TAX POLICY FOR INNOVATION AND ENTREPRENEURSHIP

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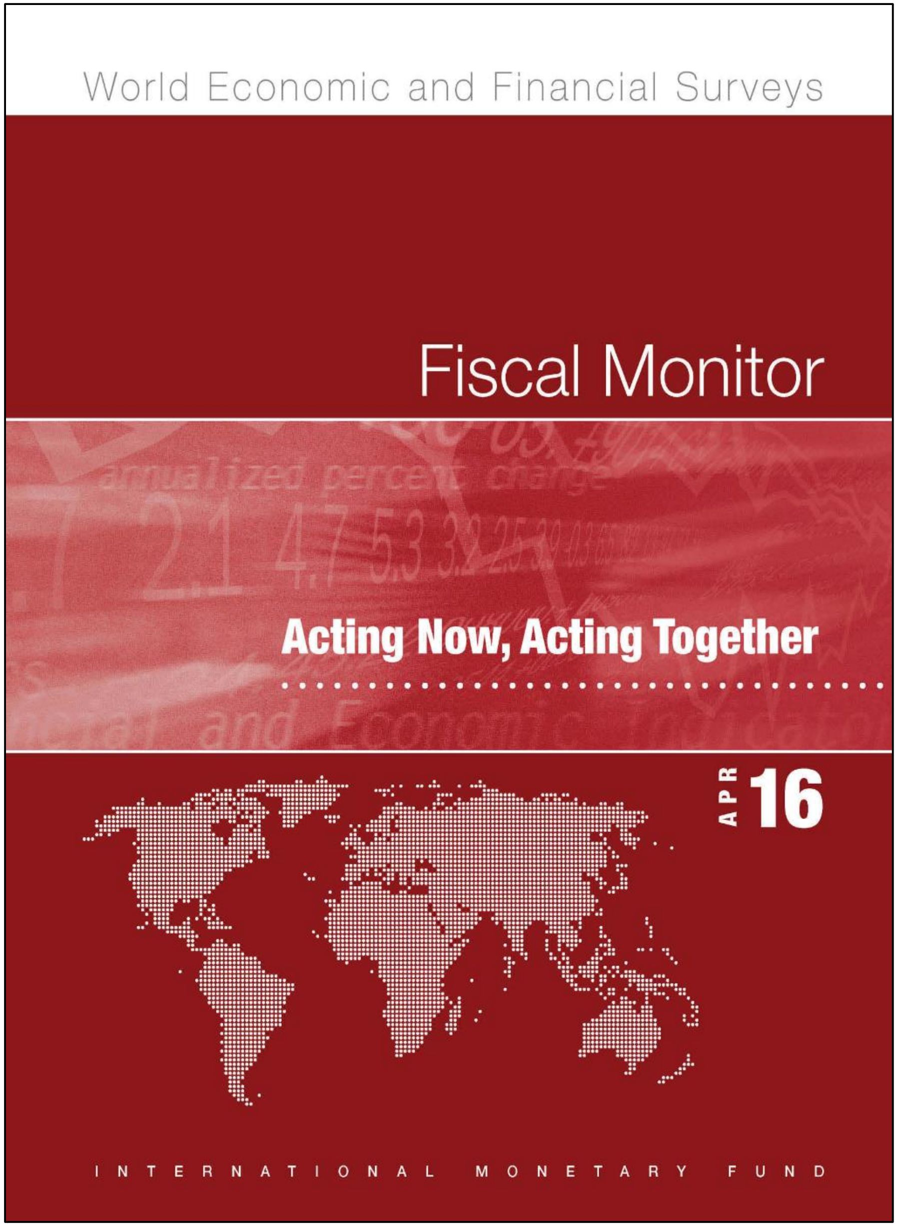
On incentives for innovation and entrepreneurship:

