

Lecture 7: Taxation of capital income

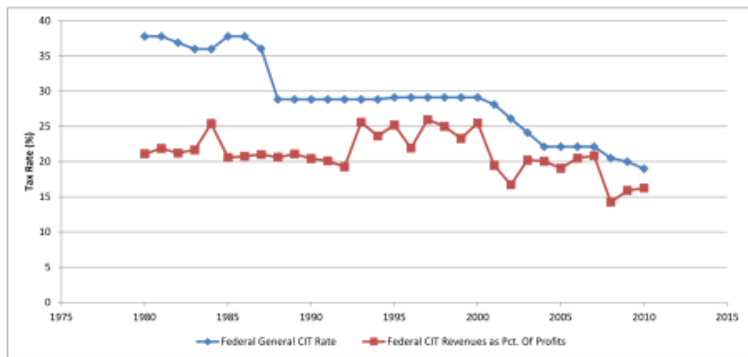
Economics 337

Introduction

- 1 Corporate income taxation: A tax on capital *employed* in the domestic economy
 - ▶ The structure of the corporate tax and trends
 - ▶ Economic effects and economic incidence of the corporate tax
 - ▶ Who bears the burden of the corporate tax?
 - ▶ Corporate taxation and globalization
- 2 Taxation of savings and capital income: A tax on capital *owned* by domestic residents
 - ▶ Effects of taxation on savings: The life cycle model
 - ▶ Should capital income be taxed?

Trends in the corporate tax

Figure : Federal corporate tax rates, Canada, 1980-2010



- Federal statutory corporate tax rates have fallen from 39% to 19% since 1986. (Also increases in tax deductions.)
- Yet controlling for the business cycle, tax revenues have remained stable: Why?

Structure of the CIT

Levied on *incorporated* businesses only.

$$\text{Tax paid} = \tau \times (\text{Revenues} - \text{Non-capital expenses} \\ - \text{Capital cost allowances} - \text{Interest on debt})$$

Notes:

- Since non-capital costs deductible, these production inputs are *not taxed* through CIT.
- CCA deduction represents *economic depreciation* – i.e. opportunity cost of owning capital assets for one year.
- While costs of corporate debt (i.e. interest) are deductible, corporate equity (i.e. dividends, capital gains) are not.
- However, personal income tax system include a *Dividend Tax Credit* that offsets equity costs in part.

Investment effects of the corporate tax

Since CIT base deducts everything except the cost of capital, then it is a tax on capital – with potentially large effects on investment and productivity (excess burden).

But some capital costs (interest, CCA) *are* deductible – so effects on investment are unclear.

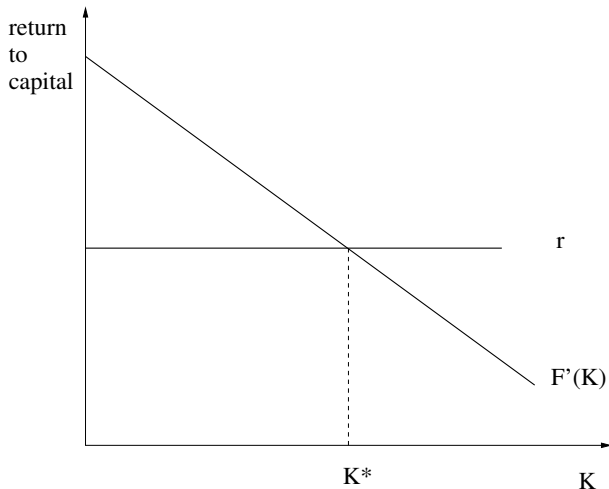
We first consider a very simple model of capital:

- A firm rents capital K for one year to generate revenues $F(K)$.
- No capital purchases, and no non-capital expenses.
- Firm borrows K to finance operations and pays interest rK to creditors.
- Corporate tax rate τ .

The firm maximizes profits by choosing K to $\max(1 - \tau)[F(K) - rK]$.
The first-order condition is $(1 - \tau)F'(K^*) = (1 - \tau)r$, or

$$F'(K^*) = r \quad \text{for all } \tau \geq 0$$

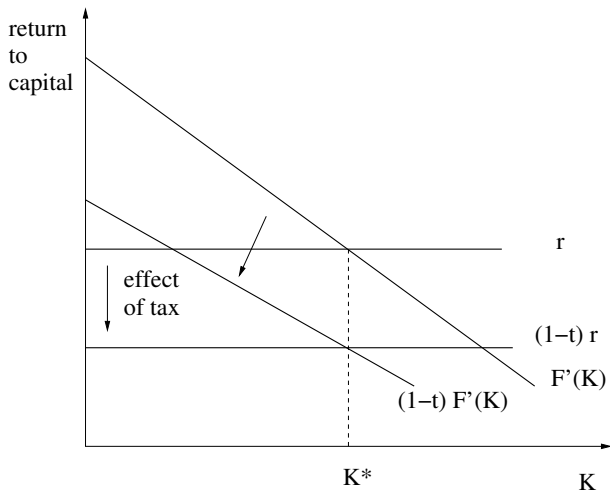
In this model, the CIT is *neutral*: no change in investment.



