BANQUE CENTRALE DU LUXEMBOURG
EUROSYSTEM

Fiscal competition and withholding taxes*

Double taxation, overtaxation, and economic incidence

Giuseppe Pulina

Banque centrale du Luxembourg — ER

Withholding Taxes in International and European Tax Law
University of Luxembourg
April 25-26, 2024

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This presentation

Purpose

- a game-theoretic framework of fiscal competition
- impact of withholding taxes (WHT)

Takeaways

- National tax policies induce international tax base movements
- Taxpayers may face different moving costs
- Countries anticipate these movements when deciding tax policies
- Countries set tax policies to retain and attract tax base
- Current WHT framework seems to encourage tax competition
- Coordination would reduce tax competition but is difficult to achieve
- Partial coordination may have distributional implications

Overview

International tax competition is the subject of extensive research

Key observation: national fiscal policies can induce economic activity to move

Economic integration and digitalization

- Increased international mobility
- Intensify tax competition among jurisdictions

Mobility of tax base (firms, capital, labor, deposits)

- Mobile factors (e.g., multinational corporations, investors)
- Local factors (e.g., local firms, investors)

National tax/fiscal policy makers are involved in a game with one another

- Externalities that transcend country borders

Motivation

A formal description of international fiscal competition can become complicated

Aim is to develop a model

- stripped down version of a far more complex reality
- rich enough to capture some central features of the interaction
- simple enough to yield clear insights

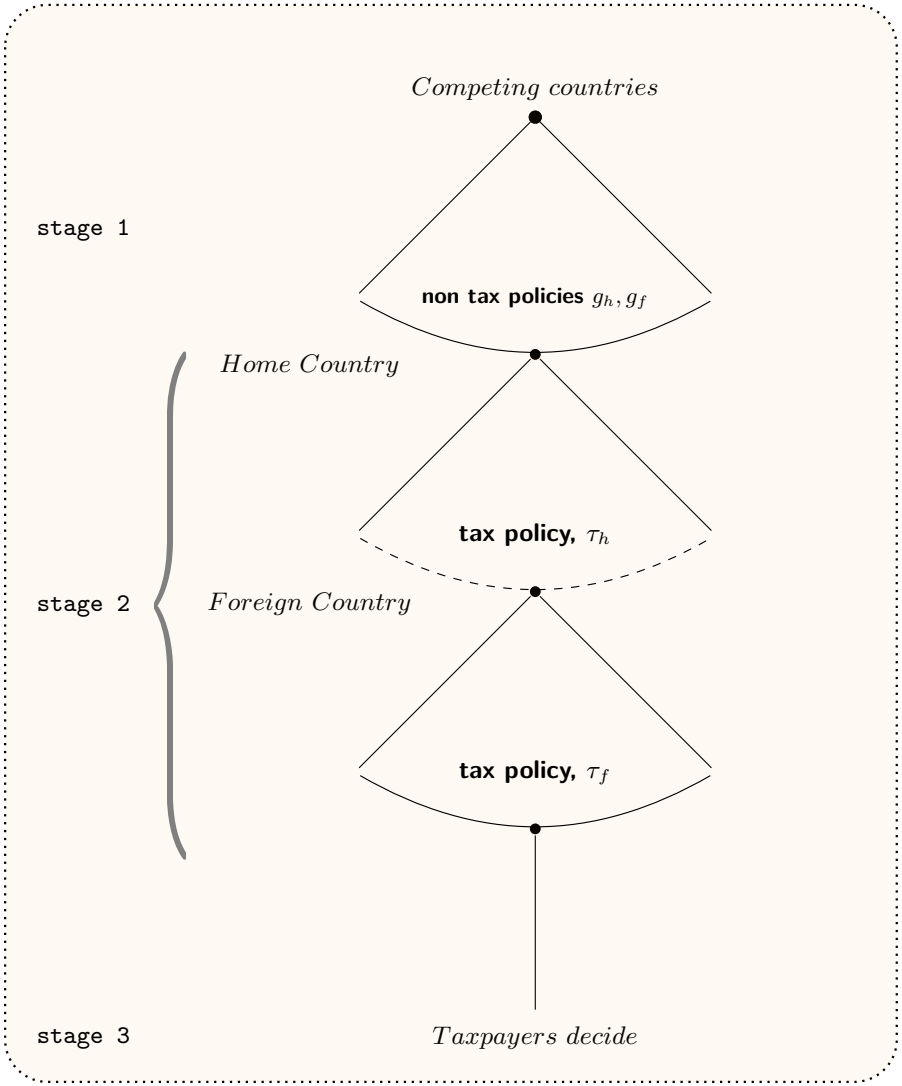
A game-theoretic model

- formal representation of a situation in which agents interact in a setting of strategic interdependence

