

Migration, Innovation, and Growth: Lessons for Middle Income Countries

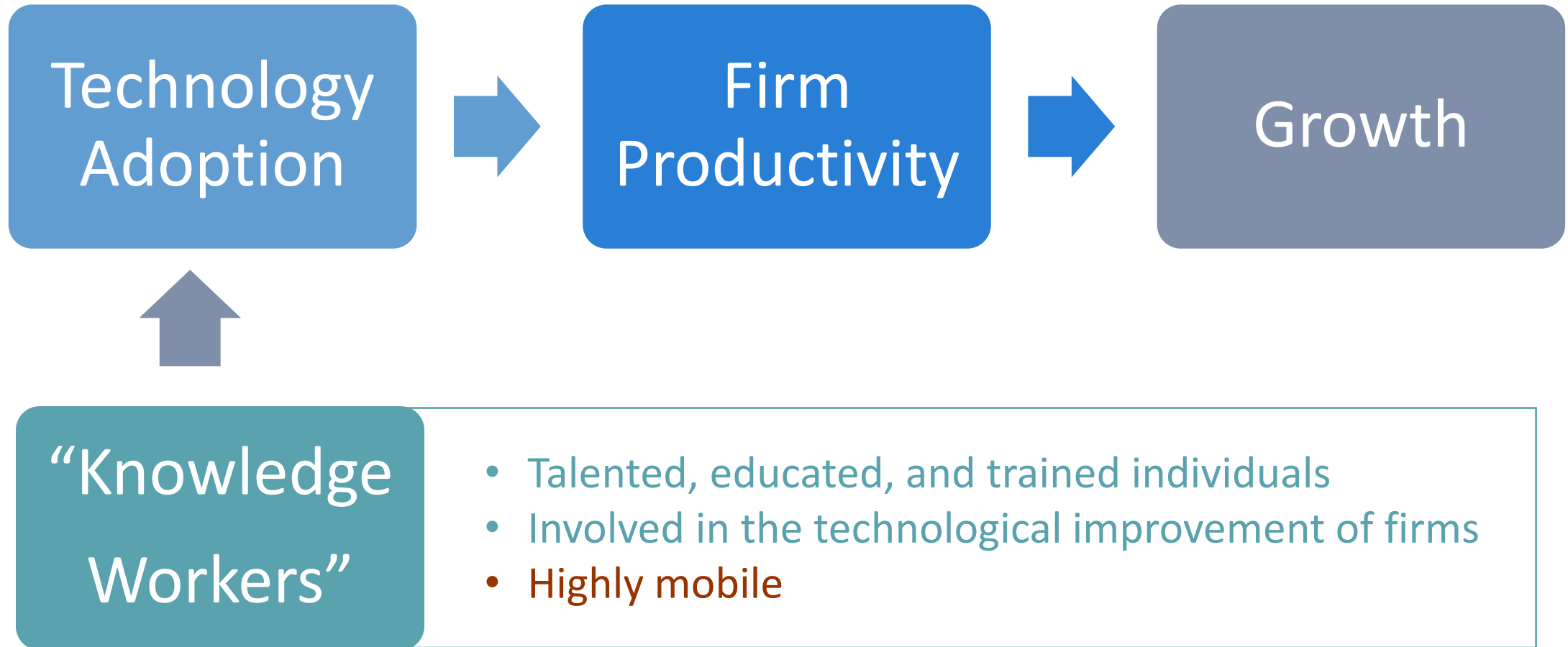
Marta Prato, Bocconi University

World Bank WDR2024 Seminar Series, November 29th 2023

Growth in Middle Income Countries

