

# Lecture Notes: Systems Competition

## I.1: Introduction

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# 1 Introduction

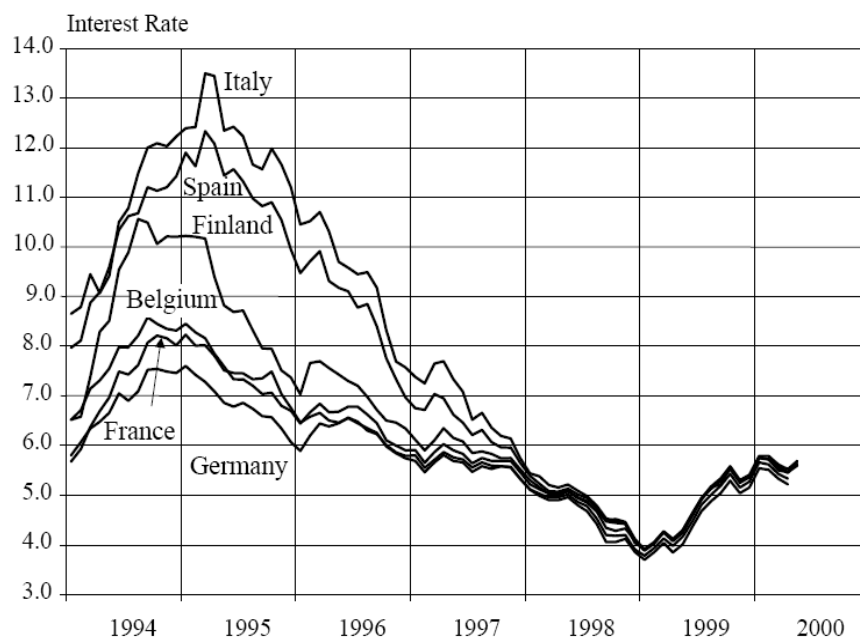
- *The New Systems Competition*: competition between economic systems for internationally mobile production factors as capital and labor.
- *Example 1: Tax Competition*. Countries lower their tax rates in order to attract mobile tax bases.
- *Example 2: Welfare Competition*: Countries offer low welfare benefits in order to distract potential welfare recipients from moving to the jurisdiction.
- *Example 3: Regulatory Competition*: Countries lower (banking, environmental, product) standards in order to attract firms.
- *The Old Systems Competition*: competition between communism and capitalism for economic, cultural and military dominance.

- *The Selection Principle*: Governments take over all activities which the private market proved to be unable to carry out.
- *Inference 1*: Market failures (due to increasing returns to scale, asymmetric information, monopoly power) which originally caused governments to be invoked are likely to appear again at the inter-state level of the systems competition.
- *Inference 2*: Harmonization or centralized actions on a supranational level are often necessary in to rule the game under which systems competition takes place.
- *Inference 3*: International inefficiencies will be reduced since mobile factors of production will prefer the more efficient states. Governments will adjust their policies in line with national interest rather than the wants of special interest groups.
- *Inference 4*: In case no market failure prevails, decentralized action leads to a Pareto efficient outcome.

# 1.1 Empirical Evidence

## 1. Has capital mobility increased over the last decades?

- Exchange rate volatility of EMU members has been reduced to zero.
- Interest convergence for ten-year government bonds in EMU countries.\*

