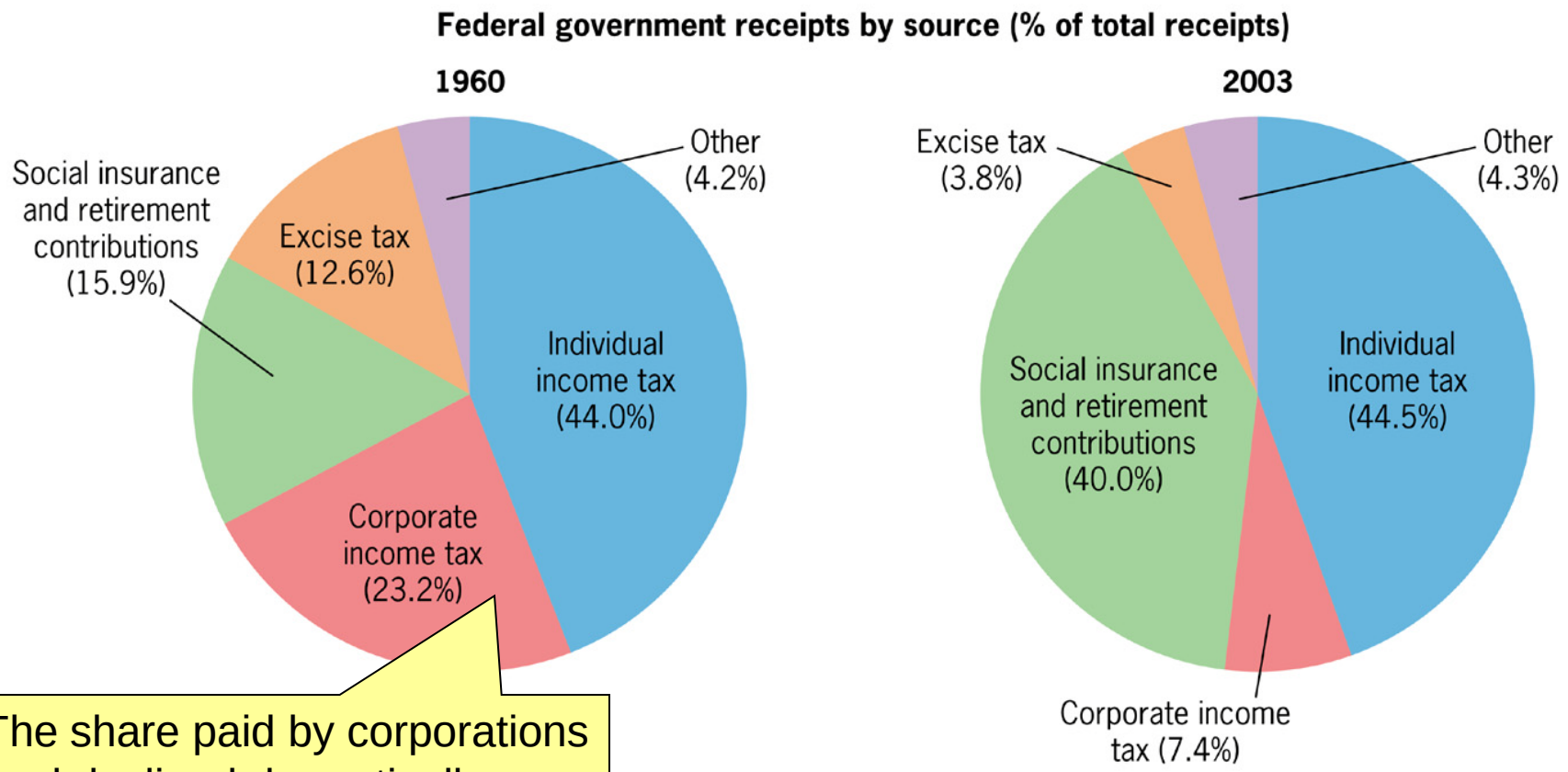
Corporate Income Tax and Investment behavior

Introduction

- Corporations are taxed on net earnings at a statutory rate of 35%, but in practice face rates that are much lower because of "loopholes."
- **Figure 1** shows the decline in the share of revenue from the corporate income tax.

Figure 1



The share paid by corporations had declined dramatically over the last 45 years.

Introduction

- In 1960, almost 25% of federal tax revenue was raised through the corporate income tax.
- It is less than 8% today.

Introduction

- To its detractors, the corporate income tax is a major drag on productivity in the corporate sector, and the reduction in the tax burden has led to increased investment in productive assets.
- To its supporters, the corporate income tax is a major safeguard of the overall progressivity of the entire tax system.

Introduction

- This lesson has several goals:
  - Understand the structure of the corporate income tax
  - Examine how the corporate tax affects investment decisions
  - Examine how the corporate tax affects financing decisions, that is, whether to issue bonds or sell stock to finance a venture
  - Understand the complexities of corporate taxation in global markets

WHAT ARE CORPORATIONS AND WHY DO WE TAX THEM?

- Corporations account for roughly 75% of all sales in the United States.
- ***Shareholders*** are individuals who have purchased ownership stakes in a company.
  - The key advantage of incorporation is *limited liability* – the owners of a firm cannot be held personally accountable for the obligations of the firm.
- There are two types of corporations.
  - Income from "S-corporations" is treated as personal income and subject to the personal income tax.
  - Income from "C-corporations" is subject to the corporate tax, and may also be subject to the personal income tax when it is distributed to the shareholders.

What are corporations and why do we tax them? Ownership versus control

- Most corporations separate ownership from control. Shareholders do not manage the day-to-day operations, instead managers do.
- The ***agency problem*** is a misalignment of the interests of the owners and managers of a firm.
  - For example managers may argue for "perks" or compensation that does not reflect the most productive uses for the company.

Executive compensation and the agency problem

- A classic example of this agency problem is in the compensation of top executives. Why do CEOs get paid so much?
  - First, they may be worth it by adding value to the company. Yet some CEOs, such as at Conseco, were paid vast sums of money even when the value of the company fell.
  - Second, the agency problem means the owners of the company have a hard time keeping track of actual compensation, even with a board of directors.
- The ***board of directors*** are a set of individuals who meet periodically to review decisions made by a firm's management and report back to the broader set of owners on management's performance.

Executive compensation and the agency problem

- For example, when Richard Grasso retired as the head of the NYSE, and claimed $187 million severance, few of the directors actually understood Grasso's complicated contract.
- At times, such compensation crosses from being ludicrous to illegal. Tyco CEO Dennis Kozlowski went on trial accused of looting $600 million.

What are corporations and why do we tax them? Firm financing

- Imagine that a firm needed to fund an investment. It has two options:
  - Debt finance
  - Equity finance
- How do these methods differ and what are their tax implications?

What are corporations and why do we tax them? Firm financing

- ***Debt finance*** is the raising of funds by borrowing from lenders, such as banks.
- It is often done by selling corporate bonds.
  - ***Bonds*** are promises by a corporation to make periodic interest payments, as well as ultimate repayment of principal, to the bondholders (the lenders).

