Multinational firms, intellectual property and taxation

Rachel Griffith and Helen Miller

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10 October 2013

Motivation

- Economists and policy makers have been predicting a "race to the bottom" in corporate income taxes
  - due to competition between countries to attract mobile capital
- Recent reforms to corporate income tax systems seem to support this
  - large reductions in headline tax rates
  - lower taxes on foreign source income
  - introduction of preferential tax rates on income from intellectual property
- However, tax revenue has been surprisingly bouyant
  - taxable profits as a share of GDP have increased

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Motivation

- What are these taxable profits?
- What affect does taxing them have on economic activity?
  - OECD study concluded that corporate income taxes least efficient way to raise revenue
- How do important changes to the structure of economic activity affect the distortions we think these taxes have?
  - Globalisation, business increasingly takes place across many tax jurisdictions
  - Intangible assets are a more important input into production
    - these are more mobile, and returns on their use may be treated differently by the tax system, and have different distortionary effects

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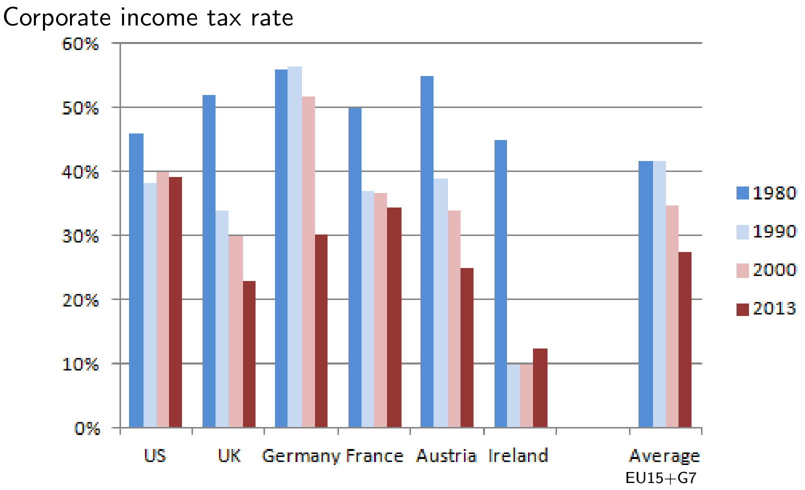
Corporate income tax rates have fallen in most countries



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Foreign source income

- Lower taxes on foreign source income
- Move to exemption of foreign source income from taxation when repatriated
- Introduction and reform of Controlled Foreign Company (CFC) rules, in general relaxing them

Preferential tax rates on income from intellectual property

Country	Year Introduced	Preferential rate	Main rate
Malta	2010	0	35
Cyprus	2012	2	10
Liechtenstein	2011	2.5	12.5
Netherlands	2007	5	25
Luxembourg	2008	5.8	29
Belgium	2007	6.8	34
Switzerland	2011	8.8	13
Hungary	2003	9.5	19
UK	2013	10	23
Spain	2008	15	30
France	2000	15.5	34

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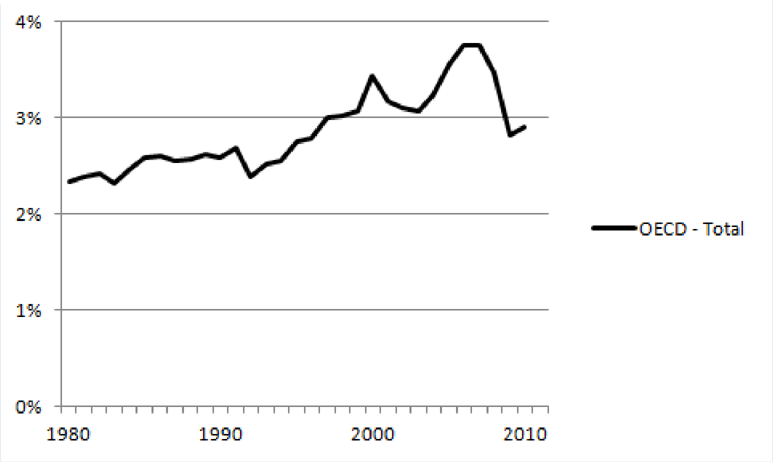
Corporate income tax revenues as a share of GDP