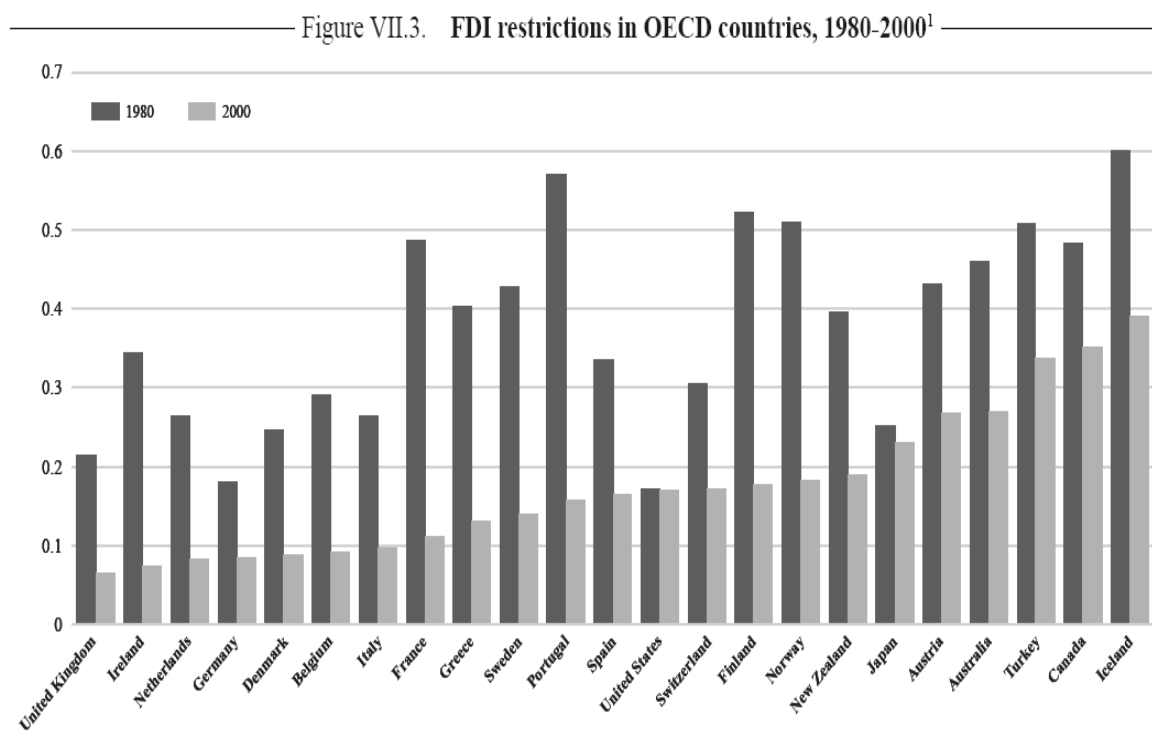


**Figure 1.1** Convergence in the European capital market: long-term interest rates in Euroland.

*Source:* Deutsche Bundesbank (database).

\*Source: Hans-Werner Sinn, 2003: *The New Systems Competition*, Yrjö Jahnsson Lectures, Basil Blackwell: Oxford, Chapter 1.