April 2016 *Fiscal Monitor*



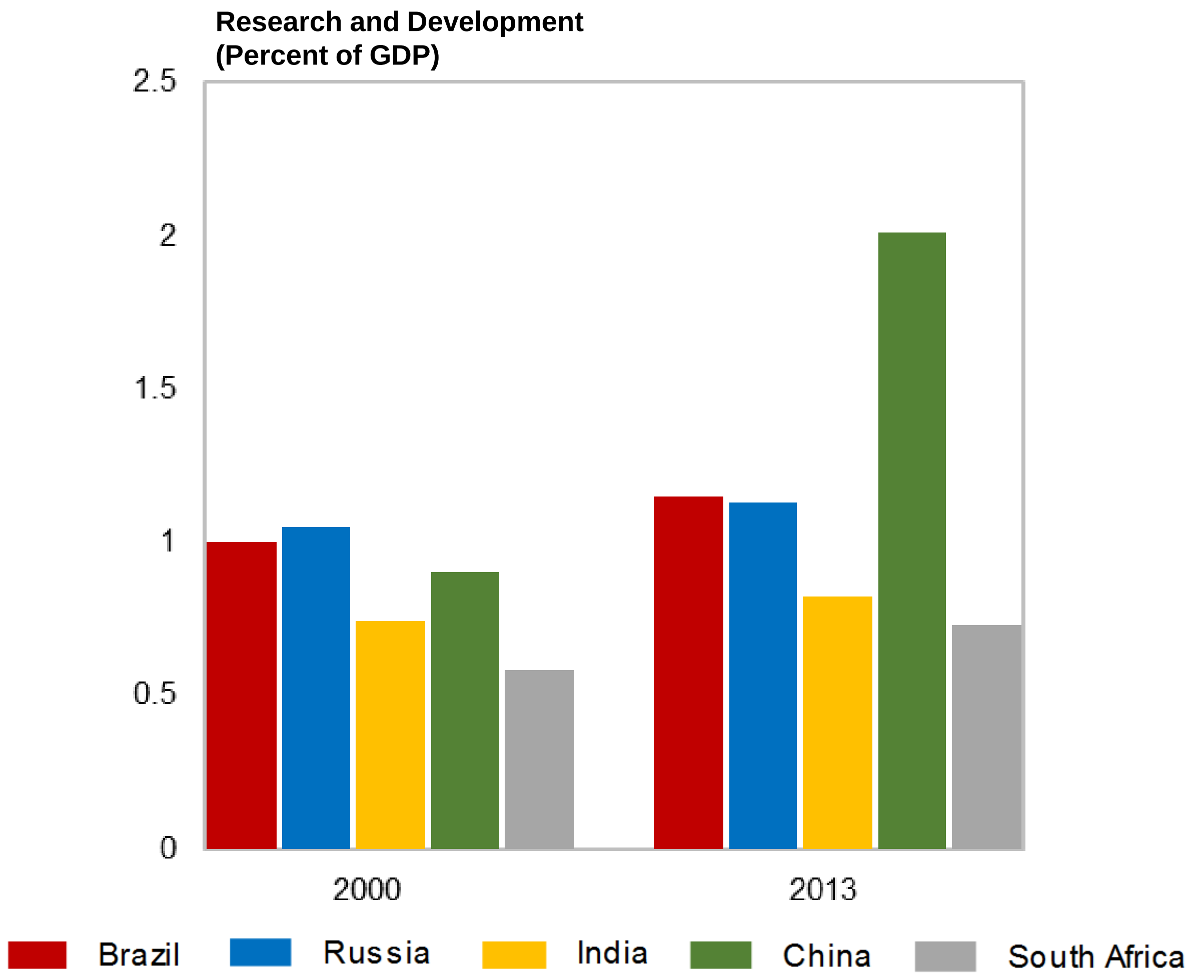
Outline

- Incentivizing R&D
- Technology transfer
- Entrepreneurship

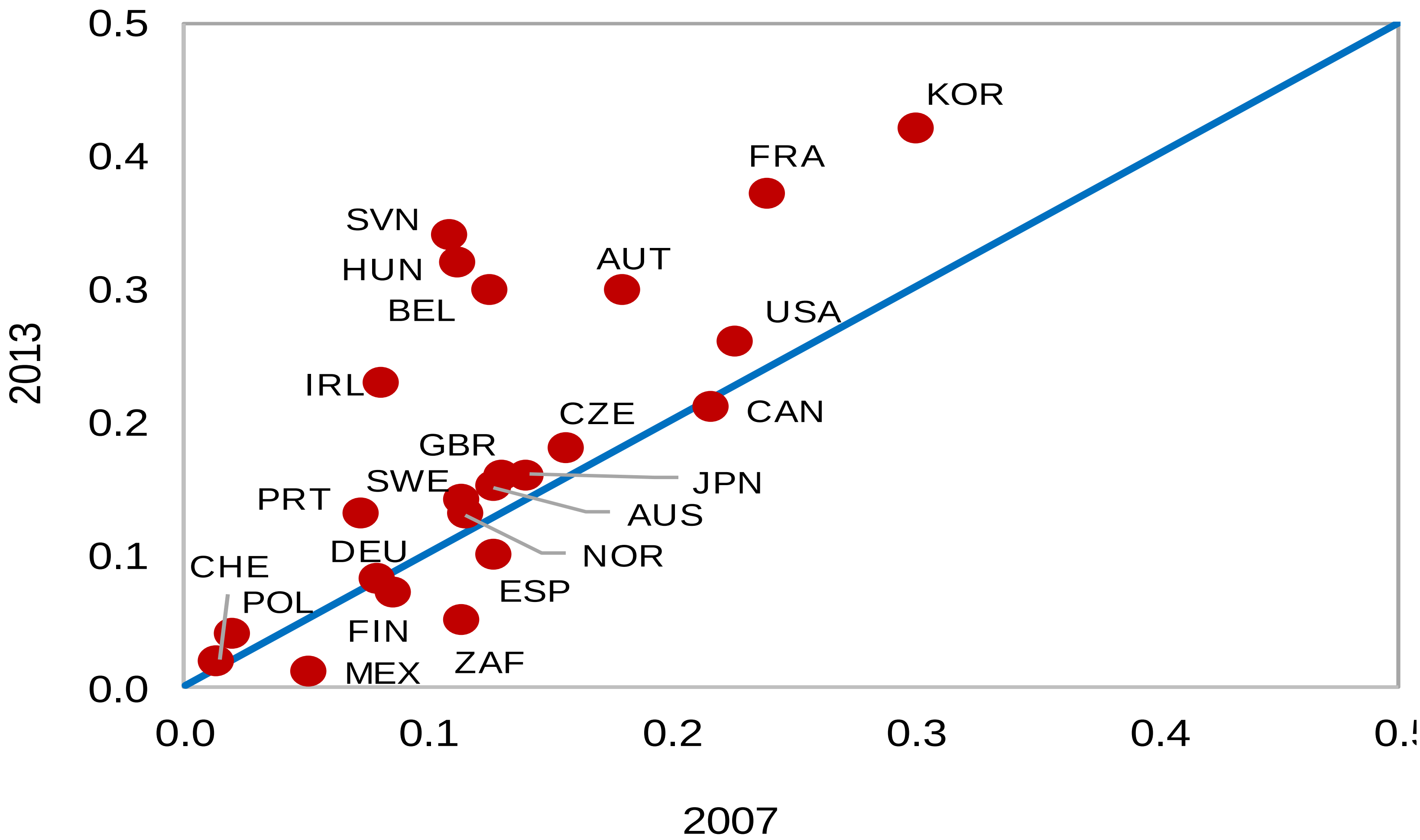
INCENTIVIZING PRIVATE R&D

Spending highest in advanced

…but sizable in BRICS



Fiscal support for R&D on the rise …



(Percent of GDP)

But still too little private R&D

- Credit constraints (especially during recessions)
- Spillovers to wider economy, solutions being:
  - Protection of property rights: but market for technology prices less than 5 % of R&D spillovers
  - Fiscal support

Sizing the potential gains

- Domestic social returns about twice private returns
- Correcting for this increases GDP by about 5% (in 20 years)
  - At annual fiscal cost of around 0.4% of GDP
- International spillovers could add to these effects
  - R&D in G7 yields 25% extra return outside G7
  - Correcting for this implies GDP increase of 8%

Some R&D incentives in the region (2015)

(Please correct!)

China	150% R&D super deduction 15% reduced CIT rate for high-tech firms
India	200% R&D super-deduction Patent box (2016)
Korea	Either 40% of increment (50% for SMEs) ; Or between 2% and 25% on volume, depending on size
Malaysia	200% super-deduction 100% investment tax allowance for R&D service providers
Singapore	Up to 400% super-deduction

What measures?

