
Taxing Corporate Income

This chapter and the following two are concerned with the taxation of income derived from business profits. Business activity comes in many forms, ranging from the operations of huge international corporations to those of a self-employed trader. This diversity presents a major challenge for the design of business tax systems. In most developed countries, the profits of incorporated businesses (companies) are taxed under a separate corporate income tax—for example, corporation tax in the UK. Dividends paid by companies to their owners, and capital gains made by shareholders on the sale of company shares, may also be taxed at the personal level. The profits of unincorporated businesses and the income of the self-employed are also taxed under the personal income tax. One of the challenges is to design a system that does not result in unwarranted distortions to the choice of legal form for small business activities. At the other end of the spectrum, multinational companies may have interrelated operations in many different countries, and another important challenge is to determine how their taxable profits are allocated between different national jurisdictions. Perhaps the most important developments affecting business taxation since the Meade Report in 1978 have been the growth of multinational businesses and cross-border ownership of companies.

These developments have placed increasing strain on international elements of company tax systems. Multinational firms can relocate both real activities and taxable profits to countries that offer more favourable corporate tax regimes. This increase in the international mobility of the corporate tax base has resulted in a proliferation of complex anti-avoidance legislation, particularly in high-tax countries, and put downward pressure on

corporate tax rates. The UK corporation tax rate has fallen from 52% in 1982–83 to 28% in 2010–11, with further reductions to 23% by 2014–15 announced in the Budget of March 2011. Figure 17.1 illustrates that corporate income tax rates have fallen in other major economies over the same period, with Ireland having a particularly low rate of 12.5%. There has not been the same downward trend in revenues from corporate income taxes, as illustrated in Figure 17.2. One reason is that cuts in the corporate tax rate have often been accompanied by reductions in tax allowances or other extensions to the corporate tax base, in a pattern of rate-cutting, base-broadening reforms that was initiated by the UK in 1984 and the US in 1986.

This chapter considers the rationale for having a separate tax on company profits, and the properties of alternative corporate tax bases. Chapter 18 considers how the tax base should be divided between different countries, and the influence of ‘tax competition’ between governments on the corporate tax rate. Chapter 19 focuses on how we should tax income derived from unincorporated businesses in relation to the taxation of company profits. This requires consideration of dividend taxation and capital gains taxes on company shares, as well as corporate income tax paid by companies and personal income tax paid by self-employed individuals and proprietors or partners of unincorporated business organizations.

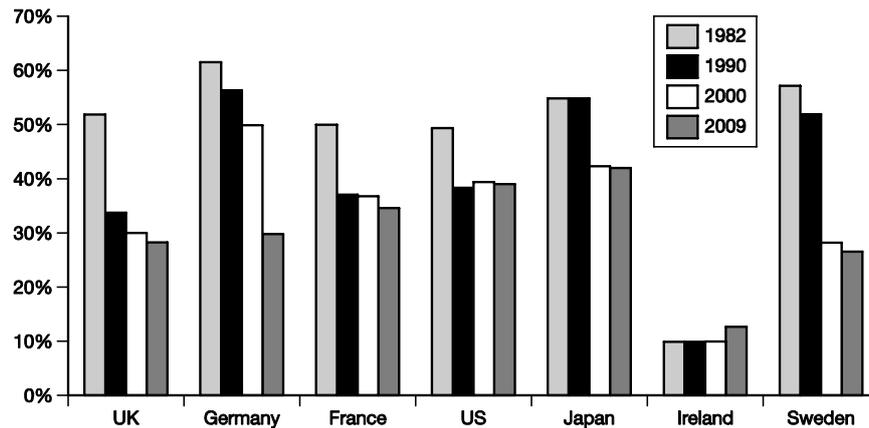


Figure 17.1. Corporate tax rates in selected years and countries

Notes: Tax rates include representative state or local corporate income taxes, where appropriate. The 10% rate in Ireland before 2003 did not apply to all sectors.

Source: Loretz, 2008. We thank Simon Loretz for providing figures for 2009.

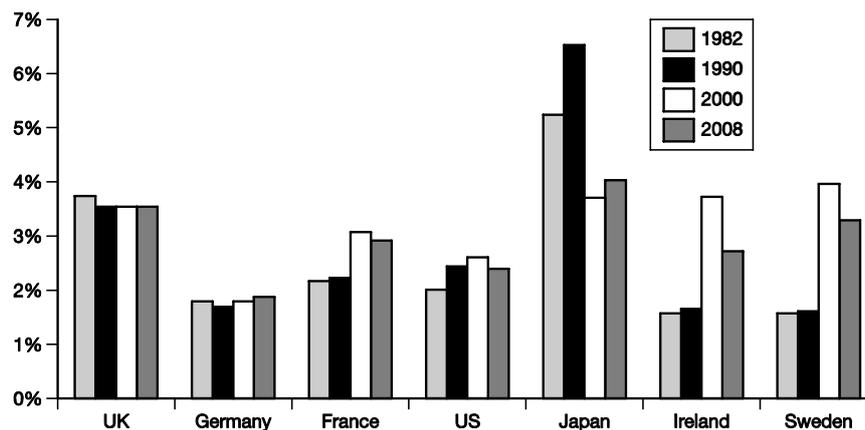


Figure 17.2. Taxes on corporate income as a percentage of GDP in selected years and countries

Source: OECD Revenue Statistics.