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Discussion: Why have a corporate tax?

Policy discussions of CIT are often framed as “fair” taxation of business. But in the *theory of tax incidence* we look at tax burdens on shareholders, workers, and consumers.

Why not tax shareholders directly, through personal income tax system?

Our simple model suggests several roles for the corporate tax:

- 1 **A tax on supranormal profits:** Some investments earn higher than required rate of return. Key examples: resource firms, monopoly profits.
- 2 **A tax on foreign investors:** Interest paid to foreign capitalists is not generally taxable through PIT.
- 3 **A tax on equity/retained earnings:** Without CIT, income could be retained in corporation and tax deferred indefinitely – potential for tax avoidance.

Corporate taxation and corporate finance

In a classical corporation tax, interest payments to bondholders are tax deductible, but return to equity (dividends, retained earnings/capital gains) are not.

- potential for tax avoidance and excess burden through excessive leverage

The personal income tax In Canada includes a *dividend tax credit* that is roughly equivalent to a corporate deduction for dividends paid to **domestic** shareholders.

- corporate and personal taxes are *integrated* in Canada
- no bias against equity; potential to reduce excess burden
- but resulting loss in personal tax revenues is large – about \$5 billion per year, largely accruing to high-income households
 - ▶ is this likely to affect corporate finance decisions of Canadian corporations?

Incidence of the corporate tax

Who ultimately bears the burden of the corporate tax? Capital or labour?

Our standard incidence model provides some insights.

- 1 Short run: the stock of capital available to invest is roughly fixed. Taxes on capital investment should be [redacted].
- 2 Longer run: investors can avoid the domestic CIT by investing abroad (or in non-corporate assets). As domestic investment falls, the pre-tax return rises, restoring equilibrium. The burden of the tax is borne by:
 - ▶ [redacted]
 - ▶ owners of internationally immobile assets (like resource rents)

Exercise: Consider a *withholding tax* on corporate payments to foreign investors. What is the incidence of this tax on foreign and domestic capitalists, and domestic workers?

Taxes and multinational corporations

In our model so far, firms choose how much to invest in the domestic economy – possibly financed by foreign portfolio investors.

In reality, much of investment is channelled through *multinational corporations* that choose between investing in country of residence, or in subsidiaries in foreign countries.

Foreign investments of MNCs are subject to taxation both in host country and in their country of residence. Approaches to alleviating double taxation:

- 1 credit system (used by US): foreign income of MNC is subject to taxation at home, with a credit for foreign taxes paid.
- 2 exemption system (used by Canada and most other rich countries): foreign income is exempt from taxation at home.

Credit vs. exemption and Capital Export Neutrality

So Canadian MNCs pay tax in Canada on investments in Canada, but not on investments abroad. Does this make sense?

MNC chooses between investment in domestic assets (domestic tax rate τ_d) and assets in a *tax haven* (foreign tax rate $\tau_f = 0$). Assets have pre-tax return (productivity) $R_i, i = d, f$.

- 1 Credit system, MNC invests at home if $(1 - \tau_d)R_d \geq (1 - \tau_d)R_f$ or

$$R_d \geq R_f$$

which maximizes worldwide productivity of capital. We say the credit system leads to *capital export neutrality*.

- 2 Exemption system, MNC invests at home if $(1 - \tau_d)R_d \geq R_f$ or

$$R_d \geq \frac{R_f}{1 - \tau_d} > R_f$$

The exemption system may lead to *offshoring* of MNC investment into foreign subsidiaries.

Multinational corporations and profit shifting

Why do Canada and other countries not adopt the credit system, like the US?

One reason is that MNCs can use financial and accounting transactions to *shift profits* out of US and other high-tax countries to *tax havens*, even without relocating their physical investments and production.