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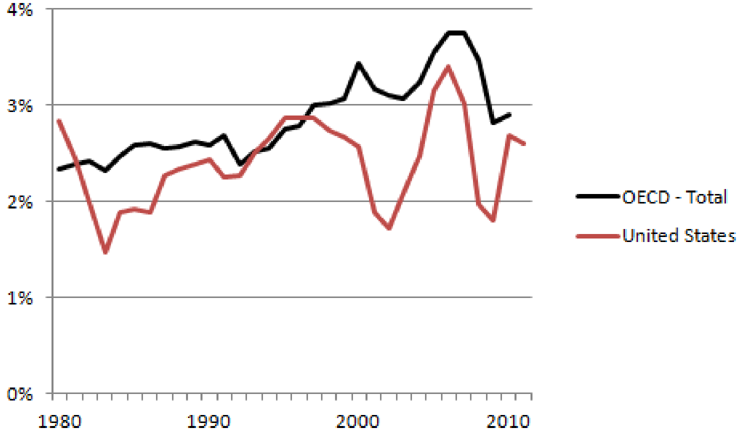

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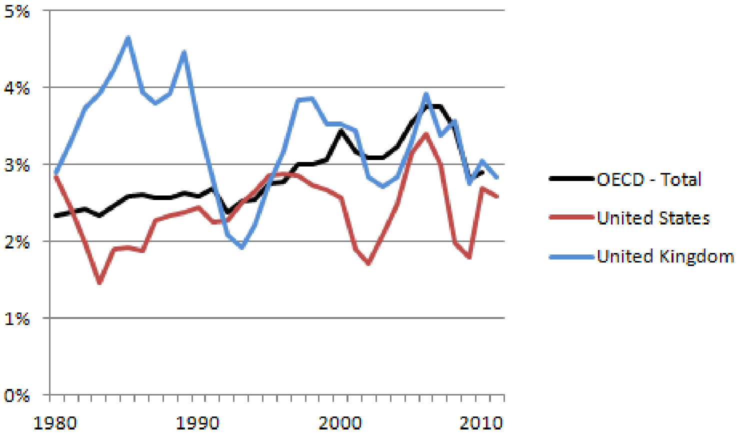

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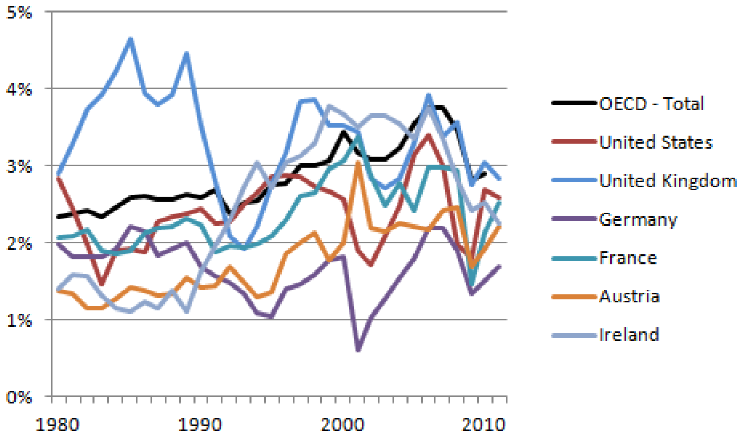

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The impact of corporate income tax

- We have objectives over revenue and redistribution for the tax system as a whole
  - but not for corporate income tax in isolation
- We aim to minimise distortions that corporate income taxes introduce
- However, it is not possible to achieve neutrality in all respects unilaterally
- Government have to make trade offs, choose which distortions most important

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Incidence

- In considering how corporate income tax distorts decision, it is important to remember:
- Corporate income tax is ultimately paid by people:
  - Owners of capital, through lower dividends or lower capital gains
  - Workers, through lower wages
  - Consumers, through higher prices
- There is considerable disagreement over which of these groups bear the burden of corporate income tax

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Incidence

- Original work by Harberger suggested that owners of capital (corporate and non-corporate) bore the entire incidence of corporate income taxes
- A large body of theoretical and empirical work considered open economy models, with capital more mobile than labour, and where countries operate source-based taxes (where governments tax the income of firms operating in that country)
    - the burden of corporate income tax is shifted to workers, because capital moves out of the country, lowering the level of productivity, which reduces wages; it might also change the bargaining between firms and workers
    - an empirical literature suggests that a half to three-quarters of corporate income taxes are shifted to workers