17.1. WHY TAX COMPANIES?

Corporations provide a convenient contractual arrangement that allows groups of individuals to own assets through a separate legal entity offering the benefit of limited liability. However, neither separate legal identity nor limited liability provides a rationale for a tax on company profits, since the terms and conditions under which creditors are willing to lend to companies will adjust to reflect this legal protection.

Perhaps the most important point to keep in mind when considering company taxation is that it is not meaningful to think about the effects of taxes on companies separately from the effects of those taxes on the individuals associated with companies. This may include not only the individuals who own companies, but also the individuals who supply goods and services to companies, including their employees, and the individuals who purchase goods and services from companies. While a successful corporate sector may be vital for the welfare of many people, we are not directly concerned about the welfare of companies. Rather, we care about the

impact of company taxes on people whose living standards may be affected, as either shareholders, workers, suppliers, or customers.

We are thus interested in whether company taxes reduce the incomes of shareholders, through lower post-tax profits and dividends; or the incomes of workers, through lower real wages; or the real incomes of consumers, as a result of higher prices. Economists ask whether the 'effective incidence' of a tax on company profits is 'shifted' onto employees or customers. This will depend on the form of the corporate tax, the nature of the economy in which it is levied, and the choices open to the firms on which it is imposed. Different views about the appropriate form and level of company taxation tend to be shaped by different views about the extent to which it is borne by shareholders, workers, or consumers, particularly in open economies where much activity is conducted by multinational firms. This will also influence how corporate taxes impact on the behaviour of these stakeholders.

Why then do we impose a separate tax on company profits? Two important considerations are administrative convenience and the 'backstop' role that corporate taxation plays in the implementation of the personal income tax.

However we choose to measure company profits for tax purposes, it would in theory be possible to allocate a fraction of those taxable profits to each shareholder in proportion to his or her share in the ownership of the company, and to tax this share of the company profits under the personal income tax. Even with modern information technology, this would be administratively cumbersome, particularly in the context of large companies with thousands of small shareholders. Some shareholders may also find it difficult to pay tax on their imputed share of the underlying company profits, particularly when the company retains those profits to finance its operations and the shares are not easily traded on a liquid market. With significant ownership of UK companies by foreign shareholders, and significant ownership of foreign companies by UK residents, this would also have important implications for where company profits are taxed. Implementation would require substantially more cooperation and exchange of information between national tax administrations than the current practice of taxing the profits made by companies operating in a jurisdiction primarily in that jurisdiction, at the corporate level. Finally, the ownership of company shares by financial intermediaries such as insurance companies

and pension funds, representing contingent contractual arrangements such as life insurance and future pension rights, may defy any current attribution of corporate profits to beneficial individuals.

An appropriate form of corporate taxation may also play an integral role in the effective administration of the personal direct tax system. There are two important aspects of this, relating to the personal taxation of income from savings and to the personal taxation of labour income.

In one sense, a company is a repository for the unconsumed savings of individuals. The simple mantra that we must have a corporate income tax because we have a personal income tax is weakened by the fact that in many countries, including the UK, we choose not to tax, or not to fully tax, the return on substantial components of personal savings, such as owner-occupied housing, pension plans, or assets held in tax-free accounts such as UK Individual Savings Accounts (ISAs). We do choose to tax personal income from substantial direct holdings of company shares, in the form of dividends and capital gains, and this would be undermined if we did not also tax corporate profits—in that case, owners of small companies could, for example, defer tax payments for long periods simply by retaining profits in the company. But this begs the question of why we choose to tax different forms of personal savings in radically different ways. More generally, the form and structure of the corporate income tax should be consistent with the form and structure of the personal income tax, and with policy choices for the taxation of savings in particular. The system as a whole should not present individuals with glaring opportunities to avoid taxation of their income from savings simply by holding their wealth in corporate form, nor should it penalize individuals who choose to save and invest through direct holdings of company shares.

For owner-managers of small companies, we also have to consider the possibility that labour income can be disguised as capital income and appear in the form of company profits, dividends, and capital gains. A significant difference between the individual's tax rate on labour income and the overall tax rate that applies to dividend income paid out of company profits, for example, then presents an opportunity for tax avoidance. We discuss this further in Chapter 19, but note that this is a potentially serious drawback to 'dual' income tax systems, which combine a progressive rate structure on labour income with a flat tax rate on capital income. More generally,

omitting corporate income from taxation could create strong incentives for individuals to avoid tax by conducting activities in corporate form.

In an international context, taxing companies may allow tax to be imposed on foreign owners of those companies. Personal income taxes tend to operate on a 'residence-country' basis, with resident individuals liable to tax on their worldwide income, often with credit provided for taxes paid to foreign governments on income earned abroad. In contrast, corporate income taxes generally operate on a 'source-country' basis, taxing the profits of all firms operating in the domestic economy, regardless of their ownership.¹ This opportunity to tax non-resident owners may look attractive to governments and residents alike, although it also runs the risk of deterring some inward investment.

Another factor may be the perception that corporate taxes fall on anonymous companies, or at least on wealthy owners of those companies. In an open economy setting, there are good reasons for thinking that much of the burden of a (source-based) tax on corporate income will be shifted onto domestic workers in the form of lower wages and that workers would be better off if their wages or consumption were taxed directly. (We discuss these arguments further in Chapter 18.) However, this may be hard to sell to domestic voters, and, to this extent, governments may be attracted to a separate tax on corporate profits for similar reasons that they are attracted to separate social security contributions for employers—because many voters perceive these to be taxes that fall on someone else.