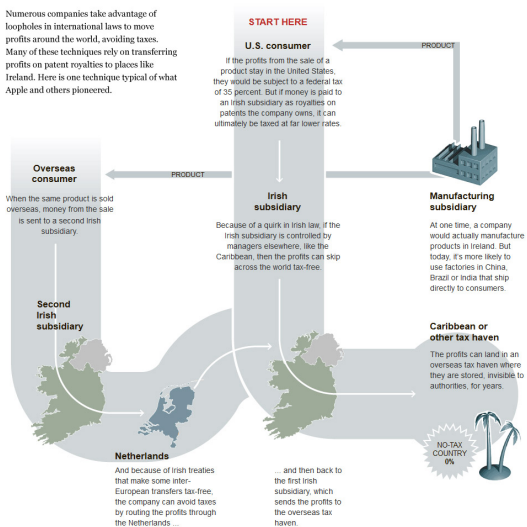
Examples of profit shifting activities:

- Transfer pricing:
[Redacted]
- Expatriation of intellectual property:
[Redacted]
- Offshore financing:
[Redacted]

International profit shifting: A case study

'Double Irish With a Dutch Sandwich'

Numerous companies take advantage of loopholes in international laws to move profits around the world, avoiding taxes. Many of these techniques rely on transferring profits on patent royalties to places like Ireland. Here is one technique typical of what Apple and others pioneered.



Source: New York Times, 2012

Implications of profit shifting

As MNCs grow in importance and profit shifting becomes more widespread, strong implications for the future of the corporate tax:

- Domestic taxable income becomes very sensitive to the domestic tax rate.
 - ▶ *tax competition* among countries who seek to benefit from profit shifting by lowering tax rate – potential *race to the bottom*.
 - ▶ as tax rates fall, more of tax burden may be borne by labour, not capital
- Potential for offshoring investment/jobs may become *lower not higher*.
 - ▶ Google can still invest in US, because it doesn't pay much tax there, despite high US tax rate.
- Corporate tax burden shifts from investors in large MNCs to smaller, domestic-only corporations.

Savings and taxation: The life cycle model

Agent lives for two periods (work and retirement). Chooses savings to

$$\max U(C_1, C_2)$$

subject to budget constraints

$$C_1 = Y - S$$

$$C_2 = [1 + r(1 - \tau)]S.$$

Equivalently, the *present-value budget constraint* is

$$C_1 + PC_2 = Y$$

where the *price of future consumption* is

So a tax on capital income is a tax on future consumption: one must now give more in the present to gain a target level of consumption in the future.

Taxes and the interest elasticity of savings

How do capital income taxes affect savings?

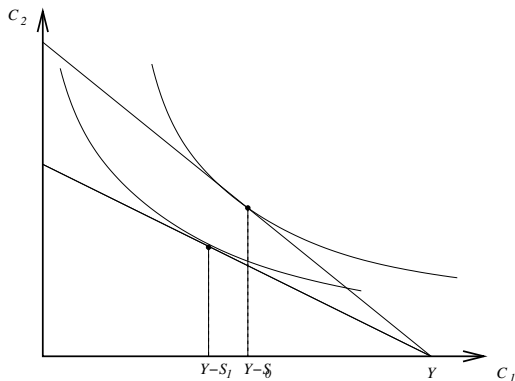


Figure : Effects of a capital income tax.

A higher tax causes:

- substitution effect: C_2 more expensive, reduces saving
- income effect: greater saving required to attain any given C_2

Taxation and savings: Solved examples

Exercise: Calculate the interest elasticity of saving

- 1 Cobb–Douglas preferences:

$$U(C_1, C_2) = \log C_1 + \beta \log C_2$$

- 2 Leontief (target saver) preferences:

$$U(C_1, C_2) = \min\{C_1, C_2\}$$

These are special cases. In general, interest elasticity of savings can be positive or negative depending on whether the substitution effect outweighs the income effect or not.

Should capital income be taxed?

I. Efficiency

- 1 Distortions to capital and labour:** Recall that a tax on capital is like a higher tax on future than current consumption. A uniform tax on consumption at all dates distorts fewer prices, and may be optimal.
- 2 Long-run distortions:** Because people plan saving over long horizons (e.g. retirement), even a small tax on capital income can create a large distortion in the price of future consumption, which is likely to be inefficient. So the case for non-taxation of *retirement saving* is stronger.
- 3 Tax avoidance:** Capital income is hard to measure and easy to reclassify, even without changing real consumption decisions. Applying the Feldstein (1995) analysis, it may be desirable to tax capital income less than labour income, which is less likely to escape taxation.

Should capital income be taxed?

II. Equity

So it may be inefficient to tax capital income. Is it fair?

- 1 Vertical equity: Capital income is earned very disproportionately by the very rich.

But for any individual the lifetime budget constraint is

$$PDV(\text{Consumption, Bequests}) = PDV(\text{Earnings, Inheritances})$$

So a progressive tax on earnings, estates can achieve any desired redistribution – no need for a capital income tax.

- 2 Horizontal equity: A capital income tax discriminates against those with uneven earnings over the life cycle – they must save more to smooth consumption.

It follows that equity is best achieved on a lifetime basis by: