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**Global linkages, domestic capacity and  
adoption**

***What shapes the distribution of AI gains across  
countries?***

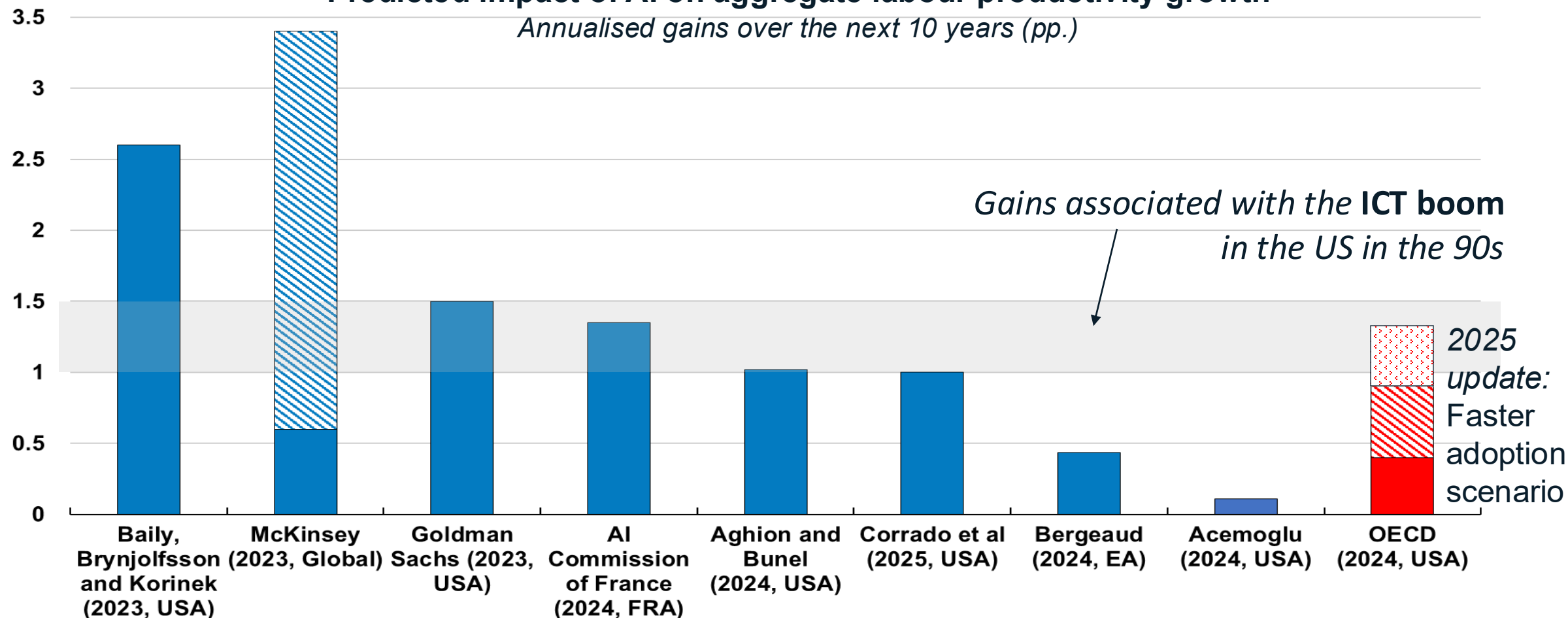
**PIIE Event**

**October 6**

# Debate on the magnitude of the expected productivity gains from AI

## Predicted impact of AI on aggregate labour productivity growth

*Annualised gains over the next 10 years (pp.)*



Source: Updated from Filippucci, Gal and Schief (2024)

# Our micro-to-macro approach

embedded in a global multi-sector macro model

## I. Sector-level productivity gains from AI

**Micro-level  
productivity gains of AI**

x

**Sectoral AI exposure**

x

**AI adoption scenarios  
over 10 years**

## II. Global macro-sector model

...featuring a **global  
production network** with

- ✓ trade in **goods & services**
  - ✓ intermediate & final

- ✓ **76 countries x 45 sectors**

...augmented by

- ✓ **international knowledge  
spillovers**

## Aggregate gains from AI

**Welfare**  
Per capita real income

...decomposed into

- Domestic contribution
- **Foreign contribution**
- **Allocation effect**

Note: Step I. is inspired by Acemoglu (2024), adapted to our sector-level framework which has also been applied in Filippucci et al. (2024b, 2025). Step II. and the decomposition of per capita real income builds on the multi-sector model developed in Cakmaklı et al. (2021) and Baqaee and Farhi (2024).