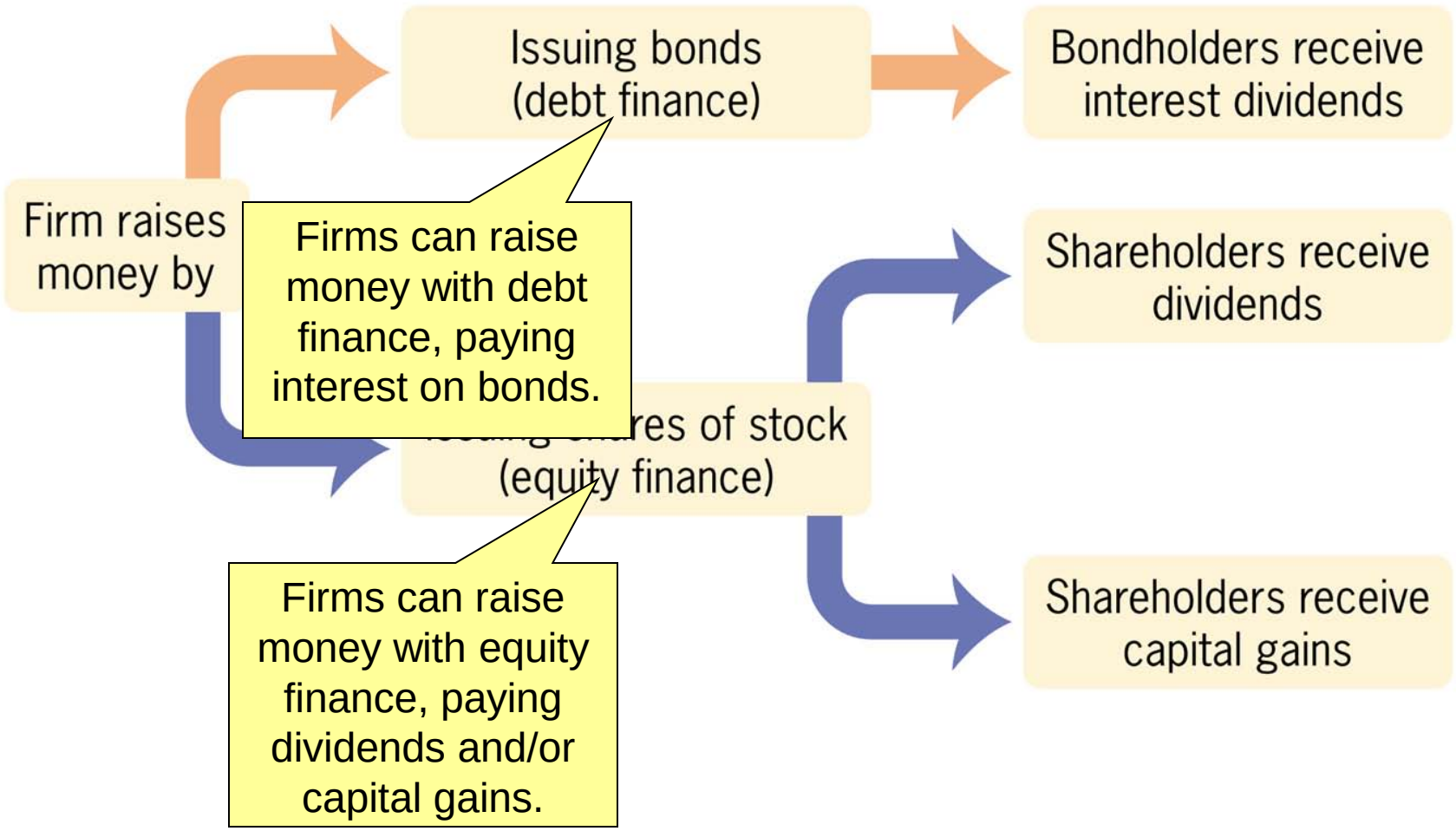
What are corporations and why do we tax them? Firm financing

- ***Equity finance*** is the raising of funds by sale of ownership shares in a firm.
- Investors who buy shares in the company can be rewarded in two different ways – dividends or capital gains.
  - A ***dividend*** is a period payment investors receive from the company per share owned.
  - A ***capital gain*** is the increase in the price of a share since its purchase.

What are corporations and why do we tax them? Firm financing

- **Figure 2** illustrates the methods of financing, and the rewards to the investors.

Figure 2


Firm raises money by
Issuing bonds (debt finance)
Bondholders receive interest dividends
Firms can raise money with debt finance, paying interest on bonds.
res of stock (equity finance)
Shareholders receive dividends
Shareholders receive capital gains
Firms can raise money with equity finance, paying dividends and/or capital gains.

What are corporations and why do we tax them? Why do we have a corporate tax?

- Why do we have a corporate income tax? When we tax firms, we are ultimately taxing the factors of production that make up those firms.
- Shouldn't we just tax labor and capital directly? There are at least two reasons to tax corporations:
  - A "pure profits tax" does not distort output
  - Retained earnings provide an escape from taxation

What are corporations and why do we tax them? Why do we have a corporate tax?

- To the extent that firms have market power, they will earn pure profits, returns that exceed their payouts to the factors of production.
- ***Pure profits*** for a monopoly are the returns that exceed a firm's payouts to its factors of production.
- Diamond and Mirlees (1971) established that a pure profits tax is a much better way to raise revenue than taxing factors of production, because it does not distort output.
  - The same quantity of output still maximizes profits, just at a smaller profit level.

What are corporations and why do we tax them? Why do we have a corporate tax?

- While the pure profits tax seems like a good idea, it is not the way the corporate income tax works.
- First, corporate taxes are not pure profits taxes because corporations can lower their liability by changing inputs.
- Second, the corporate tax taxes accounting profits, not economic profits.
  - ***Economic profits*** are the difference between a firm's revenues and its economic opportunity costs of production.
  - ***Accounting profits*** are the difference between a firm's revenues and its reported costs of production.

What are corporations and why do we tax them? Why do we have a corporate tax?

- A second motivation for a corporate income tax is related to retained earnings.
- If corporations were not taxed on their earnings, but individuals were taxed on corporate payouts, then corporations could avoid taxes by never paying out their earnings.
  - The earnings would accumulate tax-free inside the corporation.
  - The present discounted value of the tax burden would be quite low if the earnings were paid out far in the future.

THE STRUCTURE OF THE CORPORATE TAX

- The corporate income tax is very complicated, but the basic tax burden is be summarized as:
  - Tax Burden = [(earnings-expenses)t] – *ITC*
- Each component of this equation is discussed below.

The structure of the corporate tax Earnings

- *Earnings* of the firm are simply the revenues it earns by selling goods and services to the market.

The structure of the corporate tax Expenses

- A firm's expenses consist of the cash-flow costs of doing business, interest payments, and depreciation.
  - The cash-flow costs include labor costs, advertising, purchases of nondurable inputs, etc.
  - Interest payments are payments to those who lend the firm money.
  - Both of these are fully deductible in the year incurred.
- ***Depreciation*** is the rate at which capital investments lose their value over time.
  - ***Depreciation allowances*** are the amount of money that firms can deduct from their taxes to account for capital investment depreciation.
  - Thus, unlike cash-flow costs and interest payments, depreciation allowances are not usually fully deductible in the year of purchase.

The structure of the corporate tax Expenses

- In principle, firms should be allowed to deduct the true decline in the value of the asset from one year to the next.
  - ***Economic depreciation*** is the true deterioration in the value of capital in each period of time.
  - If the market value of a machine fell by $10,000, that is the economic depreciation.
- In practice, it is difficult to observe the true rate of depreciation. As a result, the tax code has adopted various depreciation schedules.
  - ***Depreciation schedules*** are the timetable by which an asset may be depreciated.

The structure of the corporate tax Expenses

- Depreciation schedules have different approaches for assigning depreciation costs.
  - *Straight-line* depreciation schedules set equal depreciation deductions in all years of the life of the asset.
  - *Accelerated* depreciation schedules offer larger deductions in the earlier years.
  - ***Expensing investments*** is deducting the entire cost of the investment from taxes in the year in which the purchase was made.
    - This is simply the most extreme form of accelerated depreciation.
- The value of the depreciation deductions rises with the speed at which they are allowed.

The structure of the corporate tax Expenses

- For example, consider a $100,000 asset with a ten-year life on a straight-line depreciation schedule and a 10% discount rate:

$$\$10{,}000 + \frac{\$10{,}000}{1.1} + \frac{\$10{,}000}{(1.1)^2} + \ldots + \frac{\$10{,}000}{(1.1)^9} = \$61{,}446$$

- With a statutory corporate rate of 35%, these deductions are worth $21,506 in the present, lowering the effective price of the asset from $100,000 to $78,494.

The structure of the corporate tax Expenses

- With a five-year accelerated depreciation schedule (and a 10% discount rate):

$$\$20{,}000 + \frac{\$20{,}000}{1.1} + \frac{\$20{,}000}{(1.1)^2} + \frac{\$20{,}000}{(1.1)^3} + \frac{\$20{,}000}{(1.1)^4} = \$75{,}816$$

- With a statutory corporate rate of 35%, these deductions are worth more -- $26,535 in the present, lowering the effective price of the asset from $100,000 to $73,465.

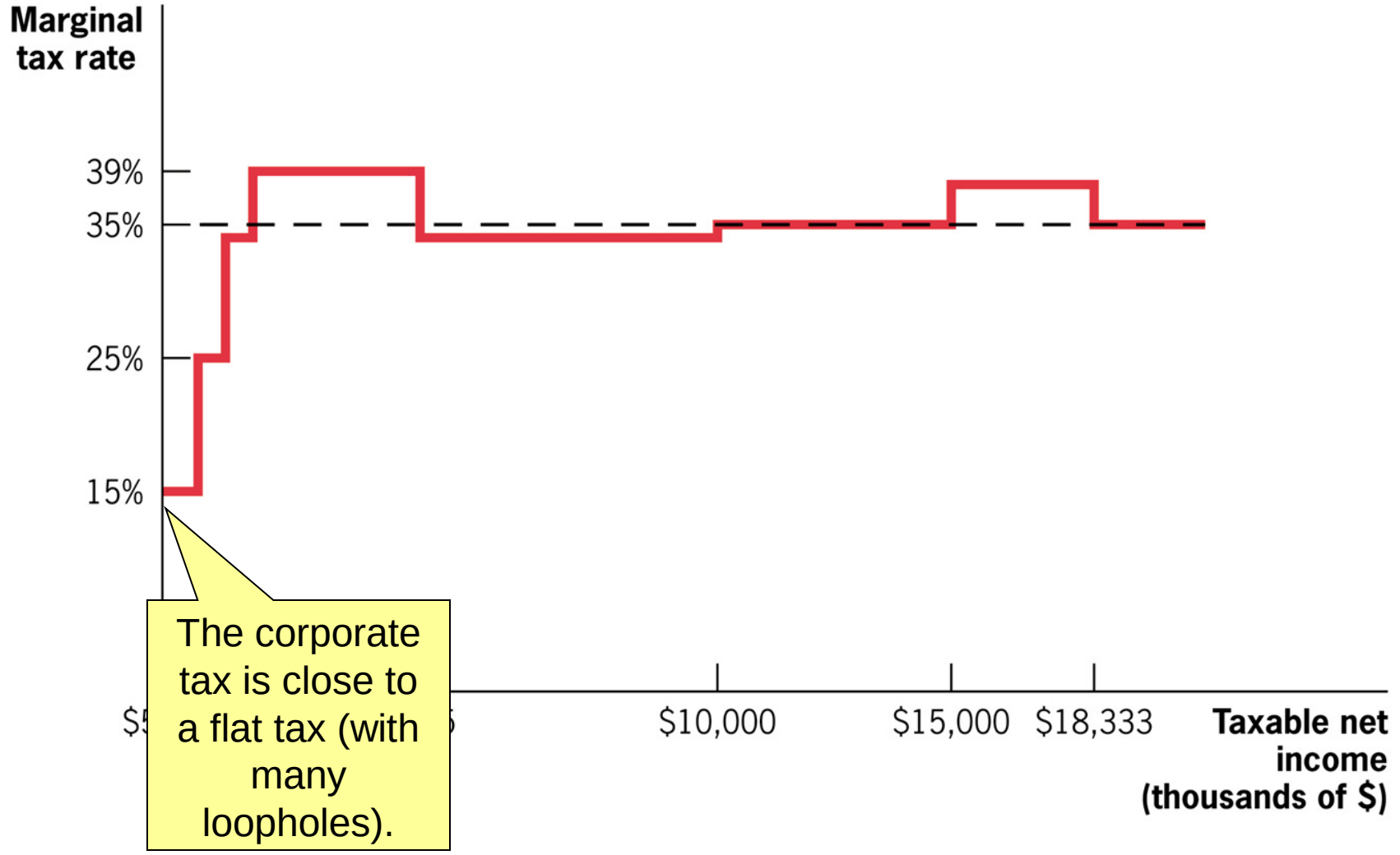
What is economic depreciation? The case of personal computers

- A recent study showing the difficulties in defining economic depreciation is Doms, et al. (2003).
- Personal computers were found to have *exponential*, not linear, depreciation. The value fell by 50% each year, so they were essentially worthless after five years.
- Most of the depreciation, unsurprisingly, is not from physical wear-and-tear, but rather the revaluation of the computer as microprocessors improve and new software makes the computer obsolete.

The structure of the corporate tax
Corporate tax rate

- The next feature of the corporate tax schedule is the corporate tax rate.
- Although the schedule has a number of different tax rates, the vast majority of corporations face the statutory 35% tax rate.
- **Figure 3** shows the current schedule.

Figure 3


Marginal tax rate
39%
35%
25%
15%
$10,000
$15,000
$18,333
Taxable net income (thousands of $)
The corporate tax is close to a flat tax (with many loopholes).

