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ETPF/IFS Conference
Britain, Europe and Tax Competition

Tax and Foreign Direct Investment

Empirical Evidence

Contrasting views on the effect of tax on FDI

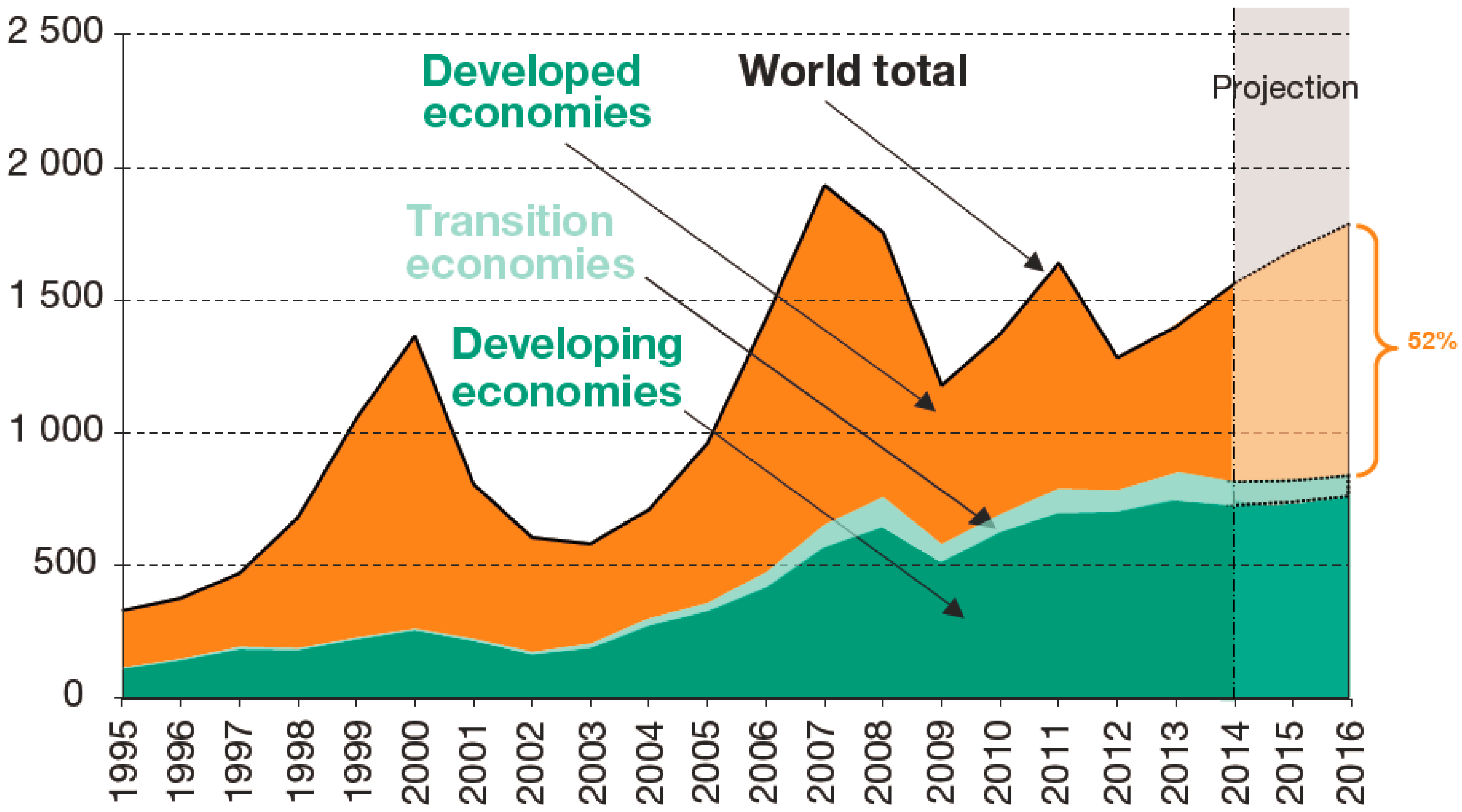
Findings of Policy Experiment

Effect of Changes in Irish Statutory Tax Rate on Location Probability					
	Remain at 12.5%	Change to 15%	Change to 17.5%	Change to 20%	Change to 22.5%
Probability of locating in Ireland	3.12%	2.44%	1.98%	1.65%	1.43%
Change in percent of new affiliates opened in Ireland	0%	-22%	-37%	-47%	-54%