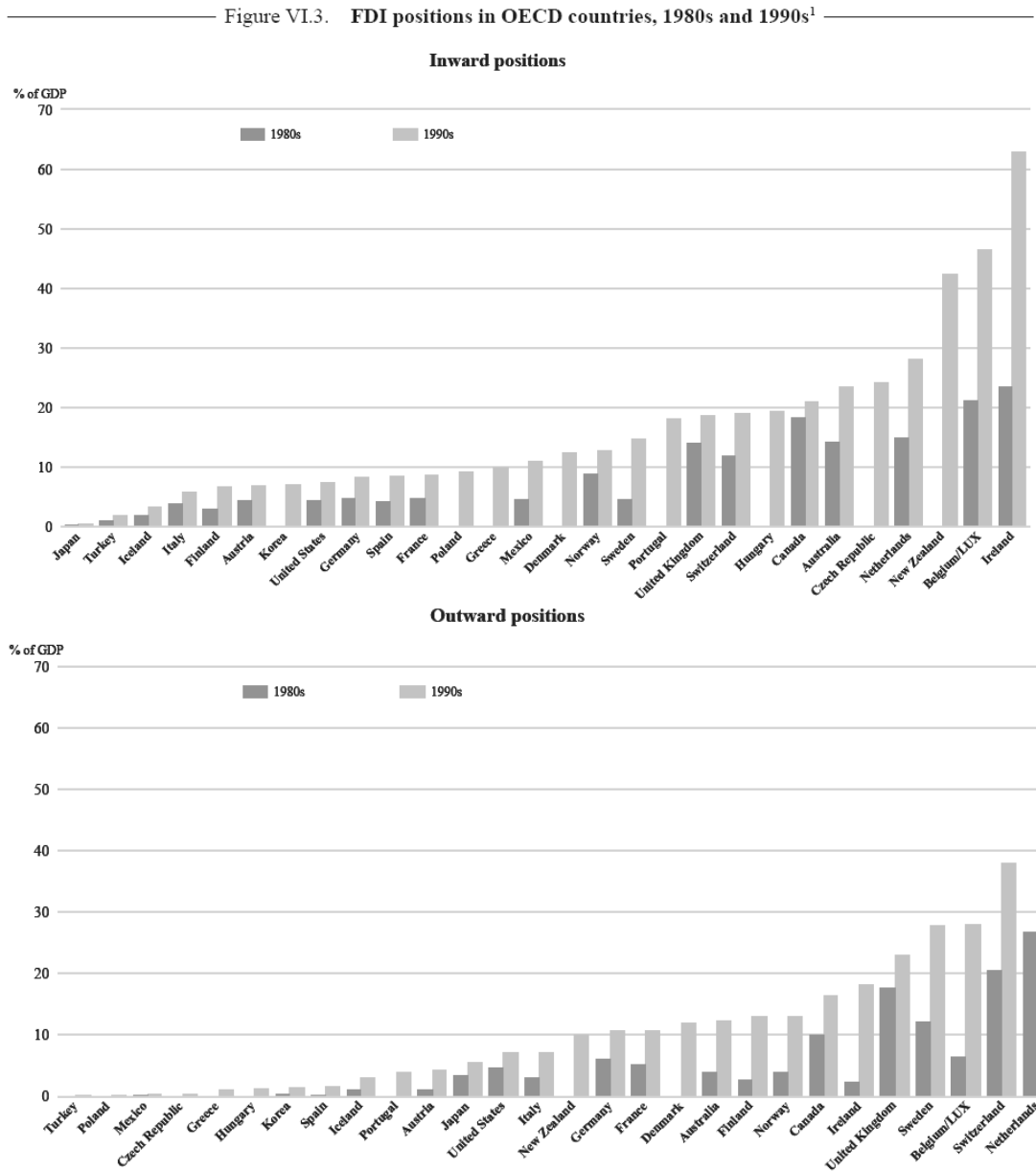
- FDI restrictions went down during the last decades.<sup>†</sup>



1. The indicator ranges from 0 (least restrictive) to 1 (most restrictive).  
Source: OECD.

<sup>†</sup>Source: OECD Economic Outlook 2003, Paris. Chapters 6 to 8.

- Inward & outward FDI increased during the last decades.



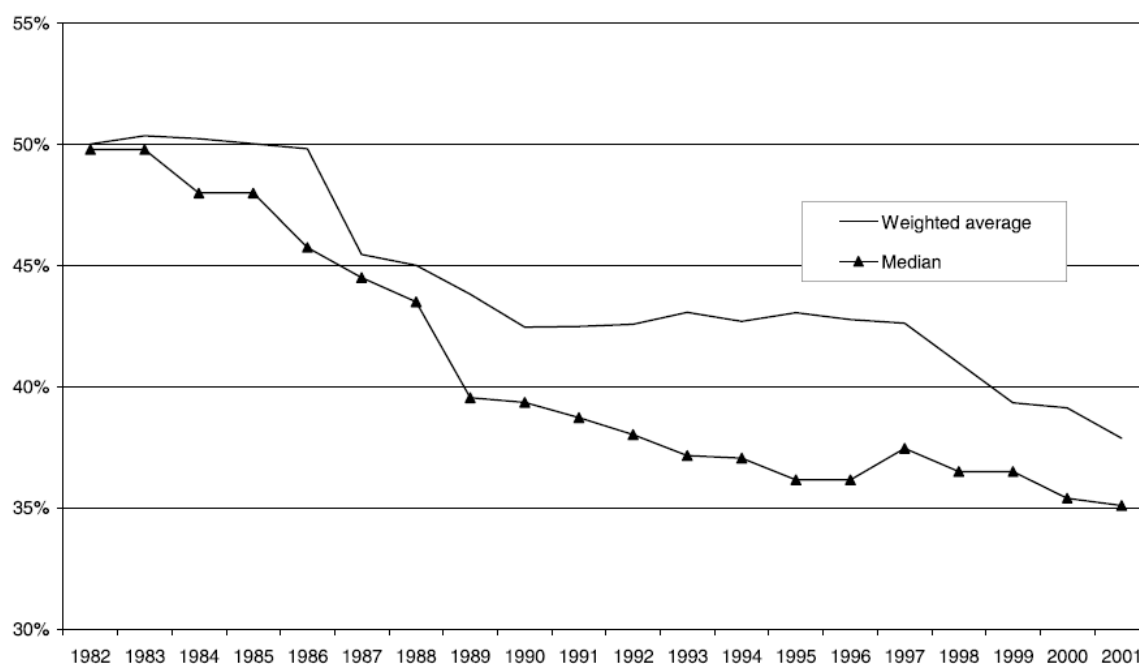
1. Average values over the two periods. For countries where FDI position data are not available, values of bilateral positions reported by their OECD partners were summed up to obtain an approximate measure of multilateral FDI positions.  
Source: OECD.