The Structure of the Corporate Tax Investment tax credit

- The final component to compute tax burden is the ITC.
- The ***investment tax credit (ITC)*** is a credit that allows firms to deduct a percentage of their annual qualified investment expenditures from the taxes they owe.
  - It has been a periodic feature in the tax code, but it has not been in effect since 1986.

THE INCIDENCE OF THE CORPORATE TAX

- The tools of general equilibrium analysis can be used to assess the incidence of the corporate income tax.
- First, consumers will likely bear some of the tax in the form of higher prices. The corporate sector produces the majority of goods and services in the economy, so demand is likely not to be perfectly elastic.

THE INCIDENCE OF THE CORPORATE TAX

- Second, corporations will also bear some of the tax, distributed across labor and capital.
  - Since the corporate sector employs a large share of the labor force, it is likely that the supply of labor is not perfectly elastic.
  - In the short-run, capital is fairly immobile, and would likely bear much of the incidence of corporate taxation.
  - In the long-run, investors can turn to the non-corporate sector or other countries. In fact, capital is likely more responsive in the long-run than is labor.
  - In addition, there are general equilibrium effects. An influx of capital into the noncorporate sector lowers the rate of return in that sector, so the noncorporate sector bears some of the incidence.

THE INCIDENCE OF THE CORPORATE TAX

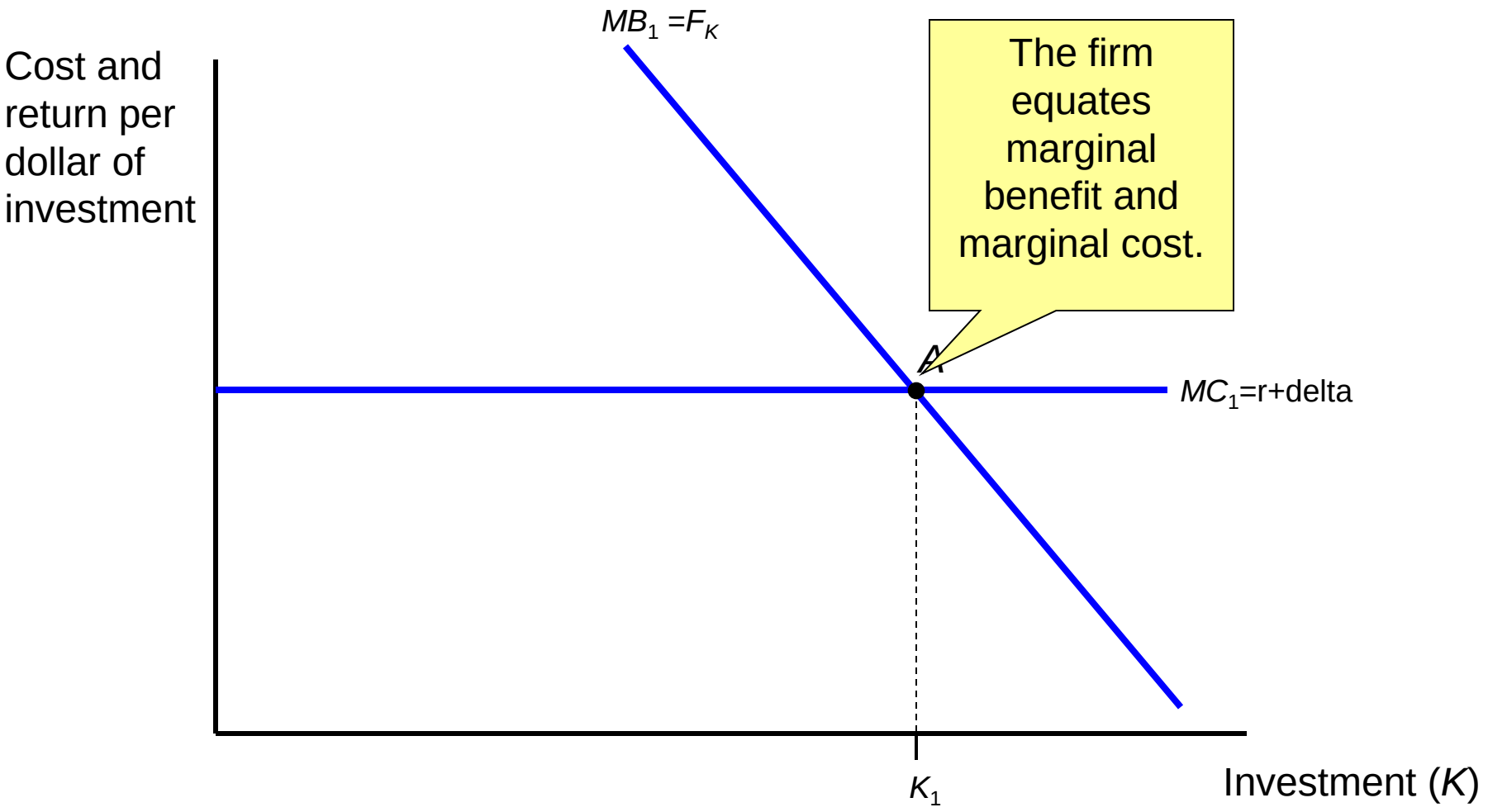
- Taken together, the burden of the corporate tax is shared by consumers, workers, corporate investors, and non-corporate investors.
- Little convincing evidence on the magnitudes, however.

THE CONSEQUENCES OF THE CORPORATE TAX FOR INVESTMENT

Theoretical analysis of corporate tax and investment decisions

- The investment decision is determined by setting marginal benefits and costs of investment equal on a per-period basis.
- Corporate income taxes, depreciation, and ITCs will shift the marginal benefit and marginal cost curves around.
- **Figure 4** shows the simplest case, without any taxes.

Figure 4


Cost and return per dollar of investment
$MB_1 = F_K$
The firm equates marginal benefit and marginal cost.
A
MC_1=r+delta
K_1
Investment (K)