Reducing private costs

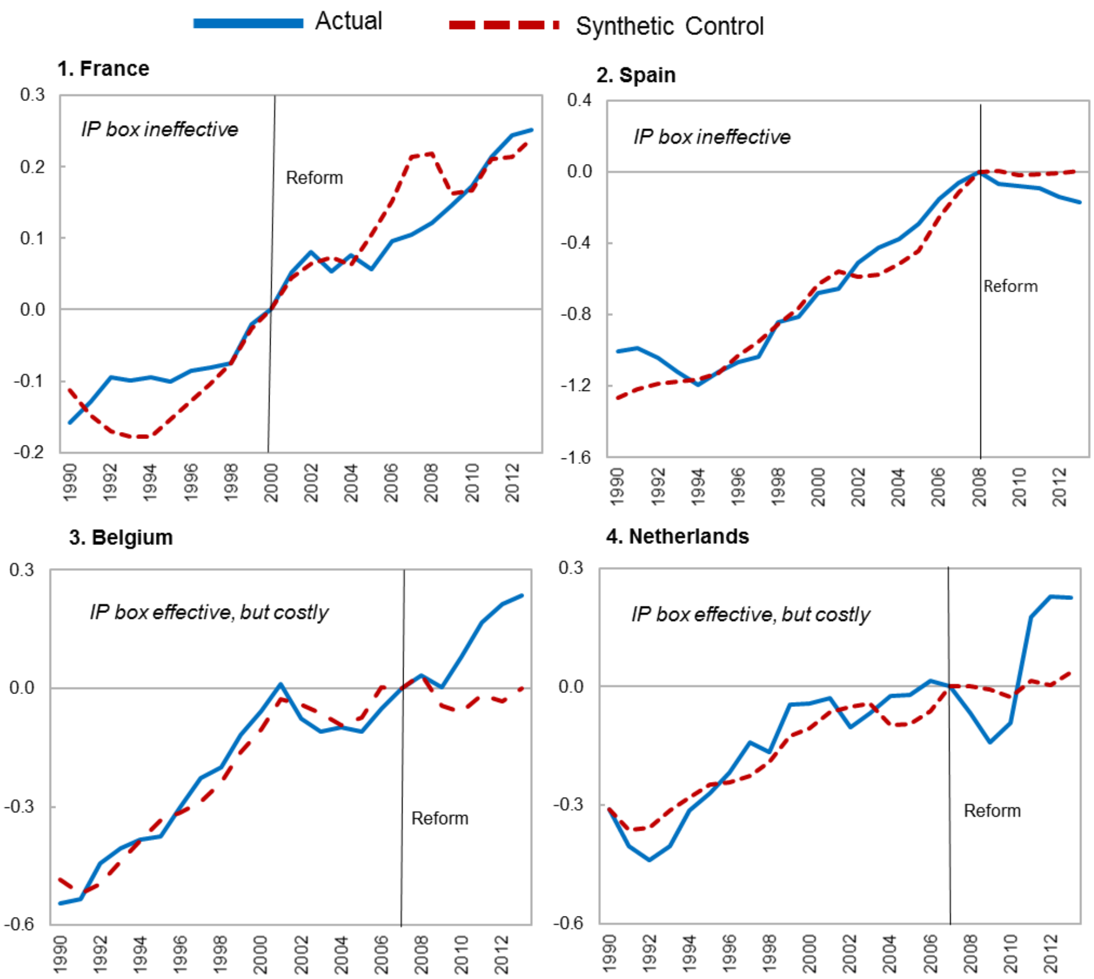
- Tax credit/super-deduction
  - But only limited help to loss makers unless refundable
  - On level of or change in spending?
- Subsidy

Reducing tax on associated income

- “Patent boxes”
  - Less well-targeted to increase speeding
  - “Nexus approach” of BEPS Action 5 (minimum standard)

Do patent boxes raise R&D?