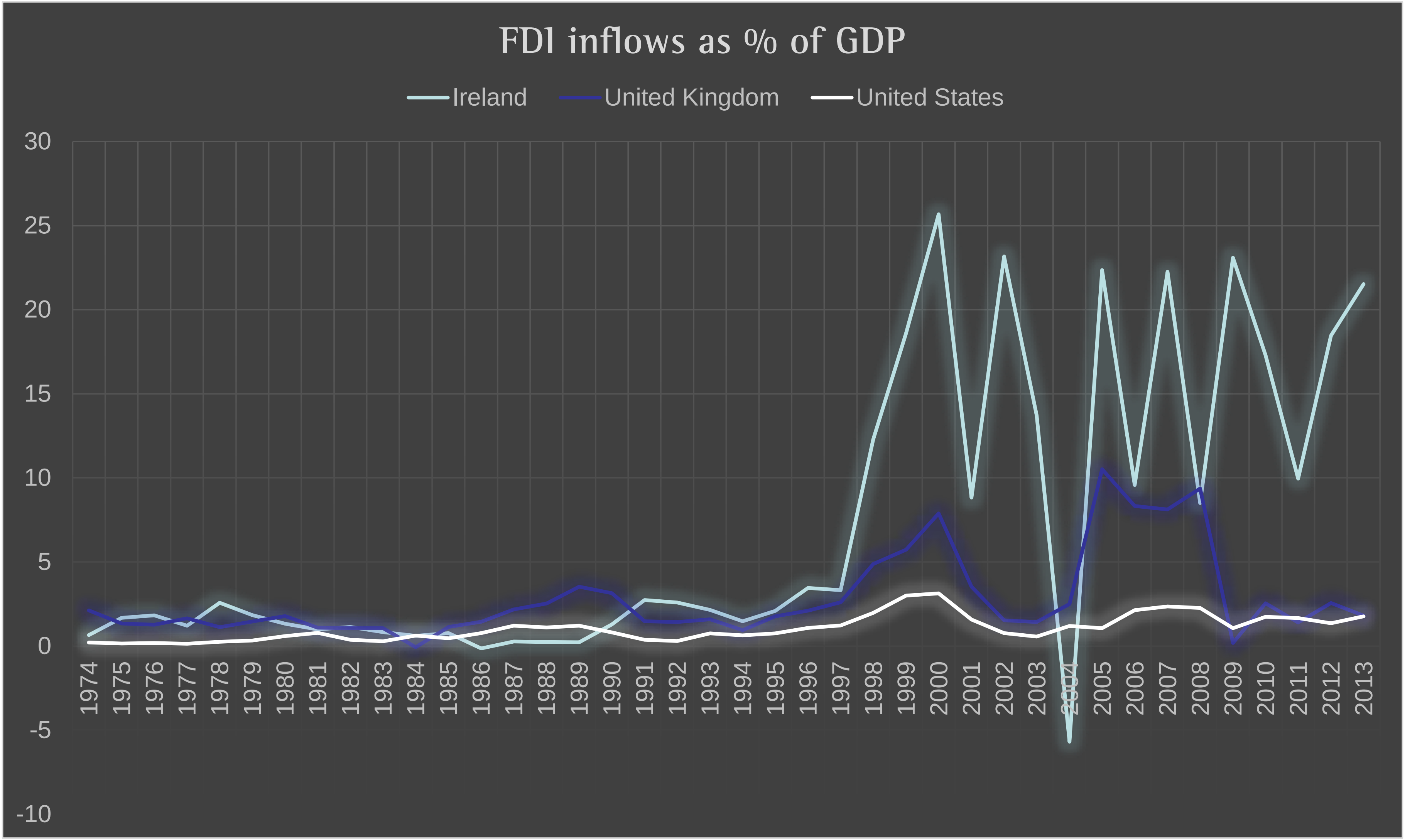
- (Report for the Irish Ministry of Finance, 2014)
- Versus: “Taxes appear to be of second-order importance” (Markusen, 2002)