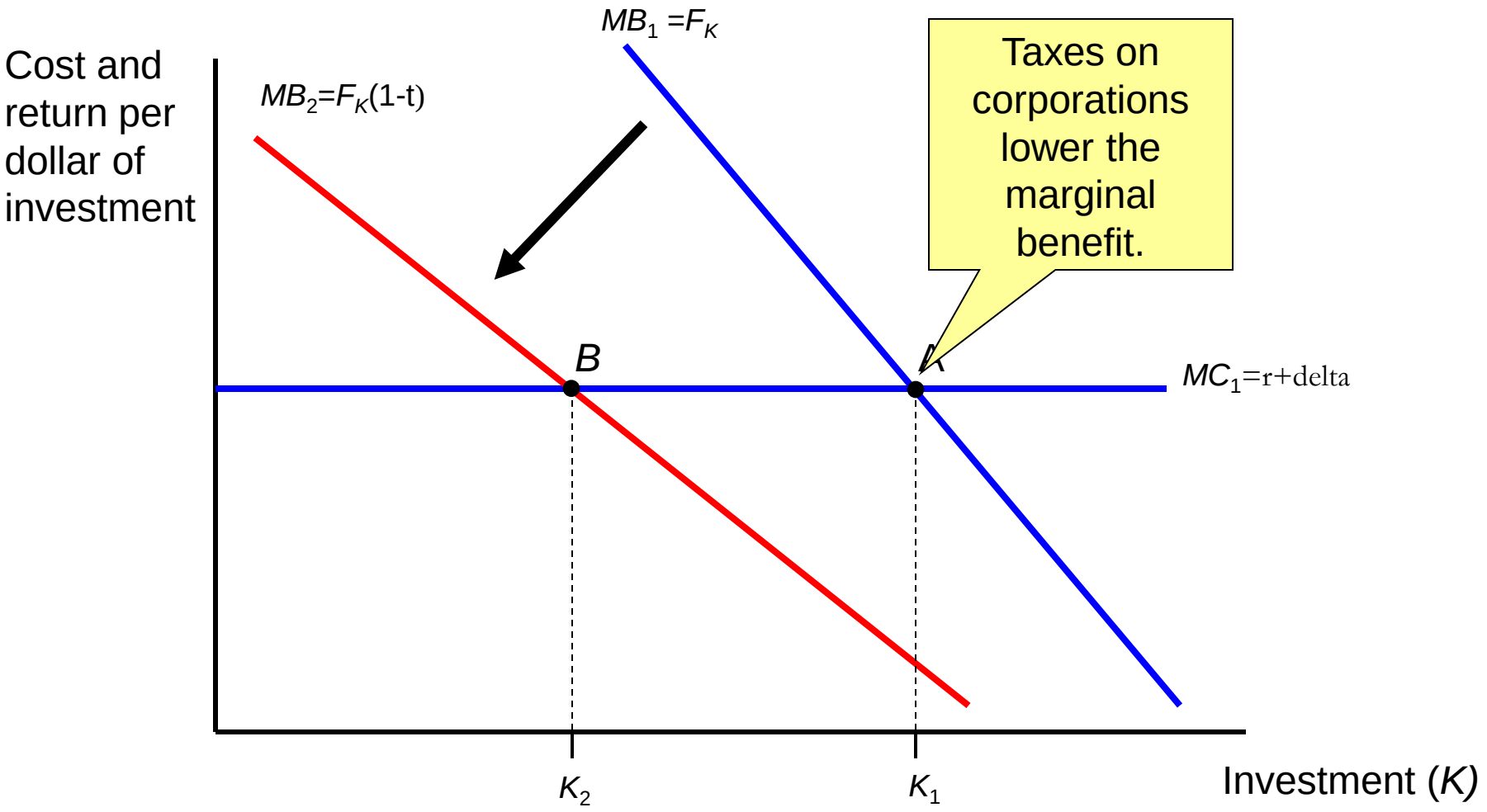
The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- In this figure, the marginal benefit of investment is given by the *marginal product of capital*, denoted as F_K.
- This marginal benefit is downward sloping because of diminishing marginal returns.
- The marginal cost of investment is constant (for this example), and equal to the sum of per-period deprecation costs (delta) and financing costs (r).
- Investment is K_1.

The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- How does the corporate tax affect investment?
- The earnings per dollar spent on the machine drop from F_K to $(1-t)F_K$, where t is the corporate tax.
- **Figure 5** illustrates the effect.

Figure 5


Cost and return per dollar of investment
$MB_1 = F_K$
$MB_2 = F_K(1-t)$
Taxes on corporations lower the marginal benefit.
B
A
MC_1=r+delta
K_2
K_1
Investment (*K*)

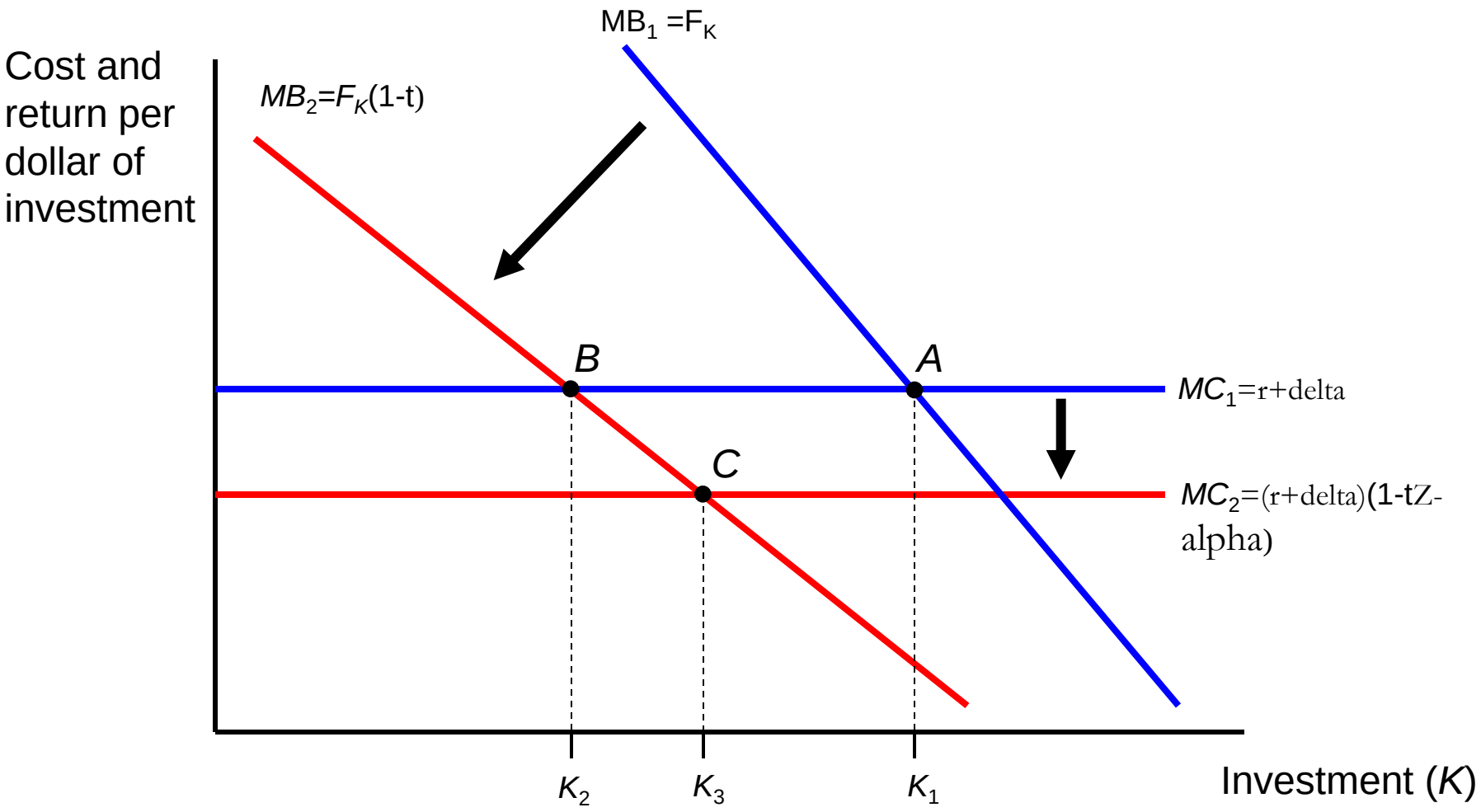
The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- In this figure, the marginal benefit has shifted downward to MB_2.
- Firms invest less when the government takes some of their return through corporate taxation. This is because the firm's after-tax actual rate of return on the investment must be large enough to meet the required rate of return, (r+delta).
- Thus, investment falls to K_2.

