investment prospects increase dividends, equity value will increase as the cash that would otherwise have been wasted on these projects is returned to stockholders. They, in turn, can find other companies that have better and more lucrative investment opportunities to invest this cash in. If firms with good investment projects increase their dividends and reduce how much they reinvest, there will be a loss in value both to equity investors in the company and to society overall.

Dividends and Corporate Finance

For fifty years, corporate finance textbooks and articles, have been based upon the premise that dividends are double taxed and interest expenses on debt are not. This has formed the basis for much of the discussion about how much a firm should borrow and whether and how much it should pay in dividends. In this section, we will consider the corporate finance implications of changed tax status for dividends.

Investment Policy

The conventional approach to project analysis requires us to forecast the cashflows from the project and discount these cashflows at an appropriate risk-adjusted rate to arrive at a net present value. Projects with positive net present value are considered good projects whereas projects with negative net present value reduce the value of the companies that take them.

Changing the tax status of dividends will affect investment analysis in two ways. The first is through the discount rate. As we noted in the last section, reducing taxes paid on dividends will reduce the equity risk premium and the cost of equity. This, in turn, will reduce the cost of capital and potentially make projects that were unattractive before the tax law change into at least marginally attractive investments. Since the change in the cost of capital is likely to be small (0.5% to 1%), the effect will be relatively small. The second is that the pattern of earnings and cash flows on projects may play a role in whether firms invest in them in the first place. Since only firms that pay taxes on their income will be eligible for tax exempt dividends, they may choose not to invest in projects that have large and negative effects on corporate earnings in the earlier years even if they pass the net present value test. A good example would be a large infrastructure investment with a long gestation period; this project will reduce the company's earnings in the first few years after

it is taken because the depreciation charges are likely to be large and there is no income during that period. Even though the project may make up for it in the later years by generating high positive cash flows, firms may avoid this project because of its potential to put the dividend tax benefit at risk in the early years.

The Capital Structure Debate

It is the trade off between debt and equity that is most directly affected by changing the tax treatment of dividends. The consequences, as we will see, can be profound for the right financing mix for a firm and the costs of taking on debt in the first place.

The trade off between debt and equity under current tax law is simple. The biggest benefit of debt is a tax benefit, since interest on debt is tax deductible and dividends are not. A secondary benefit is the discipline that can be introduced into poorly managed firms by forcing them to borrow money; the added risk of bankruptcy will make the managers of these firms less likely to make poor investments. Both these benefits will be scaled down if dividends to investors are tax exempt. While debt will still retain a tax advantage, because interest remains tax deductible to companies and dividends are not, the relative advantage of debt will decrease because the cost of equity will decrease (due to the drop in the equity risk premium). If companies start paying more in dividends in response to the change in the tax law, the need for debt to discipline managers will also decline since managers will not only accumulate far less cash but may also take fewer sub-par projects.

On the other side of the ledger, the new tax law will introduce a potent new cost to debt. In addition to the bankruptcy and agency costs that come with borrowing more money, too much debt can also create a potential lost tax benefit to investors in the company. This is because the dividend tax exemption is available only to firms that pay taxes, and the taxable income is more likely to be negative when a firm has substantial interest payments.

The net effect of reducing the benefits to using debt and increasing the potential cost will be lower optimal debt ratios for all firms, though the effect will vary across firms. The magnitude of the change will depend upon the change in cost of equity – the greater the drop in the equity risk premium, the more pronounced will be the shift to equity – and also on the specific characteristics of the firm – firms with more volatile operating earnings will be less likely to put the dividend tax exemption at risk by borrowing money in the first place. If you combine the increase in dividends with less willingness to use debt, you

should expect to see far more seasoned equity issues by US firms than you have historically.[7]