## 2. If capital mobility has indeed increased, was it accompanied by a Race to the Bottom?

- Stylized facts on the development of taxes on corporate income in the EU and G7 countries. ‡

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MICHAEL DEVEREUX, RACHEL GRIFFITH AND ALEXANDER KLEMM



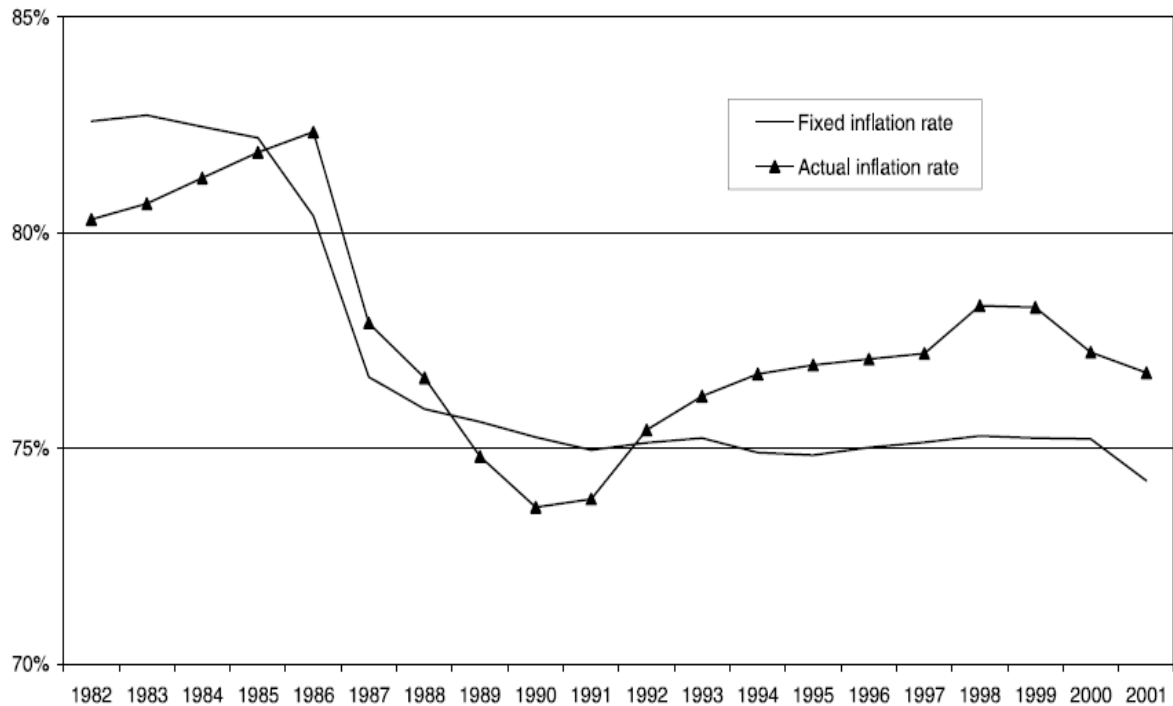
**Figure 2. Average statutory corporate income tax rate**

*Notes:* Statutory tax rate defined as in Figure 1. Average weighted by GDP in US\$.