The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- Consider the effect of depreciation allowances and the ITC. Both of these lower the effective cost of the machine.
- Let Z denote the present discounted value of the depreciation allowances, as a fraction of the purchase price. Thus, $Z \leq 1$ (where $Z=1$ represents *expensing*). The value of these allowances are therefore tZ, and the marginal cost falls from (r+delta) to (r+delta)(1-tZ).
- An investment tax credit of k per $1 invested in the machine lowers the marginal cost further. With both policies, the marginal cost is (r+delta)(1-tZ-alpha) as shown in **Figure 6**.

Figure 6


Cost and return per dollar of investment
MB1 =FK
MB2=FK(1-t)
B
A
C
MC1=r+delta
MC2=(r+delta)(1-tZ-alpha)
K2
K3
K1
Investment (K)

The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- In this figure, the marginal cost has shifted downward to MC_2.
- The level of investment is higher than before depreciation allowances and the ITC, but remains lower than before taxation.
- Thus, investment rises from K_2 to K_3.

The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- The ***effective corporate tax rate*** is the percentage increase in the rate of pretax return to capital that is necessitated by taxation.
- It is generally measured as:

$$ETR = \frac{F_{K,after} - F_{K,before}}{F_{K,before}}$$

The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- After incorporating the corporate income tax, depreciation allowances, and the ITC, the effective tax rate becomes:

$$ETR = \frac{\left(1 - \left[\tau \times Z\right] - \alpha\right)}{\left(1 - \tau\right)} - 1$$

The consequences of the corporate tax for investment
Theoretical analysis of corporate tax and investment decisions

- For example, if the statutory corporate rate was 0.35, the present value of depreciation allowances was 0.5, and the ITC was 0.1, then the effective rate is 11.5%.
- That is, the firm must earn a pretax rate of return that is only 11.5% higher than the rate it earned before taxation in order to meet its required rate of return.

The consequences of the corporate tax for investment Policy implications

- As a result of varying the statutory tax rates, depreciation allowances, and ITCs, the effective marginal tax rate facing corporations has varied widely in recent years, from 51% in 1980 to 27% in 2003.

The impact of the 1981 and 1986 tax reforms on investment incentives

- The 1981 tax act introduced a series of new incentives to spur investment by corporate America.
  - More rapid depreciation schedules
  - Introduction of an ITC
- Fullerton (1987) found that effective tax rates on capital assets averaged 29%, but were actually ***negative*** 18% for some equipment.

The impact of the 1981 and 1986 tax reforms on investment incentives

- In addition, firms could sell tax breaks (much as tradable permits with pollution abatement).
  - Occidental Petroleum, with earnings of $700 million, had no tax liability in 1981, and in fact sold $30 million of its own tax breaks to a New York Insurance company.
- The Citizens for Tax Justice (CTJ) found that 17 companies paid no taxes from 1981 to 1983, instead receiving refunds of $1.2 billion while earning $14.9 billion in profits.

Application The impact of the 1981 and 1986 tax reforms on investment incentives

- The Tax Reform Act of 1986 made three significant changes to the tax code:
  - Lowered top rate from 46% to 34%.
  - Slowed depreciation schedules.
  - Ended ITC.
- Average effective tax rates rose from 21% to 28%, even as the statutory rate fell.

Application The impact of the 1981 and 1986 tax reforms on investment incentives

- Legal loopholes have rebounded in the late 1990s.
- Growing disparity between *book* income (income reported to owners) and *tax* income (income reported for tax purposes).
  - Ratio rose from 1.0 in 1992 to 1.63 in 1998.
  - Although it is partly due to accounting procedures, as much as half may be due to corporate tax-sheltering activities.

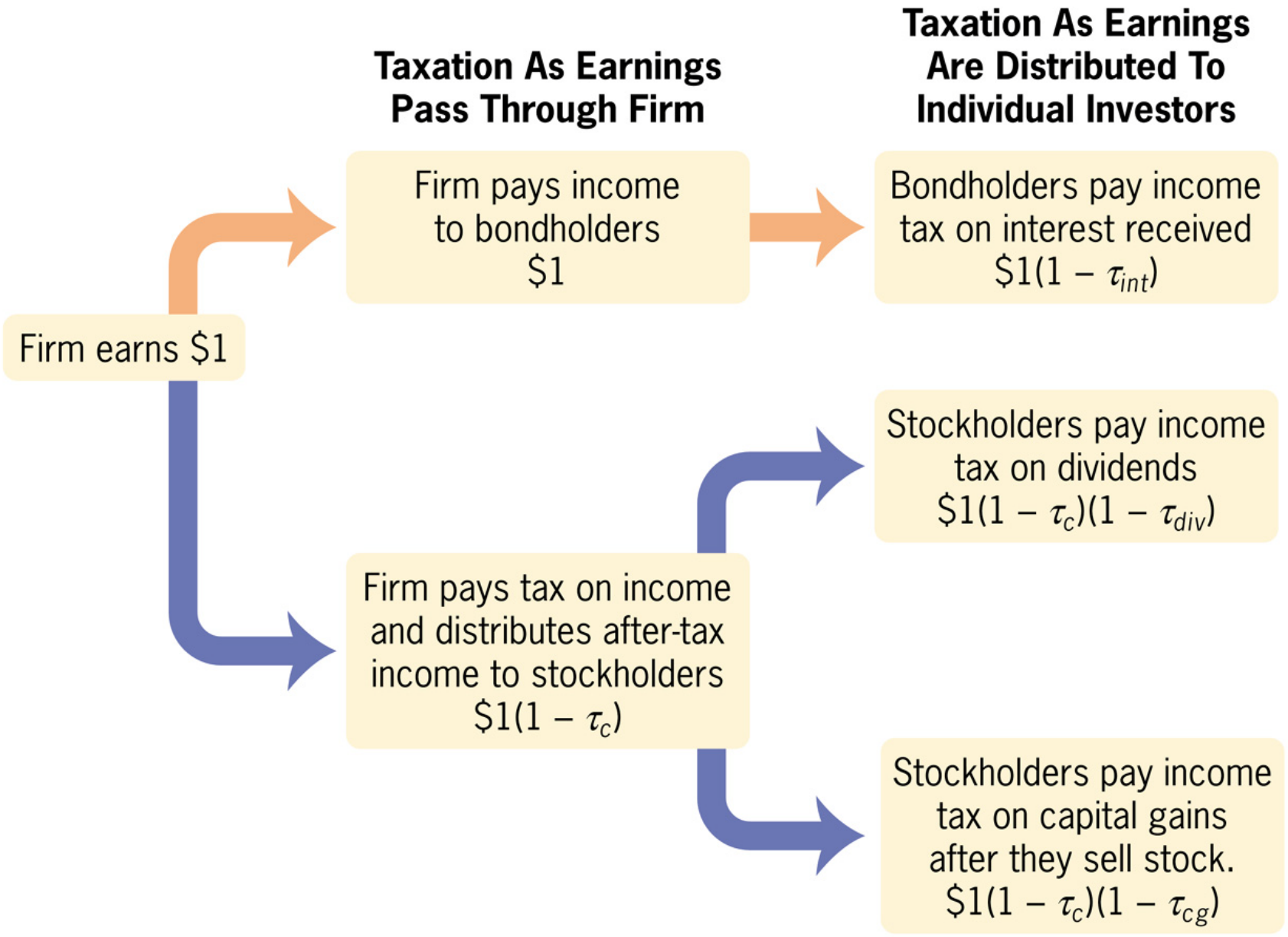
THE CONSEQUENCES OF THE CORPORATE TAX FOR FINANCING