FDI trends over the last 20 years

Figure 1. FDI inflows, global and by group of economies, 1995–2013 and projections, 2014-2016
(Billions of dollars)



FDI for three countries



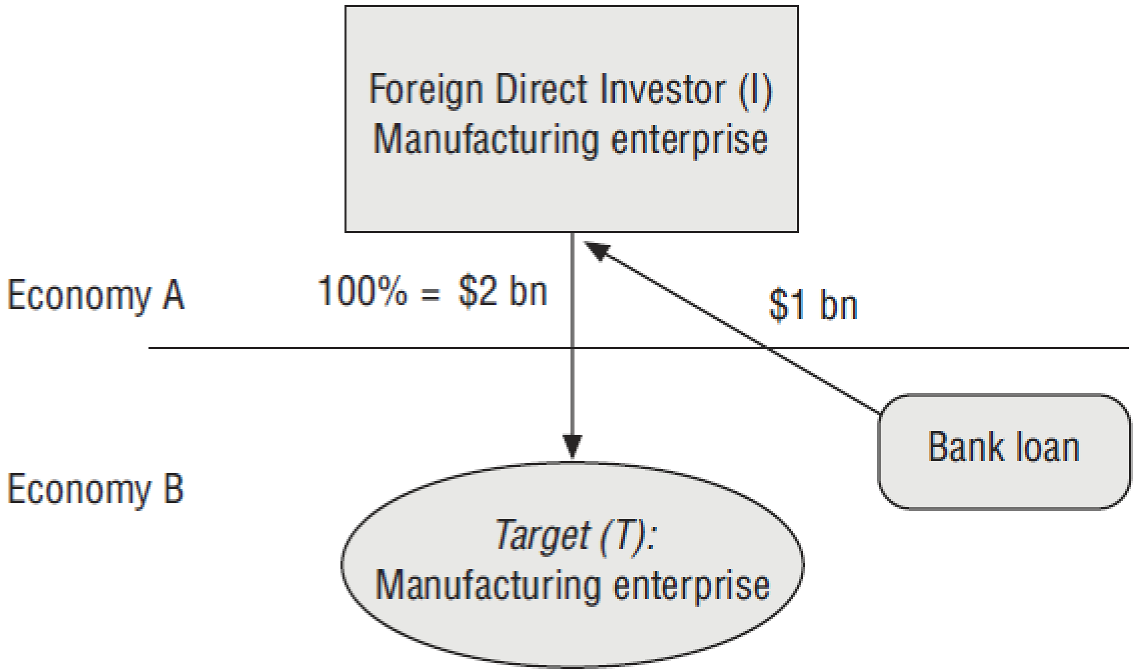
What constitutes Foreign Direct Investment?

- Investment to acquire a lasting interest (>10%) in an enterprise abroad

- Comprises heterogenous transactions:
  - Greenfield Investment
  - Cross-border mergers & acquisitions
  - Earnings which are not repatriated
  - Intra-group financing
    - Capital in transit
  - Other changes
    - Exchange rate movements
    - Capital gains/losses, write-offs

- Hence, discussion of aggregate FDI figures can be misleading

Do M&As count as FDI? Financing matters



Capital in Transit

Figure A.7.3. **The transformation of capital by SPEs**

(the links in the chain of FDI shown below represent 100% ownerships)