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Incidence

- However, several recent papers argue that this conclusion is incorrect, and that the owners of capital might bear more of the burden than this literature suggests
- First, if firms are intermediaries in global capital markets then tax will affect patterns of ownership and financing choices, but would have little impact on overall investment in a specific location
- Second, if firms can separate reported taxable income from the real location of activity then in practice taxes will not affect the location of real activity
    - some firms might not be able to engage in income shifting, but they will most likely not be able to shift real capital either

What are taxable profits?

- If incidence falls on the owners of capital, to understand what impact corporate income taxes will have on behaviour/efficiency it becomes important to understand what are taxable profits
- What might they be?
  - normal return on capital, including risk
  - return on labour or entrepreneurial effort taken in the form of stock compensation rather than wages
  - profit from exploitation of market power
- Have changes to the structure of economic activity (mobility, intangibles) changed what taxable profits represent? or the ways we think taxes distort incentives?

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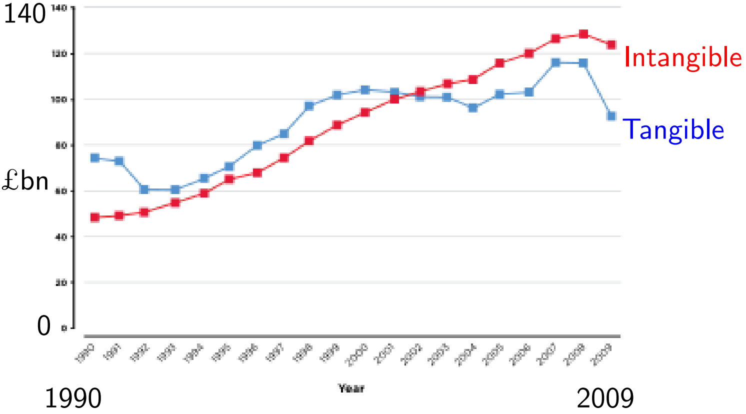
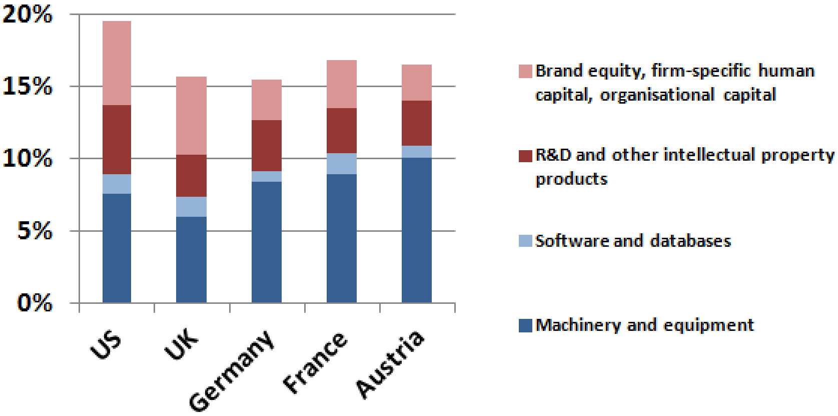
- UK investment in intangible assets now greater than tangible



Investment in Fixed and Intangible Assets, 2006

- Investment in intangible capital, as share of GDP, varies by country



Normal rate of return

- Traditional focus of the literature was on distortions arising from taxing the normal rate of return
  - taxes on the normal rate of return will discourage investment by increasing the required rate of return
- Most tax systems treat debt more generously than equity
  - debt payments are deductible, return on equity is taxed
- Firms with greater share of investment in intangibles will
  - probably be more risky, and so have a higher required rate of return to compensate for this
  - rely more on equity, because it is difficult to borrow against intangible investments

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Normal rate of return

- Some of the increase in taxable profits might reflect the fact that shifting towards greater use of intangible assets means investment is more risky, and it relies more on equity finance
- If this is the case then we would prefer a tax system that allowed deductions for the normal return on equity, and for risk; such systems exist in theory but have not been implemented in many countries