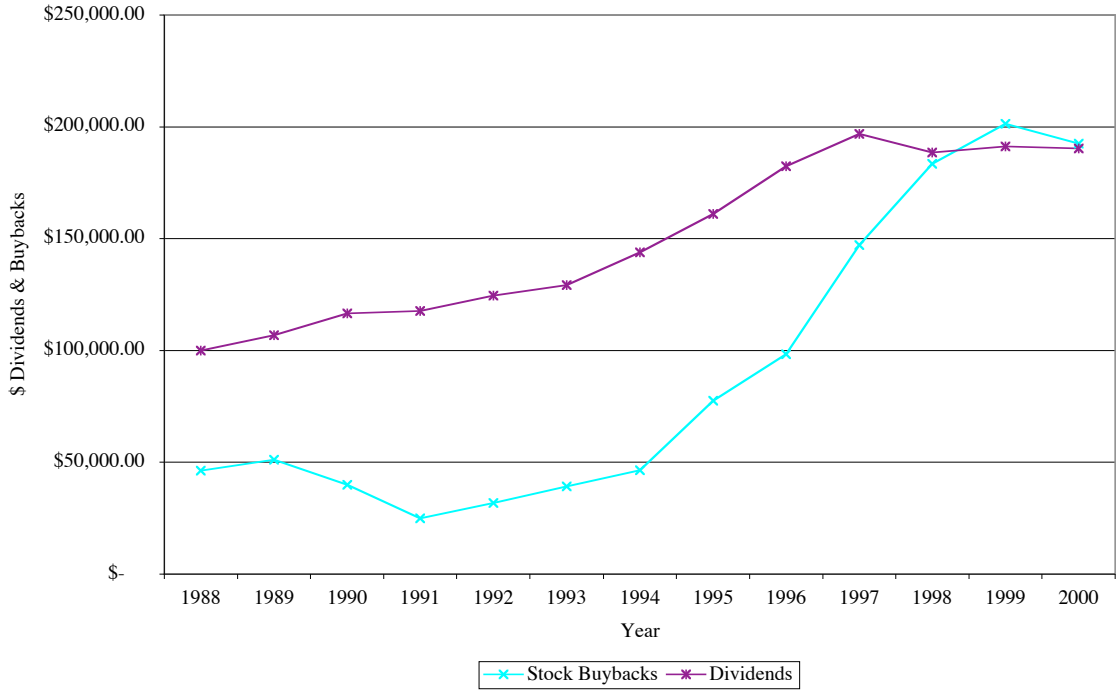
capstru.xls: This spreadsheet allows you to estimate the effect of changing the tax rate on dividends on the optimal capital structure for a company.

The Dividend Policy Debate

For decades, corporate finance theorists have examined at the practice of paying dividends and wondered why firms continue the practice, exposing investors to ordinary taxes, when they could have accomplished the same goal of returning cash to stockholders by buying back stock. There have been numerous arguments made for the persistence of dividends. One is that dividends operate as signals of financial health – firms that increase dividends are signaling their confidence in future cash flows - and the other is that investors tend to hold stocks with dividend policies that they prefer – the clientele effect. In the last two decades, firms have increasingly shifted from paying dividends to buying back stock. Figure 4 presents the aggregate dividends and stock buybacks paid by US companies from 1980 to 2000. Note that aggregate buybacks exceeded aggregate dividends paid for the first time in 1999.

[7] In the United States, publicly traded firms have been far more willing to raise new financing with debt (or bond issues) than with seasoned equity issues.

Figure 4: Stock Buybacks and Dividends: Aggregate for US Firms - 1989-98



The shift towards stock buybacks can be viewed both as a recognition that dividends create larger tax liabilities for investors and a result of the increasing volatility of earnings at US companies.

Whatever the reason for the shift towards stock buybacks, a change in the tax treatment of dividends will significantly alter the trade off. If dividends are tax exempt to investors and capital gains are taxed at the capital gains rate, it is dividends that now have the tax advantage over capital gains[8]. Firms should increasingly therefore shift back towards dividend payments. While this may put them at higher risk because of volatile earnings, there will be two ways in which they can alleviate the problem.

- One is to shift to a policy of *residual dividends*, where dividends paid are a function of the earnings in the year rather than a function of dividends last year. Note that the sticky dividend phenomenon in the US, where companies are reluctant to change their dollar dividends, is not a universal one. In countries like Brazil, companies target dividend payout ratios rather than dollar dividends and there is no reason why US companies cannot adopt a similar practice. A firm that targets a constant

[8] This may be partially alleviated by the proposal to allow investor to increase the book value of their equity holdings if companies set aside money for future investments, thus reducing their eventual capital gains taxes. Without an inflation adjustment, this will provide only partial protection for capital gains.

dividend payout ratio will pay more dividends when its earnings are high and less when its earnings are low, and the signaling effect of lower dividends will be mitigated if the payout policy is clearly stated up front.

- The other is to adopt a policy of regular dividends that will be based upon sustainable and predictable earnings and to supplement these with special dividends when earnings are high. In this form, the special dividends will take the place of stock buybacks.

In summary, you can expect both more dividends from companies and more creative dividend policies, if dividends are tax exempt.

Collateral Consequences

Changing the tax treatment of dividends affects equities directly but it indirectly affects all other markets as well because investors shift money across markets. If equity risk premiums come down and more funds move into equities, this money is coming from other markets. In particular, the corporate bond market is likely to see significant shifts both in the volume of new bond issues and in pricing. In addition, the new tax laws will create new challenges (and the potential for new products) in both the tax and risk management practices of corporations.

The Bond Market

Changing the tax treatment of dividends is likely to have a significant impact on all of the bond markets. We will begin with a look at the corporate bond market but there are likely to be repercussions for the treasury and the municipal bond markets as well.

The most direct impact on the corporate bond market of the proposed tax law changes will be in the volume of bond issues. If, as we argued in the last section, corporations shift increasingly to seasoned equity issues to raise money, they will use debt less. New bond issues are likely to decrease and the change is likely to be largest in the lower rated bonds. Companies that would have issued lower rated bonds are more likely to shift to equities because the fear of losing the dividend tax exemption is likely to be larger at these companies. The default spreads that investors demand for investing on corporate bonds is also likely to change. If buying stocks and receiving dividends becomes more tax efficient than buying corporate bonds and receiving coupons (which will still be taxed at the ordinary tax rate), investors will demand larger default spreads on bonds, pushing up interest rates in every ratings class and pushing down bond prices.

The argument for higher interest rates on corporate bonds, because they will become less attractive relative to equity, can also be made for treasury bonds. There could be an

increase in treasury bond rate to reflect the fact that treasury coupons will continue to be taxed, but the effect is likely to be muted because of the large percentage of treasury bonds that are held by tax exempt entities and foreign investors. The municipal bond market, where coupons have always been tax exempt, will now have direct competition from stocks and it is very likely that municipal bonds will have to be priced to yield higher rates than they do currently.

Tax Management

For decades, the objective in tax management at corporations has been to pay as little in dividends you can, while continuing to report healthy earnings. Holding all else constant, a company that pays lower taxes, for any given level of income, will be worth more than a company that pays higher taxes. The new tax law could add a wrinkle to this process. If in the process of trying to minimize taxes paid, a company pays no taxes, investors in the company could lose a substantial tax benefit. Thus, the objective in risk management has to be modified to paying as little in taxes as possible with the constraint that you would still want to pay some taxes.

Risk Management

In the last three decades, companies have increased their use of risk management products, ranging from publicly traded derivatives (options and futures on commodities and financial assets) to customized products for two reasons:

- *Earnings Stability*: Proponents of the use of risk management products believe that the more stable earnings that result from the use of risk management products are valued more highly by investors, though there is little empirical evidence in support of this proposition.
- *Reduce default Risk*: Firms that are exposed to default risk because of unpredictable changes in commodity prices or currencies are able to reduce their risk exposure by using risk management products.

A third reason can now be added for the use of risk management products. If in addition to making earning more stable, risk management products reduce the likelihood of negative earnings (and the loss of the dividend tax benefit that follows).

There is a potential here for new risk management products designed to provide protection against negative earnings. A couple are listed below:

- *Loss Insurance*: Companies will pay to buy insurance against making losses. For firms with stable earnings where the likelihood of losing money is small, the costs for this insurance are likely to be reasonable.

- *New types of bonds*: One of the perils of borrowing or issuing bonds is that firms commit to making interest payments even in when they suffer operational setbacks. The cost of lost tax benefits created for investors by losses will create demand for bonds where interest payments are contingent (at least partially) on the firm making money. Take, for instance, surplus notes, where firms have to pay interest on the notes only if they make money and can delay or defer interest payments in the event of losses. Insurance companies have historically used this product to buffer their equity capital reserves but the use could very well spread to other companies that want to minimize the likelihood of losses caused by large interest payments.

From the Micro to the Macro: Effects on the Economy

Will this tax law provide a stimulus to the economy? We really do not know. In the short term, it is difficult to see how a lower cost of equity and smaller risk premiums will translate into higher capital investments by companies. In the long term, there will undoubtedly be consequences for the economy, many positive and some potentially negative. The positive consequences are:

- The decline in corporate debt and the increasing use of equity will be positive news for the economy. Note that the tax benefits of debt are ultimately borne by other tax payers in the economy and a shift to equity will require projects to be justified based upon their returns and less on the tax benefits created by debt.
- When firms become financially distressed, the costs are substantial not only for employees, customers and investors in the firms, but also for society. A shift towards equity in funding will reduce both the number of firms in distress and the likelihood of distress for all firms.
- A lower equity risk premium should translate into more real investment on the part of firms in the long term.
- By increasing the incentives to pay dividends, the tax law will reduce the cash held and the investments made by the least efficient firms in the market. The cash paid out as dividends can be redirected by investors to firms with better investment prospects.

The potential negative consequences are:

- If the desire to pay dividends causes firms to shift funds from good investments to dividends, these firms and society will pay a price in the form of less real investment and lower growth.

- The shifting of funds towards equity from the corporate bond and treasury bond market can cause increases in interest rates that overwhelm the decline in the equity risk premium.

In summary, the argument that changing the tax treatment of dividends will correct distortions created by a century of preferred tax treatment for debt is much stronger than the argument that the tax law change will be a short term stimulus to the economy. Of course, an increase in equity markets of the magnitude that we estimated in the valuation section – about 13% - will be a powerful boost to both investor and consumer spirits in a market where investors have lost so much faith in equities over the last few years.

Conclusion

For a century in the United States, dividends have been taxed as ordinary income in the hands of investors. If dividends become tax exempt, there will be substantial changes in both how investors value stocks and also in how corporations raise funds. The effect of changing the taw law on valuations will most likely show up in the rates of return that investors demand for investing in stocks, i.e., the equity risk premium. The premium demanded by investors for investing in equities currently reflects the fact that dividends are taxed at higher rates. Eliminating or reducing the tax paid by investors on dividends should reduce the equity risk premium. While we estimate a drop in the equity risk premium of 0.47%, based upon current assessments of dividend yield and investor tax rates, the drop could be much larger if companies start paying more in dividends. This drop in the risk premium translates into an increase in equity prices of roughly 13%. Across stocks, the increase in value is likely to be larger for stocks with high dividend yields than for stocks with low or no dividends.

The effects on corporate financial decisions are likely to be even more profound and long lasting. The fact that dividends will lose their tax exemption if earnings are negative will affect investment policy and investments that put earnings at risk – heavy infrastructure and long gestation period investments – may be avoided by firms even though they may pass conventional financial thresholds. The advantages of debt, relative to equity, will decrease as the cost of borrowing rises and the cost of equity declines, and the disadvantages of debt will increase – higher interest payments make it more likely that you will have losses and investors will lose their tax benefits. Firms consequently will shift to more equity funding for projects and less debt, resulting in a drop off in corporate bond issues and an increase in seasoned equity issues. Finally, the shift towards stock buybacks from dividends that we have observed over the last two decades is likely to be not only halted but reversed. Since dividends now will have a tax advantage over capital gains, firms

will not increase the amount they pay in dividend but shift to a policy of paying residual dividends each year.

In the long term, the shifts caused by making dividends tax deductible will be positive. Projects will have to stand on their own merits rather than be carried by tax benefits on borrowing and firms will invest more in real assets. While the change in the tax law, by itself, may provide little short-term stimulus to the economy, any action that makes equity a more attractive choice will be welcomed by investors after three years of news to the contrary.