All OECD countries and most developing countries operate a form of corporate income tax. While corporate tax rates have fallen over the last quarter-century, most countries appear reluctant to forgo their share of this source-based taxation. Moreover, each country has an interest in the maintenance of source-based corporate taxes by other countries, as this reduces the tax advantage for its residents of investing abroad rather than at home.

In contrast, there are substantial differences across countries in the relationship between corporate and personal income taxes—that is, the

¹ Corporate income taxes do not necessarily operate on a pure source-country basis. For example, the taxation of foreign-source dividends under credit systems, and the application of Controlled Foreign Company rules, may introduce elements of taxation on the basis of corporate residence. These issues are discussed further in Chapter 18.

extent to which tax on company profits paid by the firm reduces tax charged on company dividends received by shareholders. Some countries, including Ireland and the Netherlands, have a 'classical system' in which dividend income is taxed at the shareholder's full marginal personal tax rate. Other countries, including Australia, have an 'imputation system', in which there is an explicit tax credit against personal tax on dividend income in recognition of tax paid on the underlying profits at the corporate level. Imputation systems commonly treat dividends received from foreign corporations and domestic corporations differently and/or treat dividends paid to foreign shareholders and domestic shareholders differently. Within the EU, the European Court of Justice has ruled such systems in breach of treaty obligations, leading to their withdrawal. Many EU countries, including the UK and Germany, now tax dividend income at lower personal tax rates than other sources of income. In this respect, the taxation of company dividends has come to resemble the taxation of capital gains on company shares, where most countries have made no explicit recognition of corporate tax on the underlying company profits but many countries tax capital gains at preferential rates.

17.2. THE STANDARD CORPORATE INCOME TAX BASE

The corporate tax base in almost all OECD countries corresponds to a measure of company profits net of allowances for interest payments and presumed depreciation costs. Two important questions are how this standard corporate income tax base affects the level of corporate investment, and how this investment is financed.

At zero inflation, and for an asset whose true decline in value over its lifetime matches the tax depreciation schedule, this standard corporate income tax base does not affect the required rate of return, or 'cost of capital', for corporate investments that are financed by borrowing. In essence, if the company can borrow at a real interest rate of 3% to finance a safe investment, the investment need only generate a net return of 3% to be viable. In contrast, the standard corporate income tax base raises the required rate of return for a similar investment that is financed by retained

profits ('internal equity') or by issuing new shares ('external equity'). Shareholders require a positive rate of return on the use of their funds by the company, to compensate for the income they could have earned by investing instead in an interest-bearing asset. But unlike the interest cost of debt finance, which appears as an explicit charge in company accounts, this 'opportunity cost' of equity finance is not deductible from taxable profits. Consequently, for an equivalent equity-financed investment to be viable, the project must generate a higher pre-tax return to provide the company and its shareholders a net return of, say, 3%, after payment of corporate income tax. This implies that the standard corporate tax base favours debt rather than equity finance, and tends to discourage corporate investment to the extent that companies rely on equity finance.

These results are illustrated in Table 17.1. We consider a simple investment project undertaken by a firm that involves an outlay of £1,000 in year 1 to acquire an asset that generates a guaranteed income of £30 in year 2.² There is no inflation, and the asset purchased can also be sold for £1,000 in year 2, so there is no depreciation. Initially, we suppose there is no corporate income tax, and the risk-free interest rate is 3% per annum.³

If the firm borrows £1,000 at 3% to finance this project, the return of 3% just covers the interest payment of £30 in year 2, and the proceeds from selling the asset just cover repayment of the sum borrowed. Shareholders give up nothing in year 1 to finance this investment, and get nothing in year 2 in return. They should be indifferent as to whether the firm undertakes the investment or not. In this context, a project that just earns the required rate of return of 3% is referred to as a 'marginal' investment. If the firm could generate income in year 2 higher than the interest payment of £30, its owners would be better off if it undertakes the investment. Profits in excess of the required rate of return are referred to as 'supernormal' profits or 'economic

² This income can be thought of as sales of additional goods and services produced using the asset, minus additional current costs (wages, costs of energy, and costs of raw materials) that are incurred.

³ 3% is close to the long-run average real interest rate on ten-year index-linked UK government bonds since they were introduced in 1984, although this measure of the *ex ante* real interest rate has been rather lower in recent years. See e.g. Joyce, Sorensen, and Weeken (2008).

Table 17.1. Effects of the corporate income tax on a simple investment

	Debt finance		Equity finance	
	No tax	With tax	No tax	With tax
Investment in year 1	-1,000	-1,000	-1,000	-1,000
Borrowing in year 1	1,000	1,000	0	0
Income in year 2	30	30	30	30
Interest payment in year 2	-30	-30	0	0
Asset sale in year 2	1,000	1,000	1,000	1,000
Debt repayment in year 2	-1,000	-1,000	0	0
Proceeds in year 2 before tax	0	0	1,030	1,030
Rate of return before tax	n/a	n/a	3%	3%
Corporate tax payment @ 25% in year 2	0	0	0	7.5
Proceeds in year 2 after tax	0	0	1,030	1,022.5
Rate of return after tax	n/a	n/a	3%	2.25%

rents'. Typically, making such profits would require the firm to possess some scarce resource, knowledge, or ability that is not easily replicated by other firms.