Return on entrepreneurial effort

- Some part of taxable income represents a return on labour, entrepreneurial or managerial efforts that are compensated with stocks
    - anecdotal evidence suggests this is more common in firms with higher intangible assets; e.g. it is likely that effort is more difficult to observe and contract over in these firms
    - if effort is not easily monitored then firms might use stock options to provide incentives to workers to exert effort

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Return on entrepreneurial effort

- If the increase in taxable profits is mainly due to a shift from wage to stock compensation
  - this could in part be driven by the tax system itself
  - we do not want to distort the choice between taking compensation as wages or stock
- This would suggest that we should tax corporate income at the same rate as the (higher) personal income tax

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Profits from exploitation of market power

- Taxable profits could represent the returns from market power
  - for example, due to restrictions to entry or the control of a scare resource
  - ownership of intangible assets can be a source of market power
- In an oligopoly setting some of taxes will be passed through onto prices
  - the tax can be fully shifted, undershift, or even overshifted
  - The overall impact will depend on the nature and extent of oligopolistic competition

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Profits from exploitation of market power

- If the increase in taxable profit is largely due to an increase in market power
  - the impact of taxing these profits depends on how firms will respond to the tax
  - if firms have monopoly power, then taxing part of their monopoly rents will be unlikely to affect their behaviour
  - however, if firms operate in oligopoly markets, where prices and quantities might already be distorted from the optimal level, then taxes on those profits could end up exacerbating an existing market distortion
  - to know how corporate taxes will distort behaviour in these markets we need to know more about the strategic behaviour of firms
  - and the impact will vary across markets

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Intangible capital is more mobile

- OECD described the growing significance of intellectual property and its simultaneous use by many different parts of a firm as
  - *"one of the most important commercial developments in recent decades."*
- If different firms have access to different types of intangible capital, and if these are treated differently by the tax system, then taxes might distort cross-country patterns of ownership
  - this has been of particular concern in the US and UK, where fears that corporate income taxes have led large firms to relocate their entire business offshore, taking important intangible capital with them

The income from intangible capital is more mobile

- Firms can and do separate income from real activity
  - offshore holdings can be used to reduce tax
- A tax lawyer quoted in the New York Times noted:
  - *"most of the assets that are going to be reallocated as part of a global repositioning are intellectual propertythat is where most of the profit is."*

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Rate cutting base broadening reforms

- So what have been the impacts of reforms in the light of these considerations?
- Rate cutting shifts taxes away from more profitable projects
  - empirical evidence suggests that profitable firms are more mobile
  - so reduces the tax on internationally mobile capital
- If taxable profits are normal return on capital (risk adjusted), then rate cutting reduces the distortion between firms with lower and higher intangible assets
- If taxable profits are mainly labour compensation, then rate reduction increases the distortions with respect to wage compensation
- If taxable profits are returns to market power, then it depends on how firms respond, and how taxes are passed through

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Patent Boxes

- Reduced rate of corporate income tax
    - for "income from patents"

Country	Preferential rate	Main rate
Netherlands	5	25
Luxembourg	5.8	29
Belgium	6.8	34
UK	10	23

- The UK Treasury estimates the annual revenue cost of £1.3bn from introducing the Patent Box

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Patent Boxes

- Griffith, Miller and O'Connell (2012) model firm location decisions over where to hold *income from patents*
  - use responses to past variation in corporate income tax rates to model how European firms will respond to Patent Boxes
  - firms respond to tax changes by locating legal ownership of new patents in lower tax jurisdictions (all else equal)
  - and they respond more for higher value patents (those that are expected to earn more income)
- We use the model to simulate the impact of Patent Boxes introduced in Benelux countries and the UK on the location of income from patents and tax revenue

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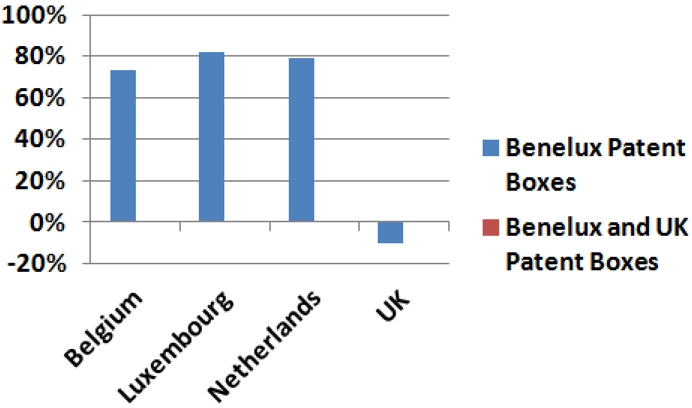
Patent Boxes attract patent income