Synthetic Control Estimation Results: Intellectual Property Box and Private R&D *(Log of real R&D spending)*



- *Ineffective* – no effect at all in two countries
- *Inefficient* – relief depends on income, not R&D
- *Negative international spillovers* – focus is on attracting mobile IP income (aggressive tax competition)

TECHNOLOGY TRANSFER

Technology transfer requires …

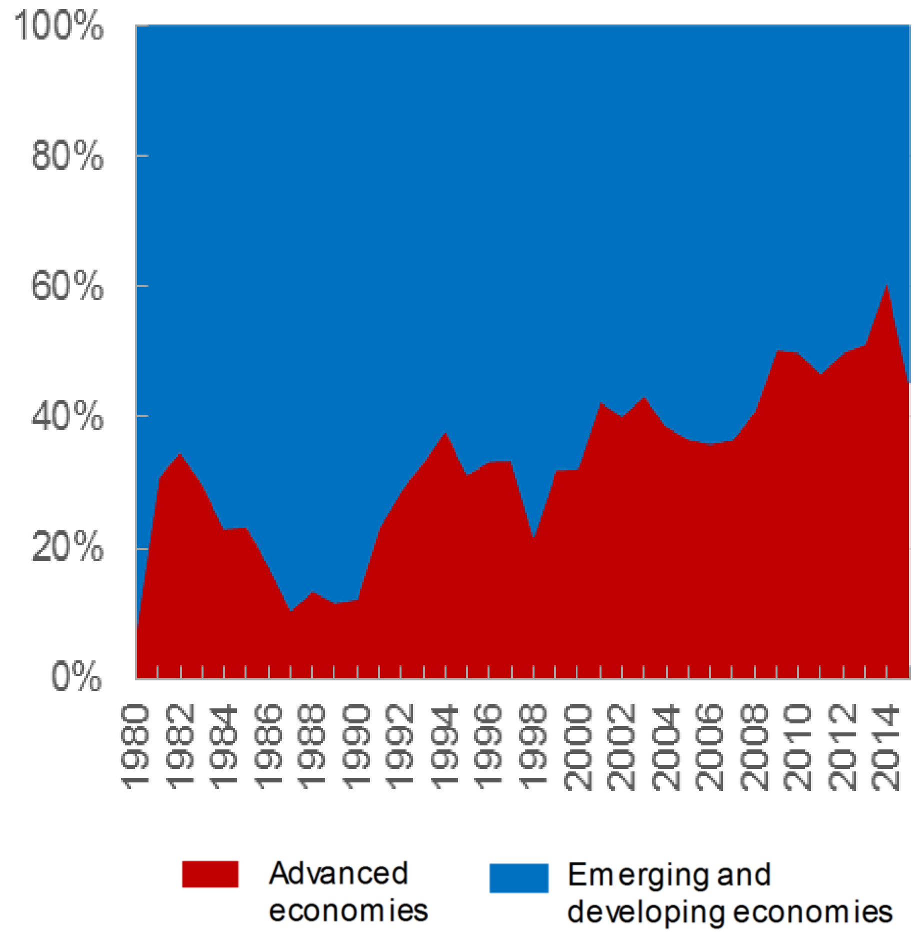
Attracting FDI (and trade)