Nothing changes in this example if the firm is subject to a standard corporate income tax, provided the tax code correctly recognizes that this kind of asset does not depreciate in value, and so provides no deduction for the cost of depreciation. The income of £30 is taxable in year 2, but the interest payment of £30 is deductible, leaving a tax base of zero and no corporate tax to be paid. No tax is levied on marginal investments, and consequently the required rate of return is unchanged. Tax would be paid on any supernormal profits. For example, if the firm could earn income in year 2 of £40, the tax base would be £10. However, for any tax rate less than 100%, shareholders would still be better off if the firm undertakes the investment. For debt-financed investments, the standard corporate income tax with depreciation allowances equal to true depreciation thus raises revenue by taxing economic rents.

The situation is quite different for equity-financed investments. If the firm did not undertake this expenditure in year 1, it could return an additional

£1,000 to its shareholders. This could be used to earn a certain return of £30 next year, giving shareholders a total of £1,030 in year 2. In the absence of the corporate income tax, if the firm uses its shareholders' funds to purchase the asset, it can also return £1,030 to its shareholders in year 2. Again shareholders should be indifferent as to whether the firm undertakes the investment project or not. But in the presence of the corporate income tax, this is no longer the case. With no interest payments to deduct, the firm now has taxable profits of £30 in year 2. If, for example, the corporate income tax rate is 25%, the firm will have to pay £7.50 in tax, leaving shareholders with a post-tax rate of return of only 2.25%. If shareholders can earn 3% by investing in a safe, untaxed asset outside the corporate sector, they will now be worse off if a taxed company invests in a project with a pre-tax return of 3%.⁴

In this example, shareholders should only be indifferent between the firm investing or not investing if the firm can generate a guaranteed income of £40 before tax, giving post-tax income of £30 and a post-tax rate of return of 3%. The corporate income tax at 25% here raises the cost of capital for equity-financed corporate investment from 3% to 4%. Some corporate investment that would otherwise be viable is likely to be deterred by a standard corporate income tax.

Two implications follow from these properties of the standard corporate income tax. All else equal, firms will be induced to use more debt finance and less equity finance. In reality, the future returns on any investment project tend to be uncertain, and the risk that lenders will not be repaid in full tends to increase as firms take on more debt relative to the value of their assets. Borrowing costs are likely to rise as firms become more indebted, and

⁴ Note the assumption here that shareholders are not taxed at the personal level if they hold their wealth in the safe, interest-bearing asset. We are also abstracting here from personal taxation of dividend income and capital gains. Formally, we can think of this example applying where the shareholder is a pension fund (or, more accurately, an individual who saves through a tax-exempt pension fund), or an individual who saves in a tax-exempt account such as a UK Individual Savings Account (ISA). More generally, with different shareholders subject to different marginal tax rates, it is much harder to pin down the effects of personal income taxes on the required rate of return from corporate investments. Alternatively, we could think of 3% as being the safe rate of return available to shareholders in our example after personal tax on their savings income. In either case, the example illustrates the effect of the corporate income tax in isolation, holding constant the personal tax treatment of shareholders' savings income.

in practice we observe firms using a mix of debt and equity finance. Still, it is unclear why we should want the design of the corporate income tax to encourage companies to have more fragile balance sheets than they would otherwise choose.⁵ As a result, more firms are likely to default in an economic downturn than would otherwise be the case. This imposes real costs, notably when firm-specific assets cannot be redeployed easily to other uses.

The second implication is that the corporate income tax raises the cost of capital and results in lower corporate investment, given that companies continue to use equity finance.⁶ The key reason is that the normal return on equity-financed corporate investments is taxed under the standard corporate income tax base. We discuss the merits of this in Section 17.4 and, in the open economy context, in Chapter 18.

There are other problems with the standard corporate income tax base. Firms invest in many different assets with different useful lives and depreciation rates. It is not administratively feasible to specify a precise depreciation schedule for every asset, even if these were known with any certainty. Accordingly, corporate income tax rules typically specify depreciation schedules that can be charged for broad classes of assets, or specify maximum rates of depreciation that can be charged for broad classes of assets.⁷ As a result, investment in some assets will be favoured (generating tax deductions for depreciation that are more generous than those implied by the fall in the value of the asset) and investment in other assets will be disadvantaged (being written off too slowly for tax purposes). Such disparities between the depreciation allowed by the tax code and true

⁵ Historically, one might have argued that the tax bias in favour of debt in the corporate income tax could be offset by a tax bias against debt in the personal income tax. At least for large corporations in open economies, this kind of argument now has little merit, as the growth in share-ownership by tax-exempt institutions and foreign shareholders has weakened the link between domestic personal income taxes and corporate financial behaviour.

⁶ Empirical evidence suggests that the cost of capital is an important influence on corporate investment, although estimates of the magnitude of this effect vary considerably. See Hassett and Hubbard (2002) for a review of this literature and Bond and Xing (2010) for recent cross-country evidence.

⁷ The latter case generally applies when the tax code allows commercial depreciation charges to be deducted for tax purposes. Since firms then benefit in present-value terms from charging depreciation at a faster rate in their commercial accounts, maximum rates are needed to limit the extent to which this can be exploited.

economic depreciation will distort the asset composition of investment. While there may be reasons for designing a tax system that increases the required rate of return for all assets, there is little evidence of commensurate differences in social returns that would justify discouraging investment in some types of assets more than others in this way.⁸

Furthermore, tax depreciation schedules generally operate with reference to the historic cost for which assets were purchased, implying that the real value of tax depreciation allowances will be eroded by inflation. Even quite modest annual inflation rates can have a significant effect in reducing the real value of these tax allowances below the actual depreciation costs borne by firms, particularly for assets with long lifetimes.