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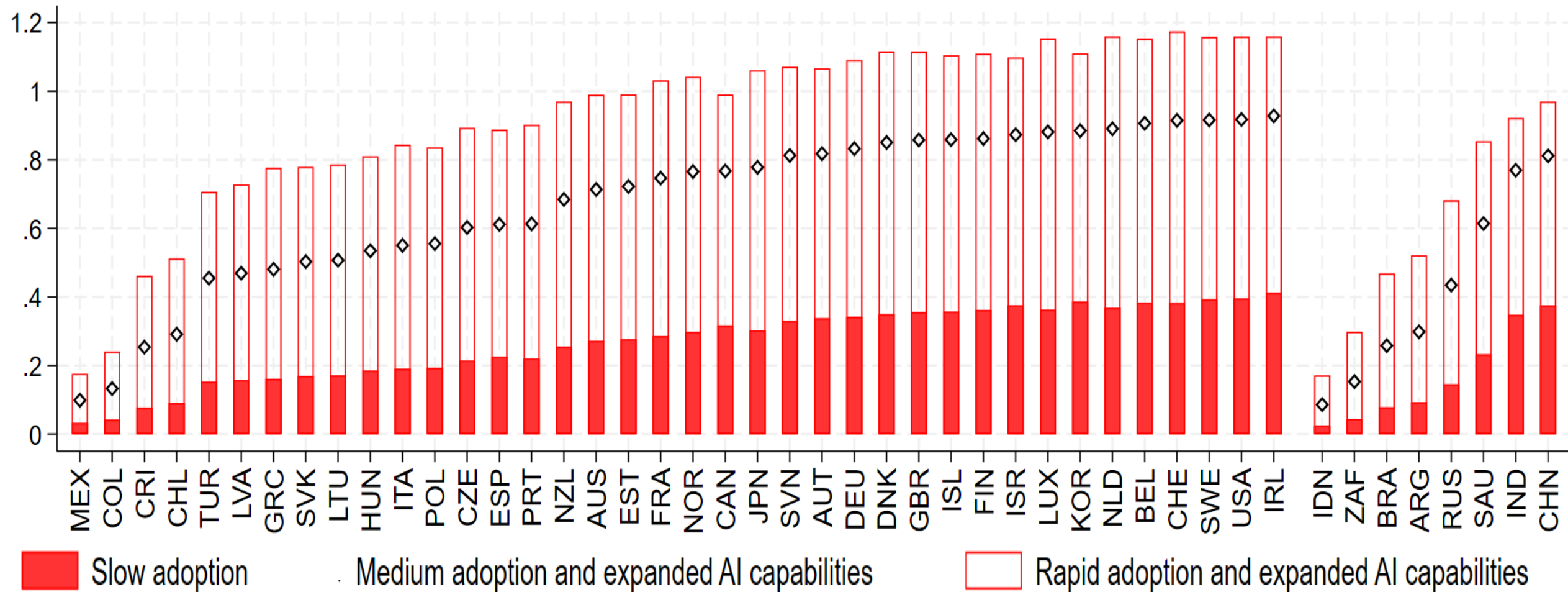
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# AI's macroeconomic gains will vary widely across countries

with adoption speed as a main driver



Note: This figure shows per capita real income gains from AI depending on the speed of AI adoption and on underlying AI capabilities.