- Presumed productivity spillovers
  —some signs mainly vertical

Absorption not automatic

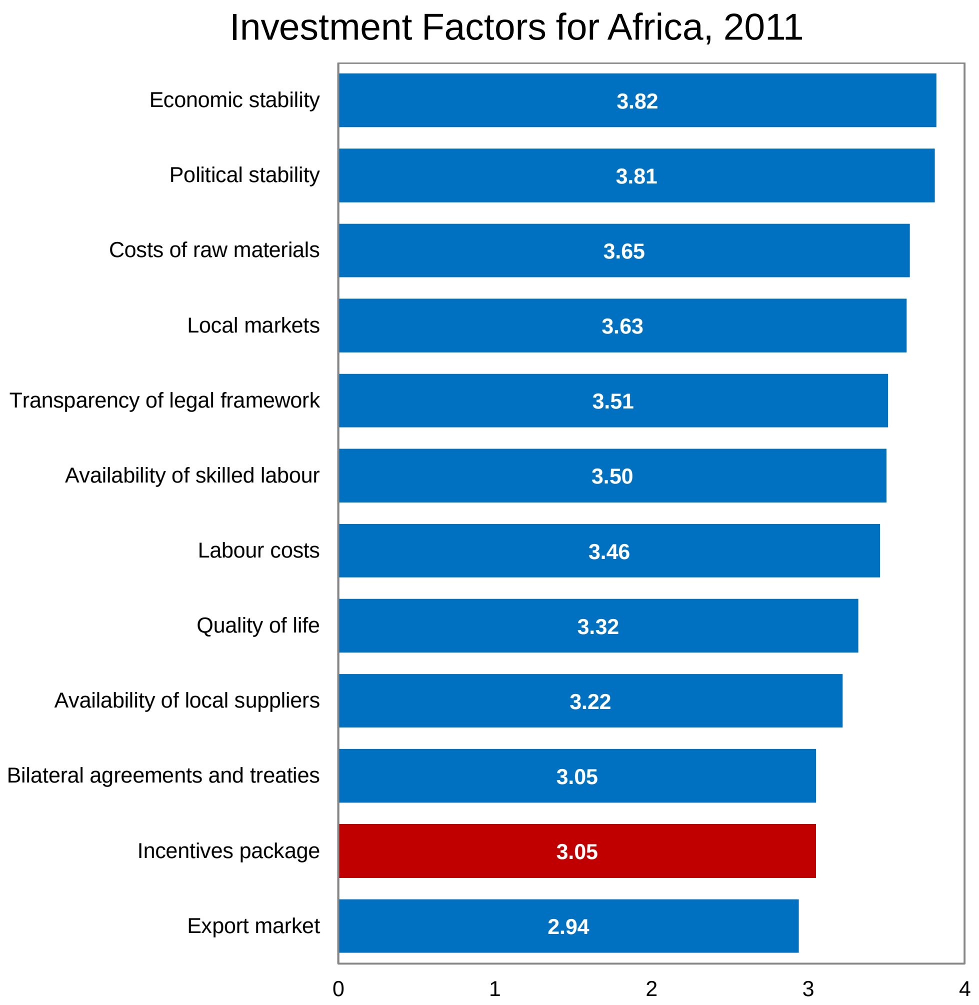
- Requires public investment in human/physical capital..
- …which needs domestic revenue mobilization

FDI inflows (in percent of world FDI)



Can tax breaks help?

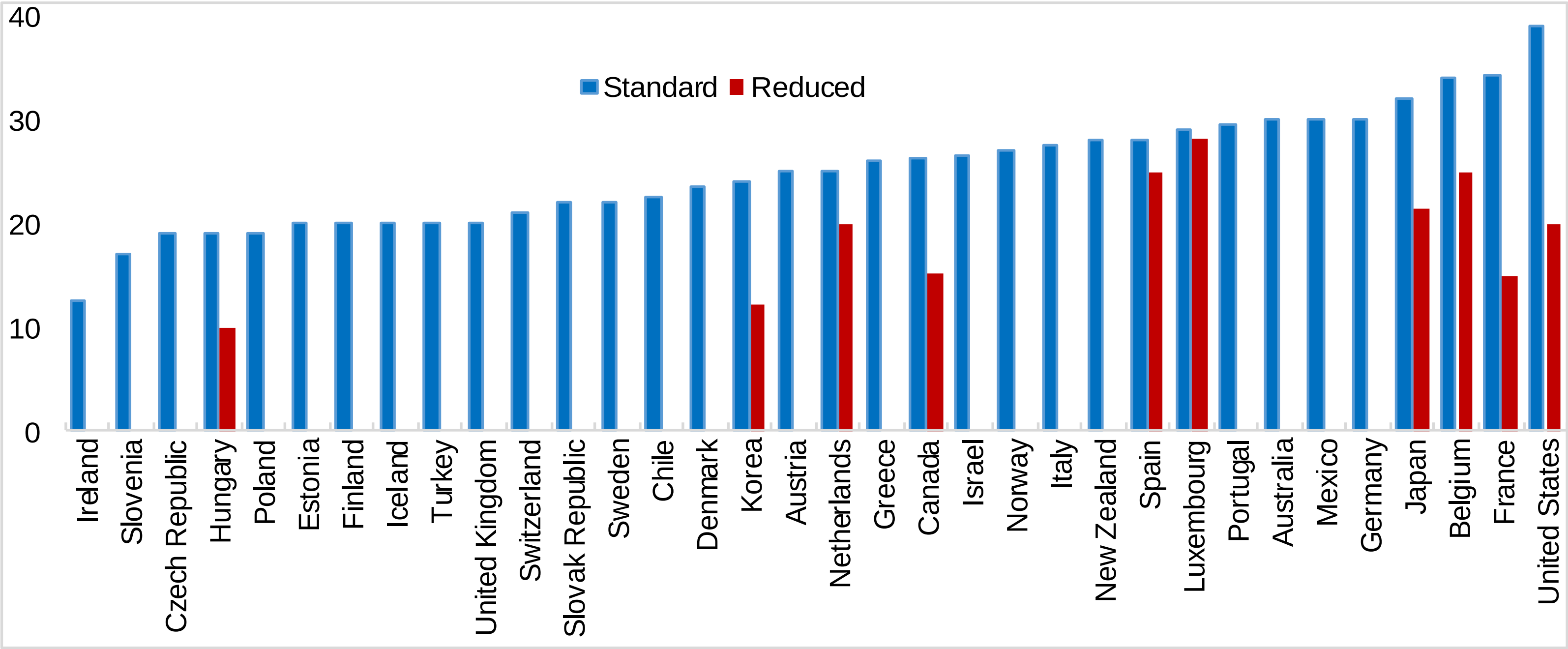
- Investor surveys: Tax incentives relatively unimportant---and often costly
- New estimates: Tax rate matters less for FDI in developing countries
- 'Picking winners'? Governance issues; mixed record at best