What are the key ingredients of such a model?

players rules outcomes payoffs

1. Theory - A model of fiscal competition



Extensive-form game [Han, Pieretti, and Pulina, 2023]

- Taxpayers compare net gains at home and abroad

$$\underbrace{u(Home) \gtrless u(Abroad) - Cost}_{\text{Arbitrage condition}}$$

  1. Net gains are affected by home and foreign fiscal policies
  2. Investing abroad is costly
  3. Taxpayers may face different transaction costs $(Cost_j)$

- In each country, the marginal taxpayer

$$\underbrace{u(Home) = u(Abroad) - Cost^*}_{\text{indifference}}$$

- Such that, taxpayers with
  - Low transaction costs $\rightarrow$ abroad $(Cost_j < Cost^*)$
  - High transaction costs do not $(Cost_j > Cost^*)$

- Countries' objective is to maximize welfare

  - selecting tax and maybe also other fiscal policies
  - anticipating the behavioral response of all taxpayers

- **Welfare** $\longrightarrow$ Tax Revenues and citizens/taxpayers well-being

- **Best response**: policy producing the most favorable outcome taking other countries' policies as given

  - Tax policies mutually reinforce one another (Brueckner, 2003)

    $\longrightarrow$ strategic complements

    $\longrightarrow$ If one increases its tax rate, the other does as well

  - Country differences $\rightarrow$ enhance competition and $\neq$ policies

In general, these type of problems do not admit an "optimal" solution

$\rightarrow$ not possible to find two policies that maximize the payoffs of both countries

- **non-cooperative**: uncoordinated policies
  - selecting fiscal policies only considering own interest
  - (Timing) simultaneous decisions (Nash Equilibrium)
  - (Timing) sequential decisions (Stackelberg Equilibrium)
- **cooperative**: coordinated tax policy considering overall interest
  - does not necessarily improve welfare in every country
  - will require a side payment

2. Withholding taxes - Key economic implications

Taxation of interest income

- worldwide (residence) principle
- residents report all int. income independently on where it is earned
- ease double taxation: Tax Credit for any WHT levied at source
  - Limitations apply

WHT target investors' income

- make investment more costly ($\rightarrow$ on foreign investors)
- effects on financial markets ($+$ borrowers and treasury)

Core issue: avoidance/evasion, especially of residence-based tax
(Zucman, 2013, 2014, Alstadsæter et al., 2018, 2019)

$\longrightarrow$ effectiveness of the progress made is subject to debate

$\longrightarrow$ tax competition

Unilateral responses: reduced rates, dual income tax, just domestic WHT

2. Withholding taxes - Incidence and pretax returns

WHT can affect the pretax returns demanded by international investors

$\rightarrow$ investment less profitable $\rightarrow$ compensation $\rightarrow$ higher returns

Pretax rate of return $= f(WHT)$ can inform us about

- the incidence of WHT (treasury vs borrowers)
- whether WHT may be a barrier to international capital

We can identify **two extremes**,

1. Invariant $\longrightarrow \left(\frac{\partial f(WHT)}{\partial WHT} = 0\right)$
   - investors expected to get full tax credit
   - Incidence entirely on the treasury of the investors' country

     $\rightarrow$ (lower tax revenues)
2. One-for-one increase
   - Incidence entirely on the borrower $\rightarrow$ (higher cost of credit)

2. Withholding taxes - Incidence and pretax returns

The **actual incidence** of the WHT

- determined by an arbitrage relationship implied by a competitive financial market
- depends on several other factors influencing capital mobility
  (including transaction costs, varying credit risks, exchange rate)

Previous empirical studies estimated the change in the pretax rate of return required by investors

- Nöhrbaß and Raab [1990]: 1989 German withholding tax
  - yield on German corporate bond has risen by the full amount of the tax
- Eijffinger et al. [1998]: confirms this result for a broader sample of countries
  - none of the tax is borne by international investors
  - negative effects for real investment
- Incidence $\rightarrow$ more on the borrower

2. Withholding taxes - Key economic implications

These empirical results suggest

- high-mobility of portfolio investments (at least) for some investors
- True despite Tax Credit $\rightarrow$ not all pay residence-based taxes on int. income

Why?