For equity-financed investment, this can imply a substantial effect of inflation in raising the cost of capital. For debt-financed investment, this effect is mitigated by another feature of unindexed corporate income tax bases, which is that nominal rather than real interest payments on outstanding debt can be deducted against taxable profits. *Per se*, this reduces the real after-tax cost of borrowing. Higher inflation may have other effects—for example, raising the cost of holding inventories that appreciate in nominal value, and increasing the taxation of real capital gains on asset sales at both the firm level and the shareholder level. Even if we thought there might be good reasons why the corporate income tax should encourage firms to use debt and discourage firms from investing, it is unclear why we would want these effects to vary with the rate of inflation.

These effects of inflation could, in principle, be avoided by indexing the corporate tax base. Depreciation allowances could be specified in relation to inflation-adjusted values of assets, rather than their historic purchase prices, and interest deductions could be restricted to real rather than nominal interest payments.⁹ However, no OECD country has yet adopted a fully

⁸ Some types of investment are granted more favourable tax treatments as a result of considered policy choices that may be justified by externalities or market failures. Examples include expenditures on research and development, and on energy-saving technologies, which may e.g. be expensed immediately or benefit from further tax credits.

⁹ Similarly, taxable capital gains when assets are sold could be calculated with reference to an indexed base, and adjustments could be made for the effect of inflation on the nominal value of inventories.

inflation-adjusted corporate income tax base, perhaps reflecting the additional complexity involved.

These are by no means the only problems involved in computing taxable profits under a standard corporate income tax. Because there is no uniform definition of the corporate tax base—reflecting the absence of any common definition of ‘profits’ for tax purposes—many detailed aspects of the corporate tax base differ across countries, even though they aim to tax broadly the same thing. Multinational firms may in some cases be able to benefit from these differences, obtaining the most generous tax allowances on offer, or even deducting the same costs against tax in more than one jurisdiction—although, conversely, in other cases they may find that the same income is taxed more than once in different countries. We discuss these international issues further in Chapter 18.

To summarize, the standard corporate income tax is likely to distort company behaviour in several ways that may be undesirable. Borrowing is favoured over retained profits or new equity as a source of finance for corporate investment, leaving firms more exposed to the risk of bankruptcy. This tax bias in favour of debt increases with the rate of inflation. The tax treatment of depreciation favours investment in particular assets where tax allowances are relatively generous compared with true depreciation costs. Overall, the corporate income tax increases the cost of capital and reduces investment. This principally reflects the inclusion of the normal return on equity-financed investment in the standard corporate income tax base.

17.3. ALTERNATIVE CORPORATE TAX BASES

Several proposals have been made to reform or replace the standard corporate income tax base, in ways that reduce or remove some or all of the distortions to corporate behaviour that we highlighted in the previous section.

17.3.1. Cash-Flow Taxes

A radical proposal, which was developed in the Meade Report, would replace a tax based on a measure of company profits or income by a tax based on a measure of net cash flow. One version of this, known as the R-base, would abolish deductions for both depreciation and interest payments, and replace them with a deduction for investment expenditure when it is incurred.¹⁰ Investment is then treated like any other current cost and, conversely, sales of capital assets would be treated like any other cash inflow.

In the simple example we considered in Table 17.1, at a tax rate of 25%, the purchase of an asset for £1,000 in year 1 would then require the firm to finance an outlay of only £750.¹¹ In year 2, both the income of £30 and the revenue of £1,000 from selling the asset are taxed at 25%, leaving the firm with 75% of the net cash flow, or £772.50. In effect, this cash-flow tax contributes 25% of the investment outlay in exchange for 25% of the proceeds. Regardless of whether it is financed by equity or debt, the original project is simply scaled down from the perspective of the investor. In the case of equity finance, shareholders make a return of £22.50 on their investment of £750, matching the 3% return we have assumed they could earn elsewhere. For debt finance, this just covers the interest cost. Moreover, if the pre-tax rate of return on the project exceeds 3%, this will also be the case for the post-tax rate of return.

The R-base cash-flow tax eliminates the current tax bias in favour of debt by treating debt- and equity-financed investments identically. Marginal investments, which just earn the minimum required rate of return in the absence of tax, remain marginal investments in the presence of the tax. Consequently, the tax has no effect on the cost of capital, or minimum required pre-tax rate of return. In effect, this approach taxes only economic rents and not the normal return on corporate investments. This applies to all

¹⁰ This up-front allowance for investment expenditure is sometimes called a 100% first-year allowance, or 'free depreciation'. The Annual Investment Allowance in the UK provides this expensing treatment for a limited amount of investment in plant and machinery.

¹¹ This assumes either that the firm has other net cash flows of at least £1,000, so that the investment allowance generates a reduced tax payment of £250 in year 1, or that the 'tax loss' of -£1,000 generates a rebate of £250 (i.e. there is a symmetric treatment of taxable profits and losses). Similar outcomes can be achieved if the 'tax loss' is carried forward to set against positive net cash flows in later years, with an appropriate interest mark-up.

types of assets, regardless of their useful lifetimes or depreciation profiles. Inflation has no effect on these properties, as the tax base in each period depends only on nominal cash flows.