- Another potentially important decision that may be influenced by corporate taxation is how to *finance* an investment.
- This section discusses:
  - The impact of taxes on financing
  - Reasons why firm do not simply use all debt financing
  - Reasons why firms do pay dividends, and how they should be taxed
  - Corporate tax integration

The consequences of the corporate tax for financing
The impact of taxes on financing

- Suppose a firm needs to borrow $10 for an investment that will yield $1 in corporate income each year.
- **Figure 7** illustrates several ways to do this – it decides to take on debt or issue equity, and if it issues equity, it decides whether to pay dividends or retain earnings.

Figure 7


Taxation As Earnings Pass Through Firm
Taxation As Earnings Are Distributed To Individual Investors
Firm earns $1
Firm pays income to bondholders $1
Bondholders pay income tax on interest received $1(1 – τ_{int})
Firm pays tax on income and distributes after-tax income to stockholders $1(1 – τ_c)
Stockholders pay income tax on dividends $1(1 – τ_c)(1 – τ_{div})
Stockholders pay income tax on capital gains after they sell stock. $1(1 – τ_c)(1 – τ_{cg})

The consequences of the corporate tax for financing
The impact of taxes on financing

- When firm borrows, it pays $1 in interest to bondholders.
- Firm pays no taxes on the $1 of income, because interest payments are deductible – the $1 in corporate income is offset by the $1 in interest when computing taxes.
- Bondholder pays personal income taxes, thus receiving $\$1x(1-t_{INT})$.

The consequences of the corporate tax for financing
The impact of taxes on financing

- When firm issues equity, the \$1 in corporate income it earns is ***not*** offset by a deduction.
- Thus, only $\$1x(1-t_C)$ is distributed to the shareholders.
- If the firm pays shareholders in the form of a dividend, they receive $\$1x(1-t_C)x(1-t_{DIV})$.
- If the firm reinvests the \$1, and assuming the value of the company increases by exactly \$1, then shareholders receive $\$1x(1-t_C)x(1-t_{CG})$.

The consequences of the corporate tax for financing
The impact of taxes on financing

- The *effective* capital gains tax rate is lower than the statutory rate for most investors, for reasons such as the "step-up" in basis at death.
- In addition, the statutory capital gains tax rate has historically been lower than the statutory dividend tax rate (though they are both currently equal to 15%).

The consequences of the corporate tax for financing

- These after-tax returns raise two key questions:
  - Why wouldn't the firm want to finance with all debt?
  - Why do firms pay dividends instead of capital gains (retaining earnings)?

The consequences of the corporate tax for financing Why not all debt?

- Why not all debt?
- There are three explanations, all of which rely on the distinction between debt and equity: debt requires fixed payments while equity does not.

The consequences of the corporate tax for financing Why not all debt?

- ***Bankruptcy costs***: The first explanation for use of some equity finance is the costs of bankruptcy – which imposes legal costs and psychological costs.
- A negative shock to earnings (such as a recession that lowers demand for a firm's product) may leave them unable to make that fixed payment to their creditors.
- Firms may use some equity to give themselves a "buffer zone" against bankruptcy risk. When times are bad, firms simply don't pay a dividend.

The consequences of the corporate tax for financing Why not all debt?

- ***Agency problems***: There are conflicts in the interests of equity holders and debt holders.
  - *Debt holders* get a fixed return, regardless of how well the firm does, so long as the firm does not go bankrupt.
  - *Equity holders* get a return that is tied to firm performance. There is a limit to how badly they can lose when the company does poorly, however – the initial investment.
- Consider the scenarios illustrated in **Table 1**.

In all cases, the company is worth $6 million, with different mixes of debt and riskiness of investment.

vs. Equity Conflict

	Share of financing	*Possible gain from investment*	*Possible loss from investment*	*Expected return from investment*	*Should the firm take the risk?*
Equity Holders	**$1 million**	**$3 million**	**$2 million**	**$0.5 million**	**Yes**
Debt Holders	**$5 million**	**0**	**$10 million**	**-$5 million**	**No**
Equity Holders	**$5 million**	**$3 million**	**$10 million**	**-$3.5 million**	**No**
Debt Holders	**$1 million**	**0**	**$2 million**	**-$1 million**	**No**

The consequences of the corporate tax for financing Why not all debt?

- In each case, the total firm value is $6 million, distributed between equity and debt.
- Imagine that the firm earns 10% per period, or $600 thousand.
  - In the first row, with an interest rate of 10%, the interest payment in the first row is $500 thousand per period. The remaining $100 thousand is distributed to its equity holders.
- Now imagine that, in addition to this steady flow of earnings, the firm can undertake a risky investment.

The consequences of the corporate tax for financing Why not all debt?

- The investment has a 50% chance of yielding $3 million, and a 50% chance of losing $6 million.
  - The expected return is -$1.5 million, so the firm is better off not taking the investment.
- From the *equity holders* perspective, they get the entire $3 million if the investment succeeds. Because of the "bankruptcy floor" they only lose their initial investment of $1 million, plus the stream of dividends worth another $1 million, if the investment fails.
- This is illustrated in row 1 of **Table 1**.

Table 1

y Conflict

Equity holders take on the risk, even though the expected value to the *firm* is -$1.5 million.

	financing	*investment*	*ible from vestment*	*Expected return from investment*	*Should the firm take the risk?*
Equity Holders	**$1 million**	**$3 million**	**$2 million**	**$0.5 million**	**Yes**
Debt Holders	**$5 million**	**0**	**$10 million**	**-$5 million**	**No**
Equity Holders	**$5 million**	**$3 million**	**$10 million**	**-$3.5 million**	**No**
Debt Holders	**$1 million**	**0**	**$2 million**	**-$1 million**	**No**

The consequences of the corporate tax for financing Why not all debt?