- If all investors paid residence-based taxes on interest income, they'd be indifferent towards WHT at source

What's then the **best strategy** for a country?

- WHT on foreign investors are counter productive
- With mobile capital, any source-based tax
  - fully reflected in the domestic gross returns
  - $\rightarrow$ crowds-out real investment
  - $\rightarrow$ falls entirely on domestic factors, reducing their marginal productivity
- If not all investors are mobile $\rightarrow$ optimal to discriminate (Janeba and Peters, 1999)

2. Withholding taxes - Coordination

Uncoordinated interest taxation

- countries imposing WHT at different levels

  - depending on:

class of payer/payee residence of payer location of payee type/value of fin. investment

- even if rational from the perspective of each individual country
- *negative* implications

  $\rightarrow$ significant share of interest income is able to escape taxation

  $\rightarrow$ fosters tax competition to attract mobile savings

There seems to be a consensus that these inefficiencies

- are best addressed at the international level
- require a multilateral tax coordination
- there have been several attempts for a **multilateral approach**:

  e.g., [1974 - OECD], [1989 - EC], [1998 - EC], [2005 - EUSD], [$\cdots$]

2. Withholding taxes - Coordination

Can **Coordination** $\rightarrow$ aggregate gains? Yes, but

- Difficult to achieve $\rightarrow$ countries' differences
  - may require compensation
  - IC if info exchange (Paolini, Pistone, Pulina, and Zagler, 2016)
- Would reasonably involve only a subset of countries (coalition)
  - Third country problem (Huizinga and Nielsen, 1997, 2003)
  - Partial coordination may increase the borrowing costs for the coalition
  - Partial coordination can have distributional implications

$\downarrow$

Additional tax revenue would come from small- less-mobile savers (Haufler, 1999)

- Large-scale highly mobile investors will likely avoid the tax
- also in absence of rate of returns effects

Consider the possibility of a **discriminatory WHT**

- used by many countries (including EU member states)
- at one extreme: a WHT levied just on domestic investors (EC 1998 proposal)

  $\rightarrow$ implies no effects on borrowing costs

  - mobile foreign investors will tie the level of domestic rate of return to the world rate avoiding

  $\rightarrow$ the shifting of the WHT into gross borrowing rates

  $\rightarrow$ the associated efficiency losses from capital market distortions in the domestic jurisdiction

*Even with a **discriminatory WHT** and absence of borrowing costs effects domestic investors could still avoid the WHT*

- IF
  - investment possibilities in a third foreign jurisdiction
  - no mobility (transaction) costs for such investments
- We have evidence that such costs exist
  → *"home bias"* in international portfolio decisions
  → monetary stability (exchange rate risk)
- This indicates heterogeneity in mobility costs
  - those facing higher cost pay WHT → small savers
  - those facing lower cost do not → large investors
  - resulting in distributional effects

Conclusions

1. **Game-theoretic model** of fiscal competition

   - National tax policies induce international tax base movements

   - Taxpayers may face different moving costs

   - Countries anticipate these movements when deciding tax policies

2. **Economic effects of withholding taxes**

   i) Incidence of WHT on domestic borrowers $\rightarrow$ pretax rates of return

   ii) Uncoordinated policies $\rightarrow$ tax competition

   iii) Coordination could be desirable but difficult

   iv) Partial coordination can have distributional effects

giuseppe.pulina@bcl.lu

WHT and financial markets

- Foreign WHT, t_w
- Domestic interest income tax (worldwide principle), t

  - foreign tax credit (limitations apply)

Arbitrage condition under competitive fin. markets + risk neutral

$$\overbrace{Pr(TaxCredit)(1-t)r + (1-Pr(TaxCredit))r}^{\text{(Expected) net-of-tax domestic interest expenses of financing}}$$

$$=$$

$$\underbrace{Pr(TaxCredit)(1-t)r^* + (1-Pr(TaxCredit))(1-t_w)r^*}_{\text{(Expected) net-of-tax interest proceeds}}$$