The R-base version of the cash-flow tax makes a distinction between cash flows that are associated with the firm's 'real' business operations (such as revenues from the sale of goods and services, and payments for labour and other inputs used to produce these goods and services, including purchases and sales of capital) and cash flows that are associated with financing those operations (including borrowing and repayments of interest and principal to lenders, and injections of equity and payments of dividends to shareholders). Within these cash flows associated with financing, no distinction is made between debt finance and equity finance—neither payments of interest to lenders nor payments of dividends to shareholders would be tax deductible. The R-base version of the cash-flow tax is closely related to current versions of VATs that exempt financial transactions from the tax base.¹² This presents a problem for the taxation of banks and other financial intermediaries, which make a high proportion of their profits from interest spreads—charging higher interest rates to borrowers than they pay to depositors—which would not be taxed under the R-base tax. The distinction between debt and equity also plays an important role in the current operation of corporate income taxes around the world. While maintaining this distinction is administratively costly, requiring legislation to determine whether payments made by firms to financiers on 'hybrid securities' can be deducted against the corporate income tax or not, the abolition of interest deductibility could also present difficulties for a single country that introduced the R-base cash-flow tax in isolation.¹³

A variant of the cash-flow tax that addresses these issues is the R+F-base. Under the R+F-base, new borrowing would be treated as a taxable cash

¹² Value added taxes are discussed in Chapters 6–9. The connection follows from noting that value added can be expressed as net cash flow plus labour costs.

¹³ For example, there may be uncertainty about whether payments of a reformed corporation tax along these lines by subsidiaries of international companies would continue to be creditable against domestic corporate income taxes in countries that use the credit method of international double tax relief (see Section 18.2 in the following chapter). Experience with implementing taxes very like the R-base cash-flow tax has been mainly limited to specific taxes on natural resources such as oil and gas, where high economic rents are expected and where operations in specific locations such as the North Sea can be 'ring-fenced'.

inflow, while repayments of both interest and principal would be treated as deductible cash outflows. This requires a distinction to be made between cash flows associated with debt finance and equity finance. Deductibility of nominal interest payments against the corporate tax base is then preserved, in common with corporate income taxes in other countries. Nominal interest receipts from lending would continue to be taxable, so that profits made by banks from interest spreads would still be taxed, in so far as banks earn more than the minimum required rate of return on their capital. In principle, it would appear possible, if somewhat cumbersome, to tax new borrowing and allow repayments of principal to be deductible. However, we have no experience of attempting to do this in practice. Implementation of the R+F-base cash-flow tax would raise similar issues to some of the proposals for applying VAT to financial services, which we discussed in Chapter 8.

17.3.2. An Allowance for Corporate Equity (ACE)

A different approach to equalizing the tax treatment of debt and equity finance was proposed by the IFS Capital Taxes Group (1991). The basic idea is to provide explicit tax relief for the imputed opportunity cost of using shareholders' funds to finance the operations of the company. This 'allowance for corporate equity (ACE)' can be thought of in two ways: either as a counterpart to allowing the interest cost of debt finance to be tax deductible, or as a series of deferred tax allowances which compensate for the absence of the up-front 100% allowance for equity-financed investment expenditure provided by the cash-flow taxes. These two interpretations are broadly equivalent in examples with perfect certainty about future returns, while the second interpretation turns out to be more appropriate in the presence of risk and uncertainty. The effect is again to remove the normal return on equity-financed investment from the corporate tax base.¹⁴

At first sight, it may seem that simply allowing a deduction for the opportunity cost of equity finance would leave the issues of tax depreciation schedules and inflation unresolved. In fact, by relating the measure of the

¹⁴ Versions of this tax base were used in Croatia between 1994 and 2001, and introduced in Belgium in 2008.

equity base used to compute this tax allowance explicitly to the depreciation schedule used for tax purposes, this sensitivity can be avoided.

Broadly speaking, the stock of shareholders' funds used to compute the ACE allowance evolves according to:

$$\begin{aligned} \text{Closing stock} = & \text{Opening stock} + \text{Equity issued} - \text{Equity (re-)purchased} \\ & + \text{Retained profits as computed for tax purposes.} \end{aligned}$$

The ACE allowance for the current period is then obtained as an imputed return on the closing stock of shareholders' funds at the end of the previous period (i.e. multiplying this stock by a specified rate of interest). Here, equity (re-)purchased includes the acquisition of equity or additional equity in subsidiaries that the company acquires or whose expansion the company finances, as well as any share buy-backs. Retained profits as computed for tax purposes correspond to taxable profits (net of the ACE allowance) minus tax paid to the government and minus dividends paid to shareholders.

Now compare the sequence of depreciation allowances and ACE allowances in the case of an asset for which the tax depreciation schedule is 'right' with those for an asset where the depreciation rate allowed for tax purposes is 'too low'. For such an asset, where the tax schedule initially underestimates the true cost of depreciation, the depreciation allowances will be 'too low' in the early years of the asset's life, resulting in taxable profits and tax payments that are initially 'too high'. However, retained profits as computed for tax purposes will then also be higher than they would otherwise be, resulting in a higher stock of shareholders' funds used to compute the ACE allowance in future years. As a result, future ACE allowances will be higher, and future tax payments will be lower.¹⁵ These two effects can be shown to offset each other precisely in present-value terms, so that the present value of the stream of tax payments under the ACE tax base does not depend on the details of the depreciation schedule used.¹⁶

The ACE tax base could be indexed to deal with inflation, but this is not required. The intuition here is that the same deduction for the cost of equity finance can be computed either by indexing the equity base in line with

¹⁵ The converse applies for assets where the tax depreciation schedule over-depreciates the asset relative to true economic depreciation.