- The equity holders will vote to undertake this risky project, because the expected return for them is *positive*, even though the overall expected return is *negative*.
- The debt holders get *nothing* if the gamble succeeds, but have a 50% chance of losing their $5 million bond investment, and $5 million stream of interest payments.
- The expected value for bondholders is -$5 million, illustrated in row 2 of **Table 1**.

Table 1

The Debt vs. Equity Conflict

They don't reap the rewards if the risk works out, so their expected return is negative.

	Sha… finan…		…nt	*Expected return from investment*	*Should the firm take the risk?*
Equity Holders	**$1 m…**		**…on**	**$0.5 million**	**Yes**
Debt Holders	**$5 million**	**0**	**$10 million**	**-$5 million**	**No**
Equity Holders	**$5 million**	**$3 million**	**$10 million**	**-$3.5 million**	**No**
Debt Holders	**$1 million**	**0**	**$2 million**	**-$1 million**	**No**

The consequences of the corporate tax for financing Why not all debt?

- For a highly leveraged firm such as this one, there is a clear conflict of interest between equity and debt holders.
  - The problem arises because the equity holders make the decision about the project, yet they do not face the financial consequences.
- As the share of equity rises, this conflict of interest goes away.
- This is illustrated in rows 3 and 4, where the equity holders now own $5 million, and debt holders own $1 million.

The consequences of the corporate tax for financing Why not all debt?

- The key insight is that *as the fraction of firm financing that is debt rises, the potential for this conflict of interest grows.*
- As a result of this agency problem, lenders will charge higher interest rates on loans to firms as their share of debt financing rises.
  - These higher interest rates offset the tax advantages of debt financing.

The consequences of the corporate tax for financing Why not all debt?

- ***Quiet Life***: The agency problem also means that having a large debt burden will make managers' lives more difficult.
  - They must meet this obligation each period.
- Debt is essentially a disciplinary device on managers. As a result, they will often prefer equity financing, and may use their position of power to shift the financing burden in that direction.

The consequences of the corporate tax for financing The dividend paradox

- Why pay dividends rather than retaining earnings?
- If the firm reinvests the $1 of income, the value of the stock rises, allowing investors to take advantage of preferential capital gains tax rates.
- Yet, about one-fifth of publicly traded firms pay dividends (though the number has fallen over time).

The consequences of the corporate tax for financing The dividend paradox

- The best explanation is that investors are willing to live with tax inefficiency to take the money out of the hands of managers who suffer from the agency problem.

The consequences of the corporate tax for financing How should dividends be taxed?

- Raising the dividend tax rate can have three effects on financing decisions:
  - Reduces the use of dividends to repay equity holders.
  - Increases the incentive to use debt rather than equity financing.
  - Could reduce investment.
- This last argument, especially, has led many to argue that the double taxation of dividends lowers the rate of corporate investment.
- Yet the impact depends on the *source* of firm financing.
  - For tax-free institutions, such as pension funds, the dividend tax will have little effect on investment.
  - For firms who finance projects out of cash flow, investment decisions will not much depend on the dividends tax.

Application

The 2003 dividend tax cut

- An interesting application is the 2003 dividend tax cut.
  - It lowered the tax on dividends (and capital gains) to 15%; previously the tax had been as high as 38.6%.
- Proponents argued it would both stimulate the economy and end the unfair practice of double-taxation.
- Opponents argued that reducing the taxes would increase the deficit and make the tax code less progressive.

The consequences of the corporate tax for financing Corporate tax integration

- Even with recent legislation, the question remains: Why tax corporate income differently depending on how it is returned to shareholders?
- ***Corporate tax integration*** is the removal of the corporate tax in order to tax corporate income at the individual (shareholder) level.
  - A typical approach would be to attribute earnings of the corporation to its shareholders, regardless of how it was paid out.
  - This removes tax favoritism, and removes distortion in whether to incorporate or not. These efficiency gains would have to weighed against the government revenue losses and the reductions in vertical equity in the tax system.

TREATMENT OF THE INTERNATIONAL CORPORATE INCOME

- The world product market is increasingly integrated. There are a number of reasons that firms in the U.S. would want to produce in other countries.
- ***Multinational firms*** are firms that operate in multiple countries.
  - ***Subsidiaries*** are the production arms of a corporation that are located in other nations.
- In addition to lower production costs and sales advantages, the corporate tax structure may play a role in global production decisions.

Treatment of the international corporate income How to tax international income?

- There are two approaches to taxing corporate income earned abroad:
  - A ***territorial*** tax system is one in which corporations earning income abroad pay tax only to the government of the country in which the income is earned.
  - A ***global*** tax system(world-wide tax system) is one in which corporations are taxed by their home countries on their income regardless of where it is earned.
    - About half of OECD countries, including the U.S., use this global approach.

Treatment of the international corporate income How to tax international income?

- Although taxes are paid to the U.S., firms can claim a credit for taxes paid abroad.
  - A ***foreign tax credit*** is where a U.S.-based multinational corporation may claim a credit against their U.S. taxes for any tax payments made to foreign governments.
- In principle, firms pay the same tax rate regardless of where they locate.
- In practice, this is not the case because of foreign dividend repatriation and transfer pricing.
- The amount of credit is limited

FDI and Tax

- Why is the amount of credit is limited
- If full credit is granted, then foreign government has an incentive to set their tax so high.
- If the full credit is allowed, then it does not affect the investment to foreign country.
- Essentially, under full credit, the tax revenue is transferred from home to foreign.

Treatment of the international corporate income How to tax international income?

- The first advantage of foreign income is that it is only taxed when the income is *returned* from the foreign subsidiary to the U.S. parent company.
  - ***Repatriation*** is the return of income from a foreign country to a corporation's home country.
- For a subsidiary in a low-tax country, this offers a strong incentive to defer repatriation. This deferral lowers the effective rate of corporate tax.

Treatment of the international corporate income How to tax international income?

- The second advantage of a multinational operation is that when inputs are used from many nations, it is hard to attribute the profits earned to any particular nation.
  - ***Transfer prices*** are an amount that one subsidiary of a corporation reimburses another subsidiary of the same corporation for goods transferred between the two.
- The U.S. and other OECD countries require transactions between a firm and its foreign subsidiaries be at "arm's length" – as if two separate, unrelated firms had negotiated the price. In practice, this is difficult to enforce.

Tax Incidence: Who pay the tax on investment in the international economy

- Consider a small open economy of country A.
- For this country, there is a foreign international capital market in country B, say US.
- Any international investor can invest in this market and get the rate of return r*. Market return in NY in the US

Tax incidence

- Now consider an investor. An investor has two choice. To invest in country A or invest in NY stock exchange market.
- Assume that the country impose the source-based (territorial) capital income tax.
- This implies that any investor who invest in country A need to pay this capital income tax regardless of the nationality of investors.

Tax Incidence

- Now, the following is the question.
- In this case, who is paying the burden of this capital income tax used in country A?
- Investors in country A?
- Investors in country B?
- Or anybody else?
- What does the standard economy analysis show? (Please see the blackboard)