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Macroeconomic implications of interest withholding taxes

Macroeconomic implications $\rightarrow$ if WHT affect main national rates of return

This depends on

- possibility of foreign tax credit
- which country's investors are dominant in int. financial markets
- country size

WHT may be irrelevant, if they

- drive away foreign holders of a country debt
- induce offshoring domestic credit activity

Restricted access to international financial markets:

- Domestic borrowers pay higher yields
- Heterogeneity in costs: more likely small borrowers

Macroeconomic implications of interest withholding taxes

Generally, a rise in the WHT

- Raises the pretax return on domestic assets
- Borrowers who rely on domestic market will face higher cost
- Higher rates discourage real investment demand

  $\rightarrow$ negative long-run implication for economic activity

If a country is large enough to affect international rates of return (Goulder, 1990)

- Similar effects as above $\rightarrow$ higher pretax rate of return
- but,

  - financial market power

  - higher rates stimulate savings

  $\rightarrow$ positive welfare implications
- However, if other countries react by raising their WHT in response

  $\rightarrow$ negative combined effect on aggregate welfare

Absence of interest rate effects - Arbitrage condition

Consider an investor within the coalition: comparing the returns of investing in the coalition, adjusted for WHT, against those of tax-free investments in the global market, adjusted for transaction costs.

Arbitrage opportunity for investing \$

$$\underbrace{Return(1-WHT)\$}_{\text{Net return from domestic investment}} \gtrless \overbrace{(Return-Cost)\$}^{\text{Tax-free investment in the foreign market}}$$

$$\downarrow$$

$$\underbrace{Return\ WHT\ \$}_{\text{witholding tax payment}} = \overbrace{Cost^*\ \$}^{\text{personal transaction cost}}$$

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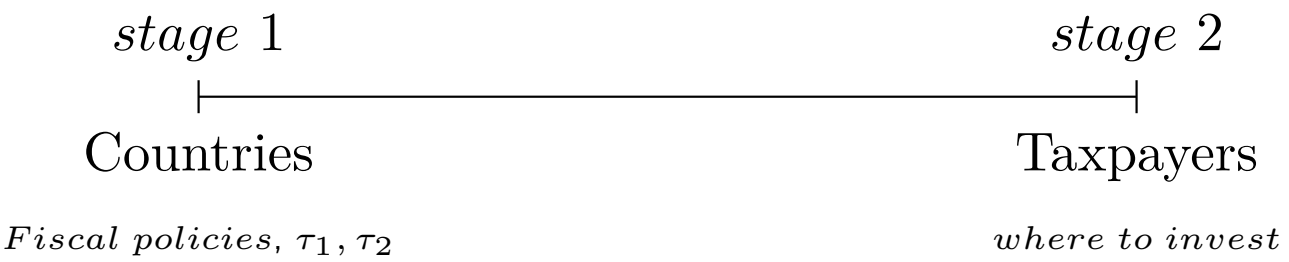
Timing - simultaneous

The timing of this game can be represented as follows:



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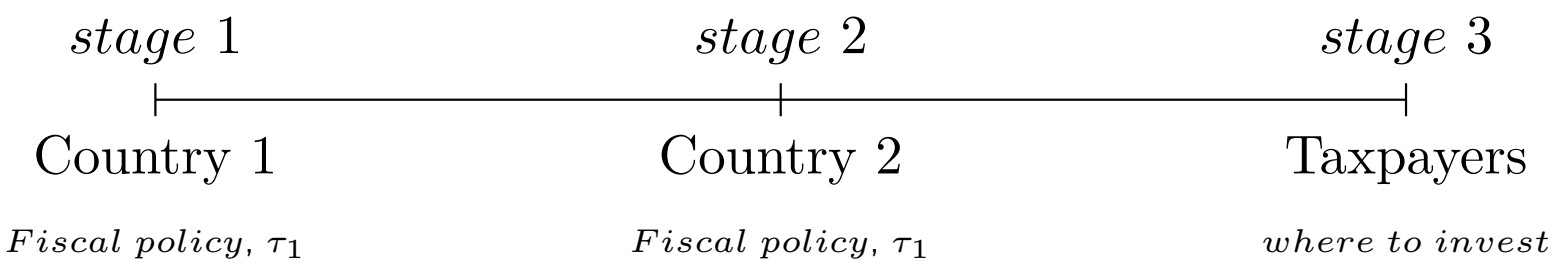
Timing - sequential