‡Source: Devereux, M.P., R. Griffith, and A. Klemm, 2002: "Corporate Income Tax Reforms and International Tax Competition." *Economic Policy*, October, 451-495.

- Statutory tax rates fell over the 1980s and 1990s.
- Incentives to shift profits are largely guided by statutory tax rate differentials.
- Profit shifting takes place via intra-company loans, transfer pricing, royalties.
- Does tax competition for the international mobile factor capital lead to a *Race to the Bottom*?
- Policy responses: tax rate harmonization, limited deductibility of interest and royalties, Transfer pricing regulation, e.g. *Arms-Length-Pricing* (what is the market price of intermediate goods?).

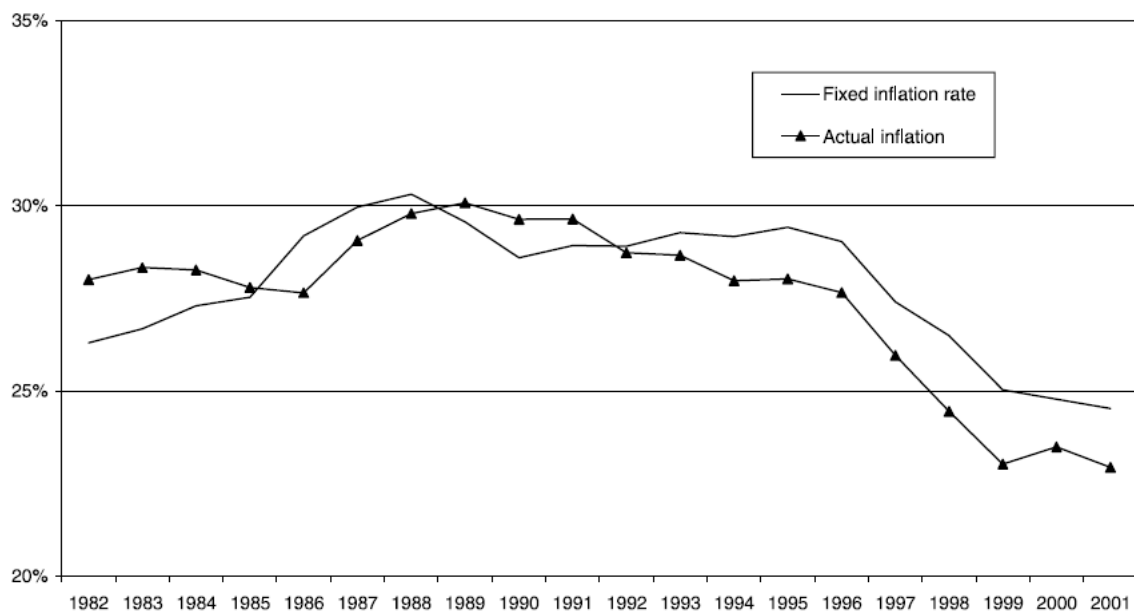
- Tax bases were broadened between the early 1980s and the end of the 1990s.
- Base broadening countervails the reduction in the statutory tax rate.



**Figure 4. Average PDV of depreciation allowance**

*Notes:* Allowances defined as in Figure 3, except for the second series which is based on actual inflation rates (implying static expectations), rather than an assumed fixed rate of 3.5%. Average weighted by GDP in US\$.

- Effective marginal tax rates (EMTR) have remained stable over the 1980s and 1990s.
- The EMTR determines the return the marginal investment has to yield relative to the market interest rate in order to be profitable.



**Figure 6. Average effective marginal tax rates**

*Notes:* Effective marginal tax rate defined as in Figure 5, except for the second series which is based on actual inflation rates (implying static expectations), rather than an assumed fixed rate of 3.5%. Average weighted by GDP in US\$.