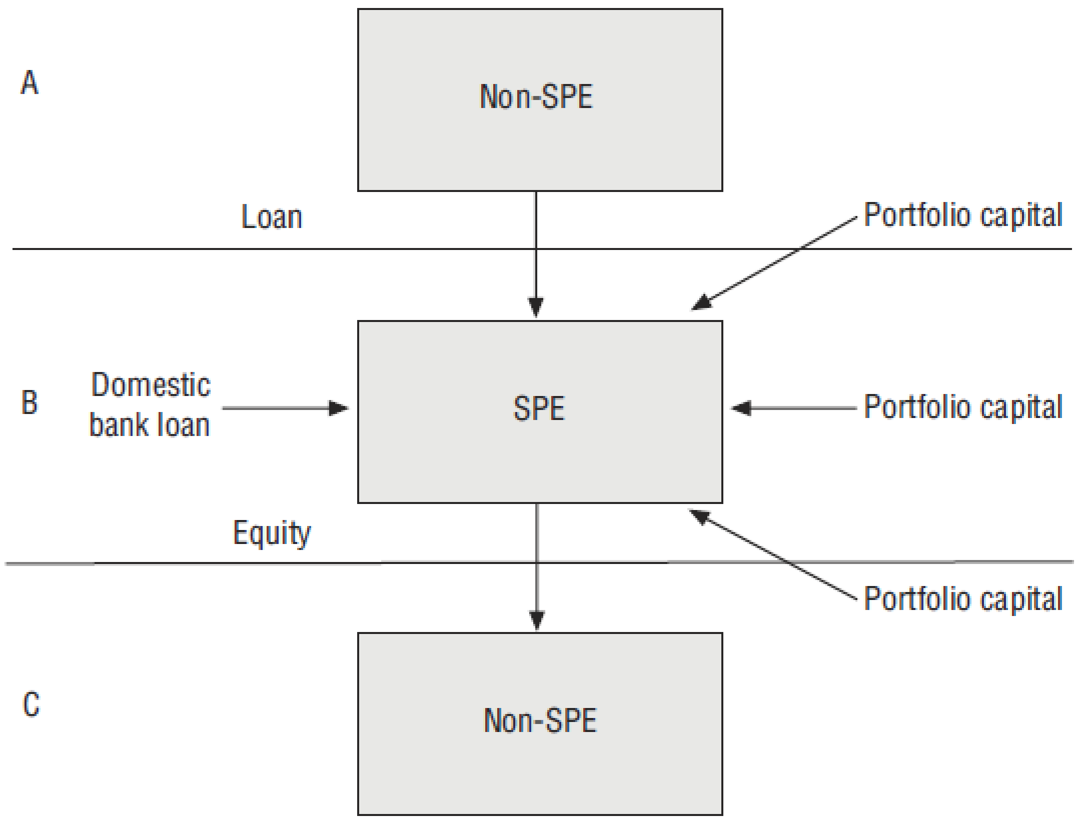


Table A.10.1. **Foreign direct investment of the united states by immediate and ultimate investor**

Positions at year-end 2004

	By country of immediate partner		By country of ultimate investor	
	Millions of dollars	Per cent	Millions of dollars	Per cent
All countries	**1 526 306**	**100.0**	**1 526 306**	**100.0**
Canada	**133 761**	**8.8**	**139 904**	**9.2**
Europe	**1 078 287**	**70.6**	**977 346**	**64.0**
Austria	3 720	0.2	2 627	0.2
Belgium	11 285	0.7	11 750	0.8
Denmark	5 450	0.4	4 005	0.3
Finland	5 509	0.4	6 990	0.5
France	148 242	9.7	149 436	9.8
Germany	163 372	10.7	171 683	11.2
Ireland	21 153	1.4	9 426	0.6
Italy	7 421	0.5	15 745	1.0
Liechtenstein	310	0.0	397	0.0
Luxembourg	107 842	7.1	8 813	0.6
Netherlands	167 280	11.0	139 952	9.2
Norway	3 136	0.2	2 604	0.2
Spain	5 669	0.4	7 102	0.5
Sweden	23 853	1.6	19 389	1.3
Switzerland	122 944	8.1	58 691	3.8
United Kingdom	251 562	16.5	366 024	24.0
Other	29 539	1.9	2 710	0.2

Benefits of Foreign Direct Investment

- Larger stock of capital – raises productivity / wages of labor
- Ownership advantage
  - Multinationals most productive type of firms
- Knowledge spillovers
  - Increases productivity of host country’s domestic sector
- Lower volatility (than portfolio investment)
- More competition
- Less resources spent on trade costs

Effect of tax on FDI – Conceptually

- Capital flows to locations offering the highest net returns
  - Until returns are equal everywhere
- Decreasing taxes increases net return
- Capital starts to flow in until net returns fall back to the worldwide level

Appropriate measure of the tax burden?

- Statutory tax rate
  - Salient
  - But definition of the tax base is not taken into account

- EMTR: Effective marginal tax rate
  - Size of investment is increased as long as further expansion is profitable
  - EMTR is the effective tax rate which applies to the marginal investment project which just breaks even
  - But can investment projects be sliced and diced at will?