The timing of this game can be represented as follows:



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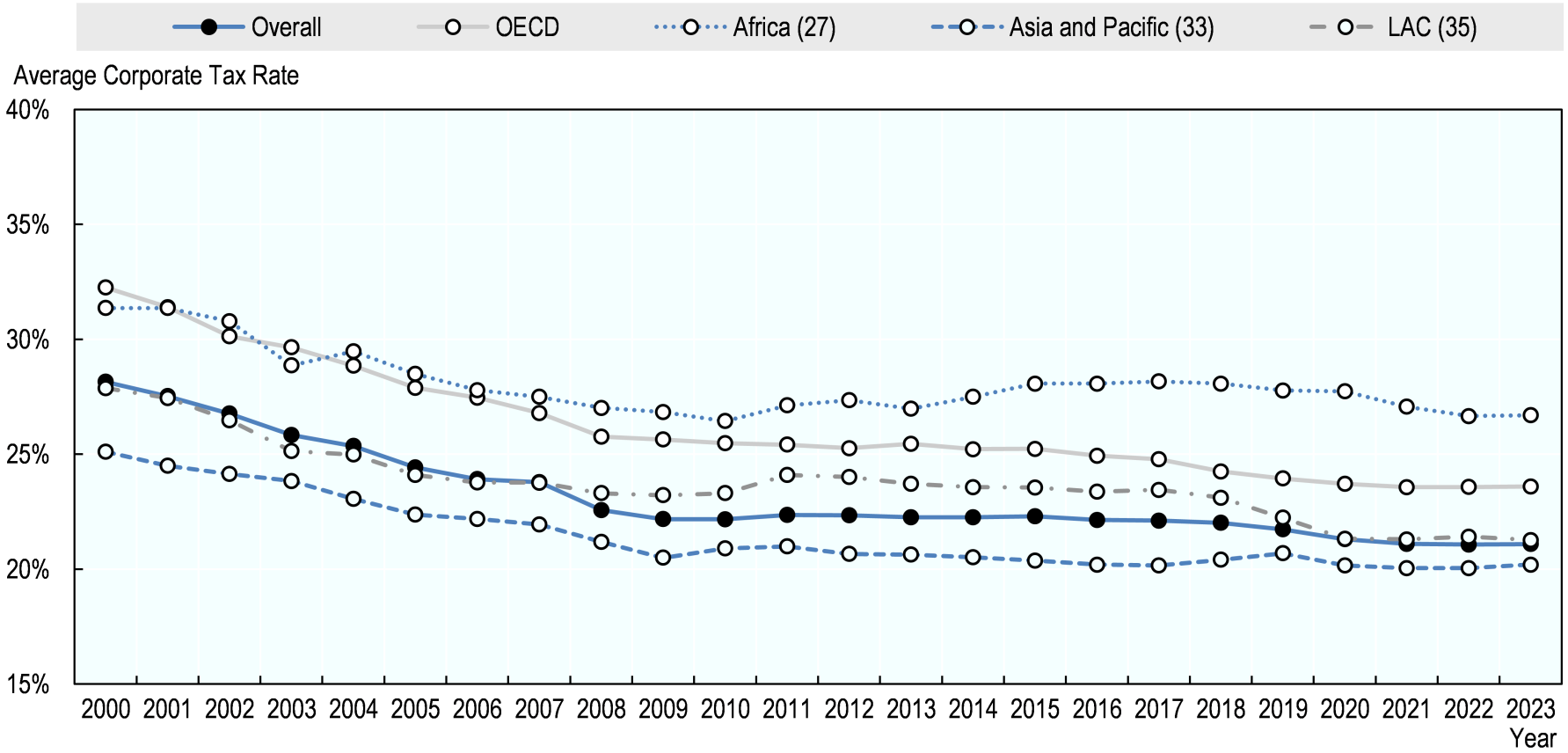
Average statutory corporate income tax rates by region