- The EMTR is pivotal for the marginal investment decision.
- Net present value (NPV) for the marginal investment:

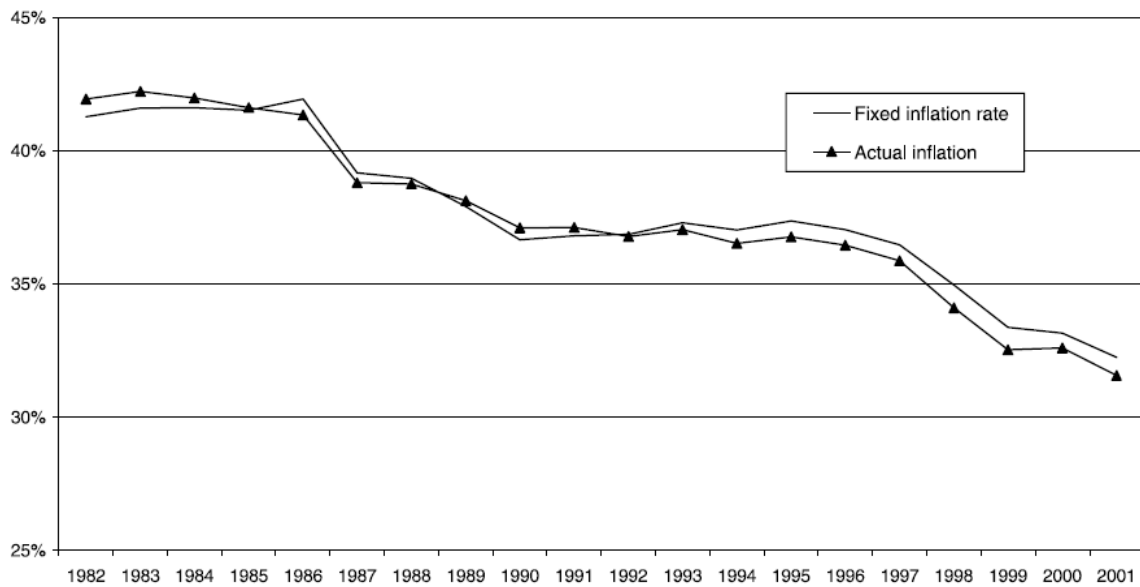
$$NPV = \frac{\pi(1 - \tau) - r(1 - A)}{1 + r} = 0.$$

- $\pi$  = return on the marginal investment  
(pre-tax rate of return required by a corporation)
- $r$  = discount rate / market interest rate  
(after-tax rate of return required by the investor)
- $\tau$  = statutory tax rate
- $A$  = PV of immediate write-off

- Effective marginal tax rate:

$$EMTR = \frac{\pi - r}{\pi}$$

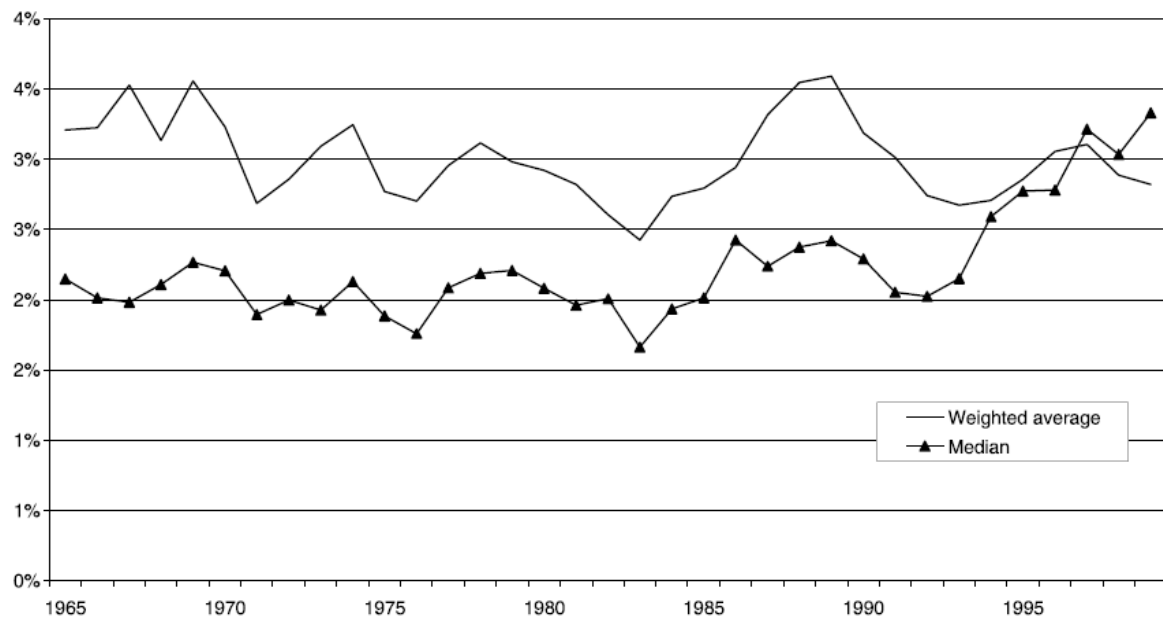
- Effective average tax rates (EATR) have fallen for projects earning positive economic profits.
- The EATR is crucial to the location decision of corporations.