ENTREPRENEURSHIP

Reduced rates common, but poorly targeted

Reduced CIT rates for small firms are used in 10 OECD countries



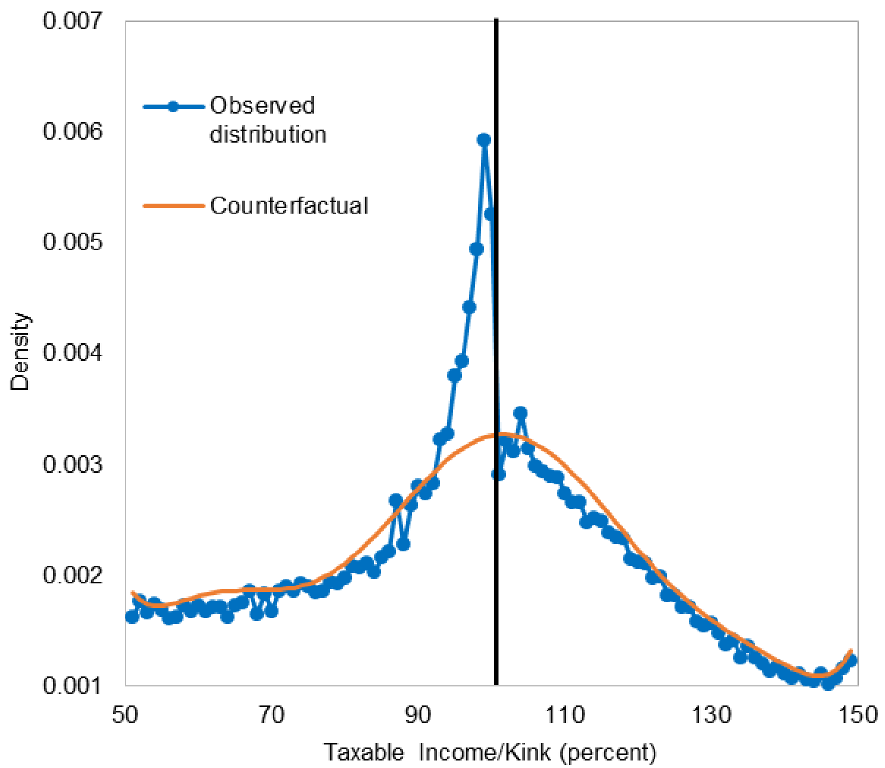
Source: OECD Tax Database
Note: Central and sub-central statutory CIT rate, including surcharges

But beware the 'small business trap'…

- The trouble with incentives favoring small firms…
  - Most small firms are not new or innovative
  - 'Small-business-trap': bunching at kinks and notches
- Stronger case to favor new firms
  - Refundable schemes
  - Focus on innovation
  - Simplified schemes

  But can be hard to implement

Bunching at a Kink – Evidence for Costa Rica 2006–13
(Density of taxpayers along the income distribution)



Source: Brockmeyer and Hernandez (2016).
Note: The kink refers to the income level at the exemption threshold for self-employed taxpayers for the years 2006-13. 100 on the horizontal axis denotes that taxable income is precisely equal to the threshold. The tax rate above the threshold is 10 percent.

…and damage from compliance costs

- Not only are compliance costs especially tough on small firms

- They can also discourage entry