Source: OECD Tax Dataset

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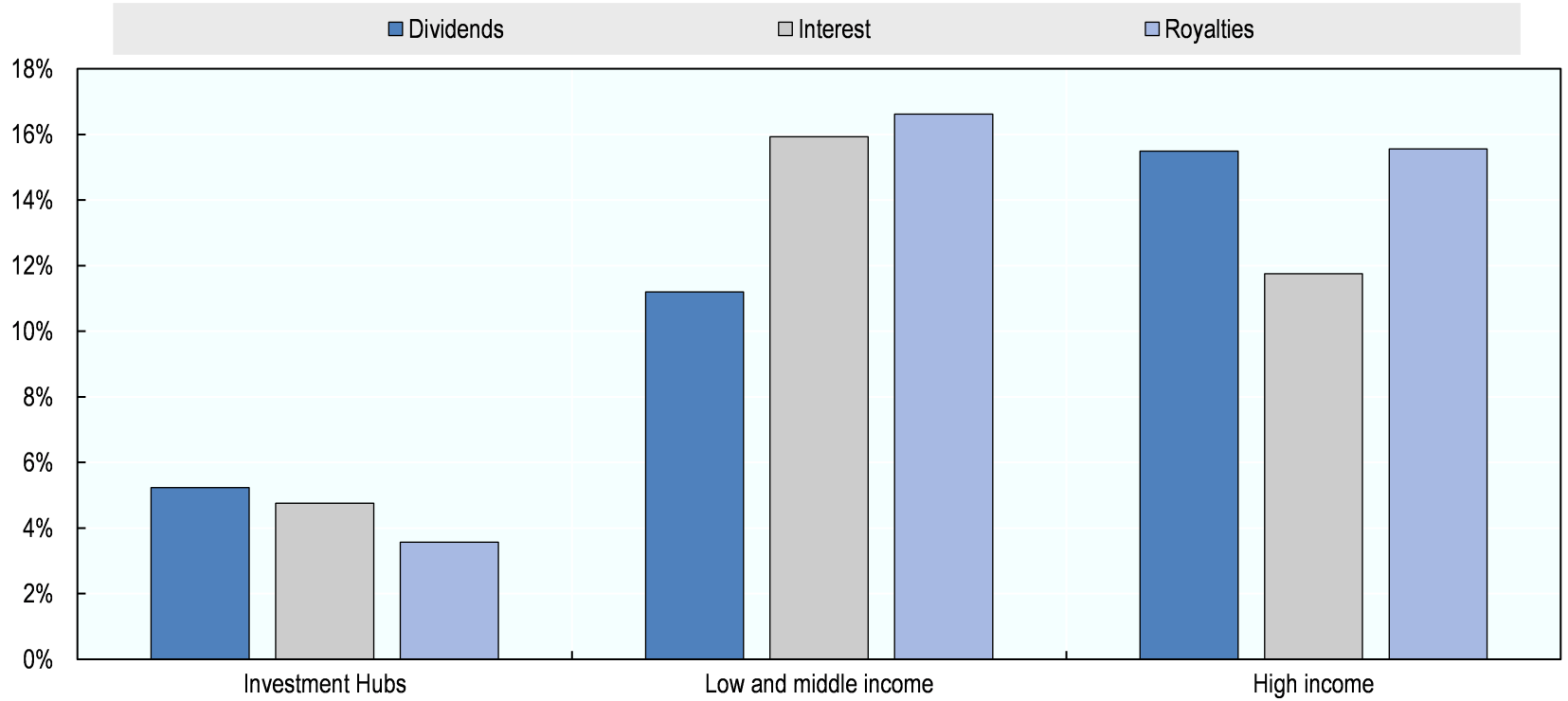
Average withholding tax rates



Source: OECD Withholding Tax Rates

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Third country problem

Consider the following **non-cooperative scenario** involving 3 different countries

- 2 countries are "close", and set WHT at different rates $(WHT_1 > WHT_2 > 0)$
- A third country ("far away") does not $(WHT_3 = 0)$
- Investors in 1 can place deposits in any countries but face different costs
- Where deposits go will be determined by arbitrage considerations (WHT, rate of returns, fees, transaction costs)

"**Coordination**" between the 2 "close" countries has ambiguous consequences

- A higher WHT for country 2
- Induce some investors to invest @home rather than abroad $\rightarrow$ good for 1
- Those still investing in 2 will pay higher tax $\rightarrow$ bad for 1
- Induce some others who invested in 2 to move to 3 $\rightarrow$ bad for both 1 and 2

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