- EATR: Effective average tax rate
  - Lumpy investment project (e.g. factory to serve a whole market)
  - EATR is the effective tax rate which applies to this investment project
  - Depends on the profitability of a project: EATR → statutory tax rate for very profitable projects because deductions become basically irrelevant

Evidence on location decisions

- Aggregate FDI measures difficult to interpret (as laid out on previous slides)
- Instead analyze in which country multinationals locate new subsidiaries
  - Devereux and Griffith (1998)

- EMTR does not appear to matter (discrete decisions…)
- EATR ↘ by 1 percentage point, then FDI ↗ by 2.5%
  - 95% Confidence interval ranges from 0.6% to 4.4%

- Statutory tax rate has the same effect, evidence even more robust
  - Are mobile projects very profitable? (EATR → statutory tax)
    - But result persists when excluding holding companies
    - But more profitable subsidiaries less sensitive to tax than less profitable subsidiaries. Location specific rents?
  - Is the statutory rate the component of EATR which we measure with the least error?

Evidence on the size of investments

- Having decided on the investment location, what is the effect of tax on the subsidiary's size?

- Statutory tax rate $\searrow$ by 1 percentage point, then Total Assets $\nearrow$ by 1.6% in the long run
  - 95% Confidence interval ranges from 0.9% to 2.3%

- EMTR has a similar effect but it is not beyond doubt that it is the relevant tax measure
  - Are most investment decisions discrete?

Greenfield versus M&As

- 2/3 of FDI are acquisitions, 1/3 of FDI is greenfield (German outbound FDI data)

- Acquisitions only half as responsive to tax compared to greenfield
  - Statutory tax rate ↘ by 1 percentage point, then acquisitions ↗ by 1.2%
  - while # of greenfield investments ↗ by 2.1%

  - Taxes capitalized in acquisition prices
  - Or set of potential target firms is constrained

- Greenfield
  - Extending host country's production capacity especially with idle resources
  - More productive firms choose greenfield as their mode of entry
- Acquisitions
  - More knowledge spillovers to host country
  - Important for industry consolidation in integrating markets

International Taxation / Tax Shielding

- With deferral is there any difference between investors from tax credit countries and exemption countries?

- Former group relatively more present in high tax locations (U.S. states)
- Statutory tax rate ↘ by 1 percentage point, then # of acquisitions by foreign investors ↗ by 1.9%
  - but not for investors from tax credit countries with higher taxes
- Similar findings for the location choice of new subsidiaries

- Corporate inversions are just drastic examples for this more general phenomenon

- Role of tax treaties?
  - Withholding taxes on dividends do not matter generally
  - Access to mutual agreement procedures for transfer pricing issues induces investment from IP intensive firms – doubling their rate of entry

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Parent country tax

- One may expect that higher home country taxes increase FDI because the option to invest abroad becomes more attractive.
- Evidence based on aggregate FDI would support this view
  - To keep in mind: Intra-group financing also counts as FDI. More capital acquired through higher leverage in the parent country (and then passed on to subsidiaries)?

- In contrast: *Parent's* statutory tax rate ↘ by 1 percentage point, then assets of foreign subsidiaries ↗ by 0.6%
- Especially for firms with intangible property

- Parent firm provides a common input factor (e.g. R&D) to the whole group.
- Higher taxes may reduce the provision of this common input factor reducing firm size in all parts of the multinational.

Conclusion

- Robust policy choice for attracting FDI: Reducing effective average tax burden by cutting the statutory rate.
- A reduction by 10 percentage points should
  - Increase the number of multinational subsidiaries by 25% (confidence interval ranging from 6% to 44%)
  - Increase the size of these subsidiaries by 16% (confidence interval ranging from 9% to 23%)
- Also non-rate aspects such as Mutual Agreement Procedures important

- National perspective: Benefits of increased FDI have to be traded off against
  - Loss of tax revenue
  - Corporate income tax as a backstop to profit shifting from personal income to corporate income
  - Corporate income tax as a withholding tax on capital income

- From a global perspective: only an overall increase in FDI is valuable
  - Tax rates could be too low due to a "Begging-thy-neighbor" effect.