- change in income from patents located in each country in response to introduction of Patent Box



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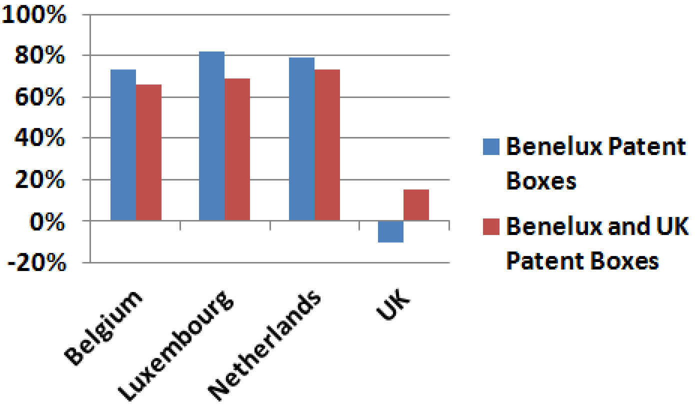

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Patent Boxes lead to reduction in tax revenues from income derived from exploiting patents

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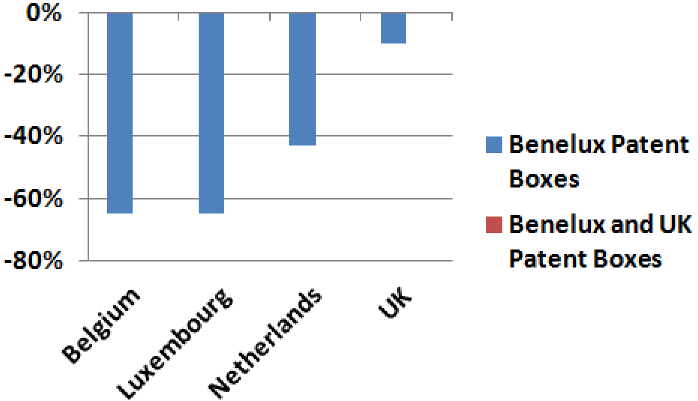

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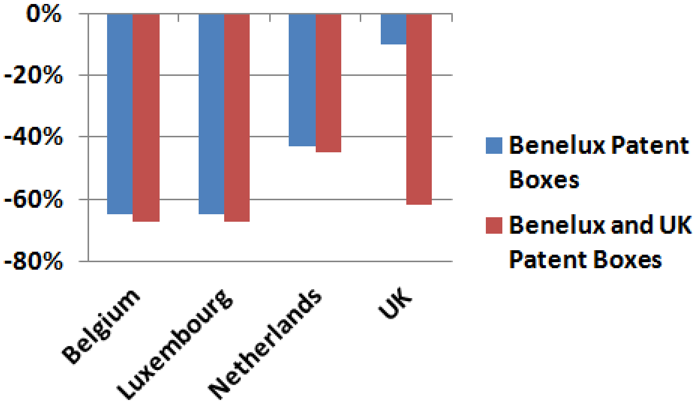

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Patent Boxes

- How we evaluate Patent Boxes depends on what we think taxable profits associated with patents are:
  - if normal returns on equity (plus risky) then Patent Boxes remove a distortion between less and more risky investments
  - if labour compensation, then should be taxed as wages; it is possible that there are externalties associated with this type of labour (knowledge spillovers), but then an R&D tax credit would be a better targeted policy
  - if from exploitation of market power, then difficult to say in general as would depend on firms' response to tax

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Concluding remarks

- There have been substantial reductions in taxes on corporate income
- However, taxable profits have increased faster, leading to steady or rising tax revenues
- How we view these tax reforms and the structure of corporate income taxes depends on:
  - who bears the burden of these taxes (incidence)
  - what we think taxable returns to corporate equity represent
- We know relatively little about the answers to these questions