¹⁶ This useful property of the ACE tax base was demonstrated in IFS Capital Taxes Group (1991), building on earlier work by Boadway and Bruce (1984).

inflation over the previous year and then computing the opportunity cost using a real interest rate; or more simply by not inflation-adjusting the equity base, but computing the opportunity cost using a nominal interest rate. Provided the ACE allowance is calculated by applying a nominal interest rate to the unindexed equity base, allowing nominal interest payments to also be deductible then provides the appropriate tax relief for the cost of debt finance in the presence of inflation.¹⁷

These properties of the ACE tax base depend on using the appropriate interest rate to compute the ACE allowance. Given that future returns on investment projects may be highly uncertain and shareholders are likely to be risk averse, this may appear to be a formidable problem. Generally, shareholders will not be willing to invest in risky projects whose expected rate of return is no higher than the interest rate they can earn on safe assets. The gap between the expected rate of return they require and the risk-free interest rate is known as the risk premium component of the required (expected) rate of return. This is likely to vary widely across different investment projects, and no single rate would be appropriate for firms that invest in many different assets. Fortunately, under quite general assumptions about the way in which risky assets are valued by investors, this information is not needed to implement the ACE corporation tax, and the appropriate rate to compute the ACE allowance turns out to be the risk-free (nominal) interest rate.¹⁸

The intuition for this result comes from thinking about the stream of ACE allowances for a particular investment project not explicitly as tax relief for the minimum (expected) rate of return required by equity investors in each period, but rather as an alternative to the expensing treatment of equity-financed investment under the R+F-base cash-flow tax. Suppose the firm invests £1,000 in an asset that lasts forever and that does not depreciate in value. The cash-flow tax gives an allowance of £1,000 in the first period. If we assume for simplicity that there is no inflation and the risk-free (real) interest rate is constant at 3%, the ACE tax instead gives a perpetual stream of ACE allowances of £30 per year, with a present value (discounted at 3%)

¹⁷ The deduction of nominal interest payments from taxable profits will again be reflected in the computation of retained profits for tax purposes used to determine future ACE allowances.

¹⁸ This convenient result was shown by Bond and Devereux (2003), building on earlier work by Fane (1987).

also of £1,000. Provided investors are indifferent between receiving £1,000 now or £30 per year forever, the ACE tax has the same neutrality properties as the cash-flow tax outlined in the previous subsection.¹⁹ If instead the ACE allowance were to be calculated using a higher interest rate than the risk-free rate, the value of the tax relief provided by the ACE tax would then exceed that provided by the cash-flow tax. The effect would then be to reduce the minimum required (expected) pre-tax rate of return below that which would be required in the absence of the tax, and corporate investment decisions would be distorted.

This view of the ACE allowance as an alternative to the up-front tax relief for equity-financed corporate investment provided under the R+F-base cash-flow tax mirrors our discussion in Chapter 13 of alternative approaches to the implementation of a personal tax on consumption. The ACE approach at the corporate level has much in common with the ‘rate-of-return allowance (RRA)’ at the personal level, while the cash-flow tax proposals are closely related to the ‘EET’ treatment of savings at the personal level. In both cases, aligning the timing of tax relief for the normal return on savings and investments more closely with the timing of tax payments on actual returns reduces the need for rebates or carry-forward provisions to deal effectively with tax losses, and may reduce associated opportunities for tax avoidance. At the corporate level, the ACE proposal has the further advantage of retaining much of the structure of existing corporate income taxes.

The ACE corporation tax would allow nominal interest payments to be deducted from the corporate tax base and would tax nominal interest receipts, so that profits from interest margins are taxed in the case of banks and other financial intermediaries. The treatments of debt-financed and equity-financed investments are equivalent in present-value terms and also similar in relation to the timing of tax payments, provided tax depreciation

¹⁹ Strictly, this requires investors to be certain that they will benefit from all future ACE allowances over the lifetime of the project. Bond and Devereux (2003) set out the tax rules that are needed in the event of firm closure or bankruptcy for this result to hold. A symmetric treatment of tax losses, at least in present-value terms, is also required. If these conditions do not hold, the risk premium component of the interest rate used to compute the ACE allowance should reflect *only* the risk that future ACE allowances will not be paid out in full, *not* the uncertainty about the underlying future returns on the project to equity investors.

schedules approximate true depreciation. In principle, the ACE tax should not distort financing choices.

Marginal investments pay no tax in present-value terms, regardless of how they are financed. Revenue is raised from projects that earn supernormal profits or economic rents, i.e. where profits exceed the minimum (expected) rate of return required to justify the investment. The taxation of economic rents at both the corporate and personal levels still raises important issues. If rents are exclusively the result of history or accident, then taxing them will generate revenue with no economic distortions. If, however, what appear to be economic rents today are in part the result of past investments of effort or financial capital, then high taxes may still discourage the activities that generated the apparent rents. In the international context, some economic rents may also be mobile across national borders. We discuss this further in Chapter 18.

Implementation of the ACE tax would preserve most of the structure of existing corporate income taxes, including depreciation schedules and interest deductibility. All that would be required would be to specify how the equity base used to compute the ACE allowance evolves over time, and which particular 'risk-free' nominal interest rate is used to compute the allowance. In most contexts, this could be approximated by the interest rate on medium-term government bonds.

17.3.3. A Comprehensive Business Income Tax (CBIT)

Equal treatments of debt and equity could also be achieved by including the normal return on debt-financed investments in the corporate tax base. This would imply the abolition of interest deductibility, and the taxation of a measure of corporate profits after depreciation but before interest.²⁰

While the deductibility of interest payments produces different treatments of debt and equity finance under the standard corporate income tax base, simply abolishing interest deductibility would not address the other concerns about the standard corporate income tax. The resulting tax base would raise the required rate of return on both debt-financed and equity-

²⁰ A proposal for a 'comprehensive business income tax (CBIT)' along these lines was put forward in US Department of the Treasury (1992) but has not so far been implemented.

financed investments, and would do so to varying degrees depending on the rate of inflation and details of the tax allowances for depreciation. The CBIT approach does not achieve a uniform treatment of different kinds of assets that firms invest in, nor does it avoid sensitivity to inflation.

Simply abolishing interest deductibility would also present a practical problem in taxing banks and other financial institutions. Taxing interest income while giving no tax relief for interest payments would imply a huge tax increase for banks and other intermediaries that make profits from borrowing and lending. Conversely, a symmetric treatment of interest income and interest payments would imply no taxation of interest income. This would exempt from taxation the component of bank profits that results from interest spreads. Neither of these outcomes seems to be attractive. One alternative would be to make interest payments deductible only against interest income. This would make net interest income taxable if interest income exceeds interest payments, but not deductible if interest payments exceed interest income. This asymmetric approach would, though, introduce a tax incentive for banks, with taxable net interest income, to acquire companies that are net borrowers, which could still erode a significant part of the corporate tax base.

While no major country has abolished interest deductibility, there is an increasing tendency for countries to limit interest deductibility on cross-border investments. This is principally to combat tax avoidance by multinational companies, which can reduce their worldwide tax payments under the standard corporate income tax base by allowing subsidiaries in countries with relatively high corporate tax rates to borrow from, and pay deductible interest to, subsidiaries in countries with lower corporate tax rates.²¹ More fundamentally, as countries have found it increasingly difficult to tax effectively the profits that companies earn abroad, and have moved explicitly to exempting foreign profits from their corporate tax bases, they have also had to consider restricting tax relief for costs of financing foreign (exempt) investment, which would otherwise only serve to reduce the domestic tax base of multinational companies.²²

²¹ This assumes that the firm has taxable profits in both locations.

²² The UK introduced exemption for foreign-source dividends in July 2009 and a 'worldwide debt cap' in January 2010. The debt cap limits interest deductibility available for UK subsidiaries of multinational groups, in relation to interest expenses for the group as a whole.

17.4. THE CHOICE OF THE CORPORATE TAX BASE

Good reasons for taxing corporate profits remain. But it is important to tax them in a way that distorts as little as possible company decisions over how much to invest, what to invest in, and how to finance that investment, as well as personal decisions over how much to save and which assets to hold. The corporate tax base should be consistent with policy choices for taxing personal savings.

The standard corporate income tax base does have some consistency with the policy choice of taxing the normal return on savings. In the UK, the normal return is taxed in many instances, though not when savings are held in the form of pension plans, ISAs, or owner-occupied housing. The difference in the treatments of corporate investment financed by debt and by equity is something of an anomaly. Historically, and in a closed economy setting, this may have been consistent with the view that returns to debt can be taxed only at the personal level, while returns to equity require taxation at source, in the corporate sector. The CBIT resolves this anomaly on the basis of taxing returns to both debt and equity at the corporate level.

With different policy choices for the taxation of personal savings, it becomes more attractive to consider alternative corporate tax bases. In principle, both the cash-flow taxes and the ACE corporation tax are consistent with a personal tax that does not tax the normal return on savings, and only taxes excess returns or economic rents. The cash-flow taxes are closely related to the expenditure tax treatment of personal savings, while the ACE is closely related to the rate-of-return allowance approach. The ACE provides an explicit deduction for the cost of using equity finance, similar to the existing deduction for the cost of interest payments on debt finance. This levels the playing field between different sources of finance. Like the RRA, the ACE can be designed to eliminate the effect of the corporate tax on the required rate of return for all forms of corporate investment. Different assets that firms invest in are treated equally, with no sensitivity of tax liabilities to the rate of inflation. With this form of corporate tax base, investment projects that just earn the minimum required or 'normal' rate of return are effectively exempt from corporate taxation, and revenue is collected from those investments that earn above-normal rates of return, or economic rents.

In a closed economy setting, with no international trade or capital flows, the choice between the CBIT and the ACE approach would depend on the kind of considerations that we discussed in Chapter 13, in the context of capital income taxation more broadly. Two kinds of argument could be used to support the ACE (or indeed the cash-flow approach).

One argument, drawing on the literature on optimal taxation, would appeal to conditions under which it would be efficient not to tax the normal return on capital, minimizing distortions to the timing of consumption. A more pragmatic case would emphasize the desirability of achieving a uniform tax treatment of different forms of saving and investment, noting that this uniformity can be achieved in practice only by tax bases that exempt the normal return on all assets. Conversely, arguments in favour of the standard corporate income tax or CBIT approaches would rest on the desirability of taxing the normal return to capital outweighing any resulting distortions to the composition and timing of investment. The choice between these two corporate tax bases would then depend on how interest and other forms of income from capital are taxed at the personal level, unless discrimination between debt and equity finance is actually considered to be desirable.

While these considerations remain important, in an open economy setting there are further reasons for questioning the desirability of taxing the normal return to capital, at least on a source-country basis. We discuss these arguments in the following chapter, as well as the practical challenges of implementing a conventional corporate tax in the setting of a modern open economy with a high degree of international capital mobility and in which multinational companies account for a substantial share of business activity. We also consider the factors that influence the choice of the corporate tax rate in this context.