# The role of global linkages in distributing gains from AI

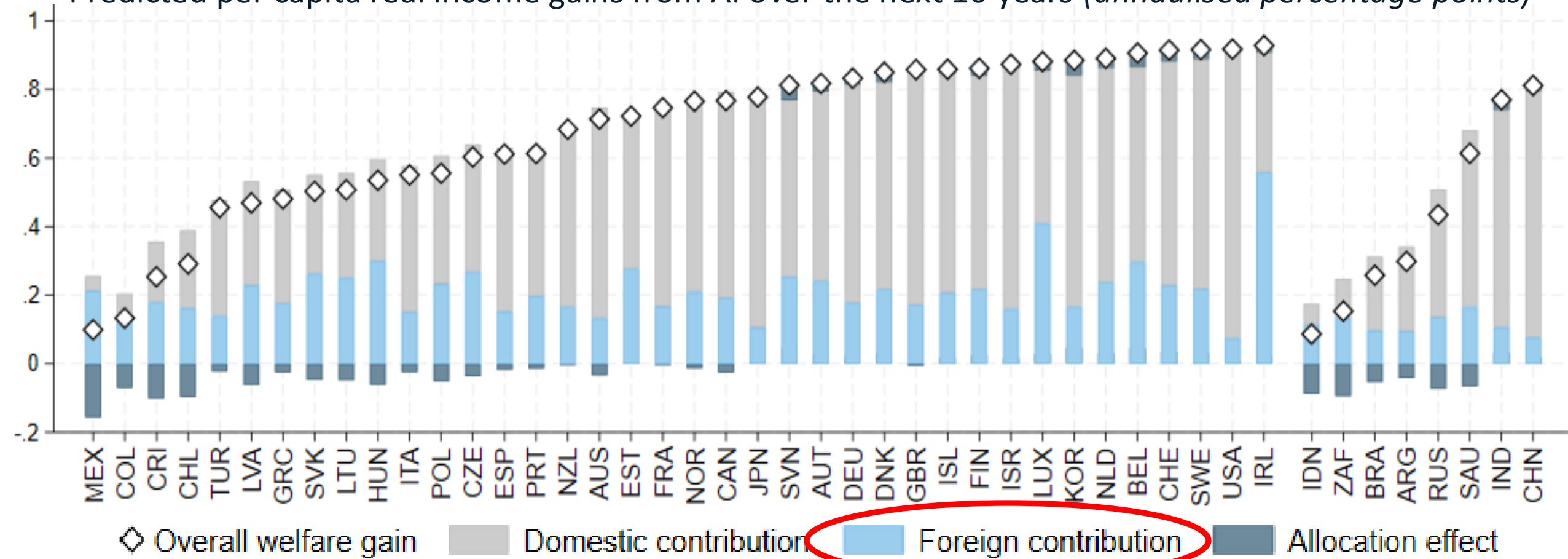
## The main channels

| <b><i>“Import channels”</i></b>                                                                                                                                                                                                       | <b><i>“Export channel”</i></b>                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Channel 1) Benefitting from <b><i>cheaper intermediate and final goods</i></b> from abroad                                                        | (Channel 2) Changes in <b><i>competitiveness of exports</i></b> , for instance when specialising in heavily <i>AI exposed</i> sectors (finance, ICT services, etc.)         |
| (Channel 3) <b><i>International knowledge spillovers</i></b> leading to faster AI adoption, if importing from <b><i>leading AI adopters</i></b>  |   |



# Channel 1: Foreign productivity gains from AI benefit incomes through cheaper import prices

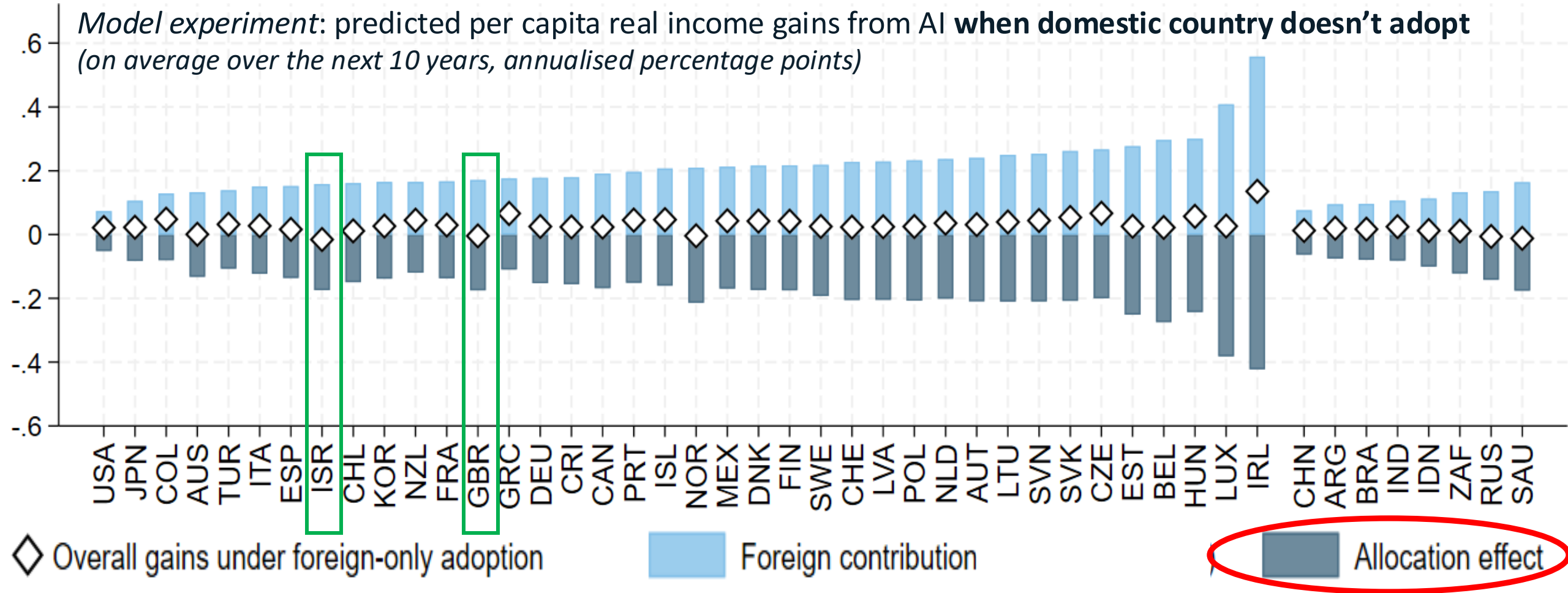
Predicted per capita real income gains from AI over the next 10 years (*annualised percentage points*)



Note: The figure decomposes overall welfare gains into 3 components: “Domestic contribution” captures AI gains accruing to domestic demand from the price declines of domestically produced goods & services; “Foreign contribution” captures gains accruing to domestic demand from reduced import prices; “Allocation effect” includes gains or losses coming from changing global demand for domestically produced goods & services.