**Figure 8. Average effective average tax rates**

*Notes:* Effective average tax rate defined as in Figure 7, except for the second series which is based on actual inflation rates (implying static expectations), rather than an assumed fixed rate of 3.5%. Average weighted by GDP in US\$.

- Tax revenues on corporate income have remained broadly stable as a proportion of GDP since 1965.

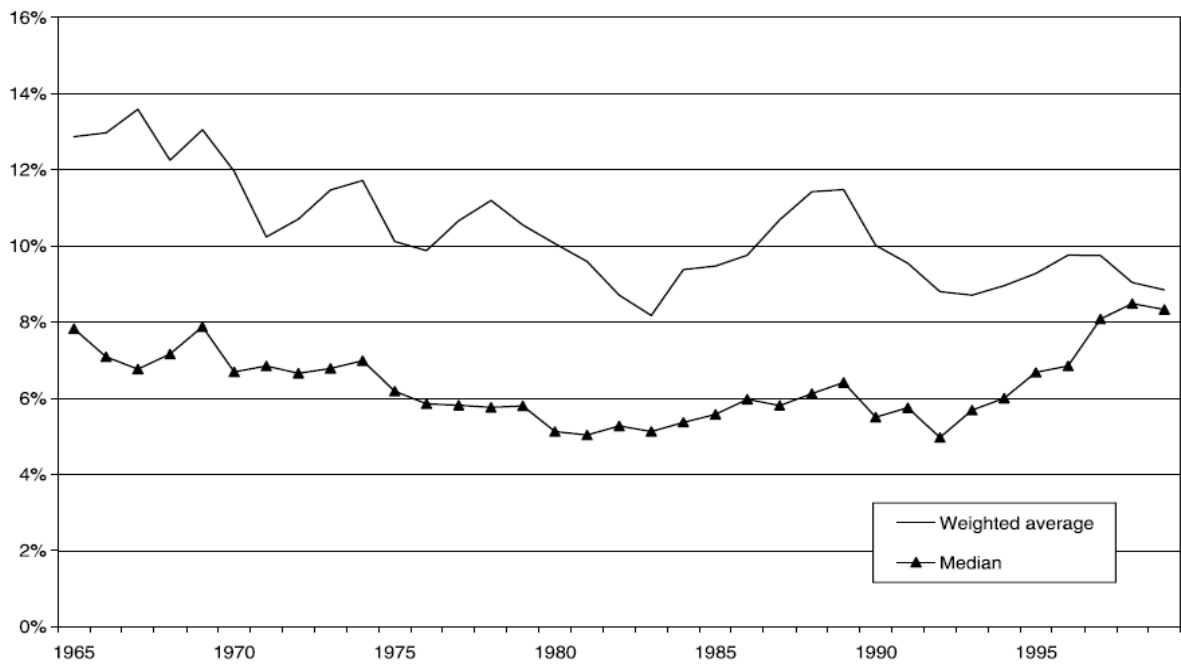


**Figure 12. Corporate income tax revenue (% of GDP)**

*Notes:* Average of the countries shown in Figure 13 weighted by GDP in US\$. All taxes levied on profits and capital gains of corporations are included.

*Source:* OECD.

- Tax revenue on corporate income have declines as a proportion of total tax revenue since 1965.



**Figure 14. Corporate income tax revenue (% of total tax revenue)**

*Notes:* Average of the countries shown in Figure 13 weighted by GDP in US\$. All taxes levied on profits and capital gains of corporations are included.

*Source:* OECD.