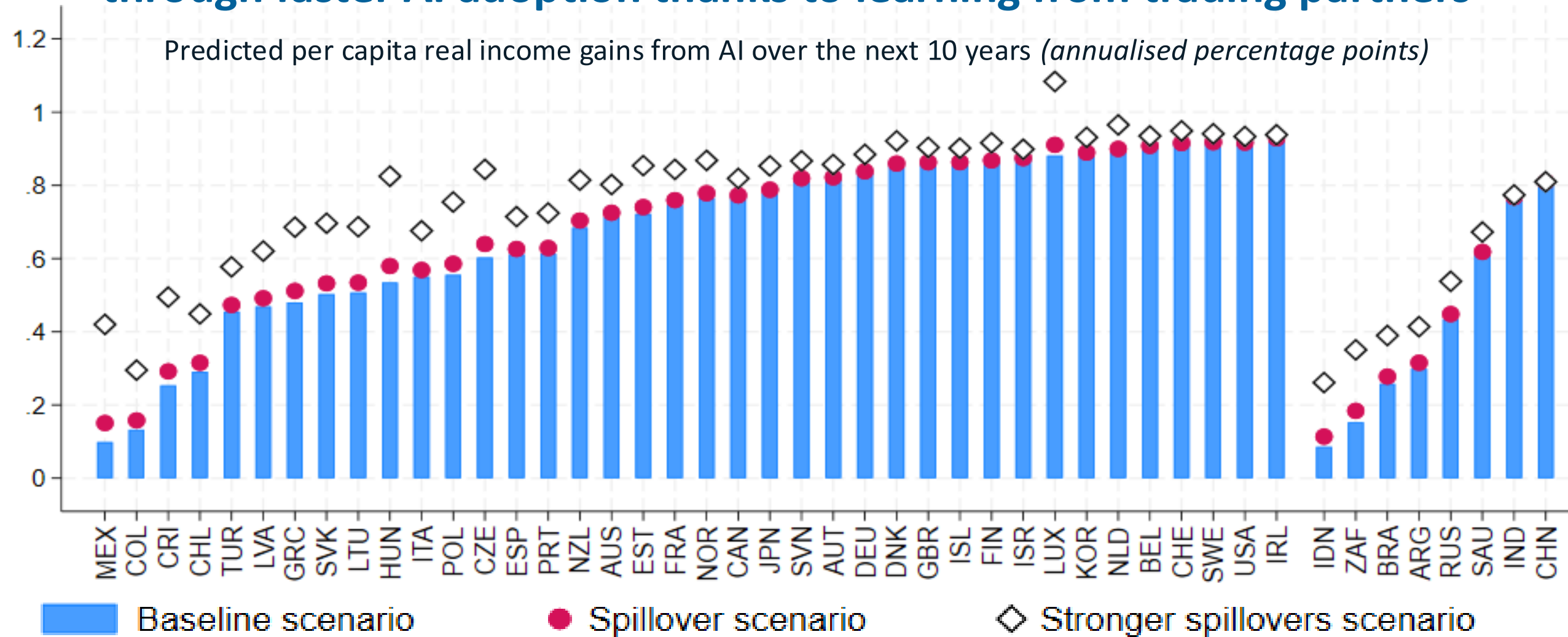
## Channel 2: But without domestic AI adoption there is a loss in competitiveness which offsets the purely imported gains

Model experiment: predicted per capita real income gains from AI when domestic country doesn't adopt (on average over the next 10 years, annualised percentage points)



Note: This graph breaks down welfare gains when a country does not adopt AI but others do. The “Foreign contribution” is the same under global adoption (previous slide). The “Allocation effect” shows losses in global sales and export prices in case a country does not adopt AI domestically.

## Channel 3: Knowledge spillovers can further boost real-income gains through faster AI adoption thanks to learning from trading partners



Note: the standard spillover scenario builds on previous literature on innovation (patents), and the stronger one uses an illustrative alternative which leads to about six times as strong spillovers.

# Access to leading AI models and infrastructure is a pre-requisite but this is not given.