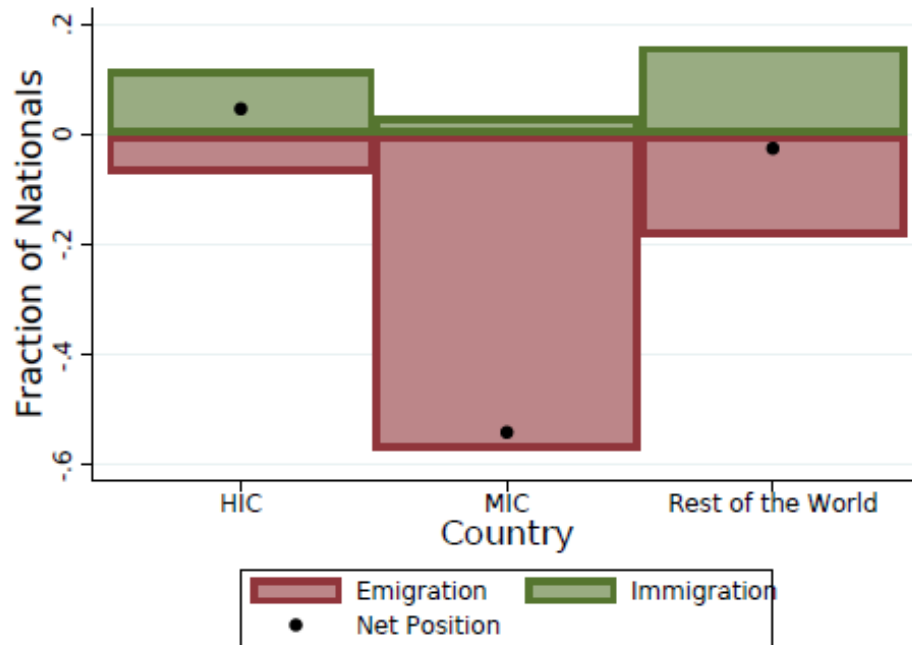


Growth in Middle Income Countries



Brain Drain in Middle Income Countries

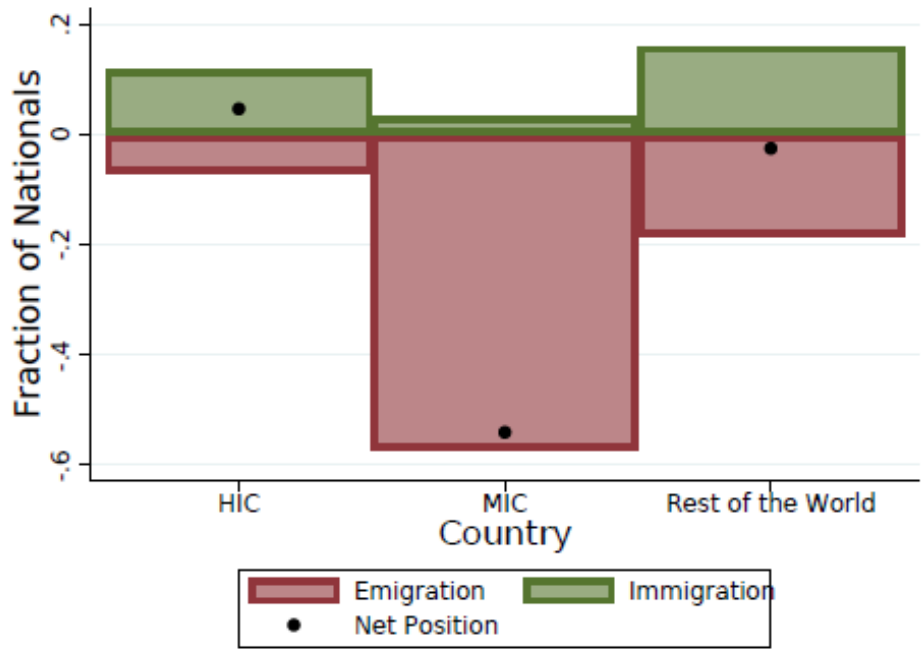
Inventors' Brain Drain:
Middle vs High Income Countries



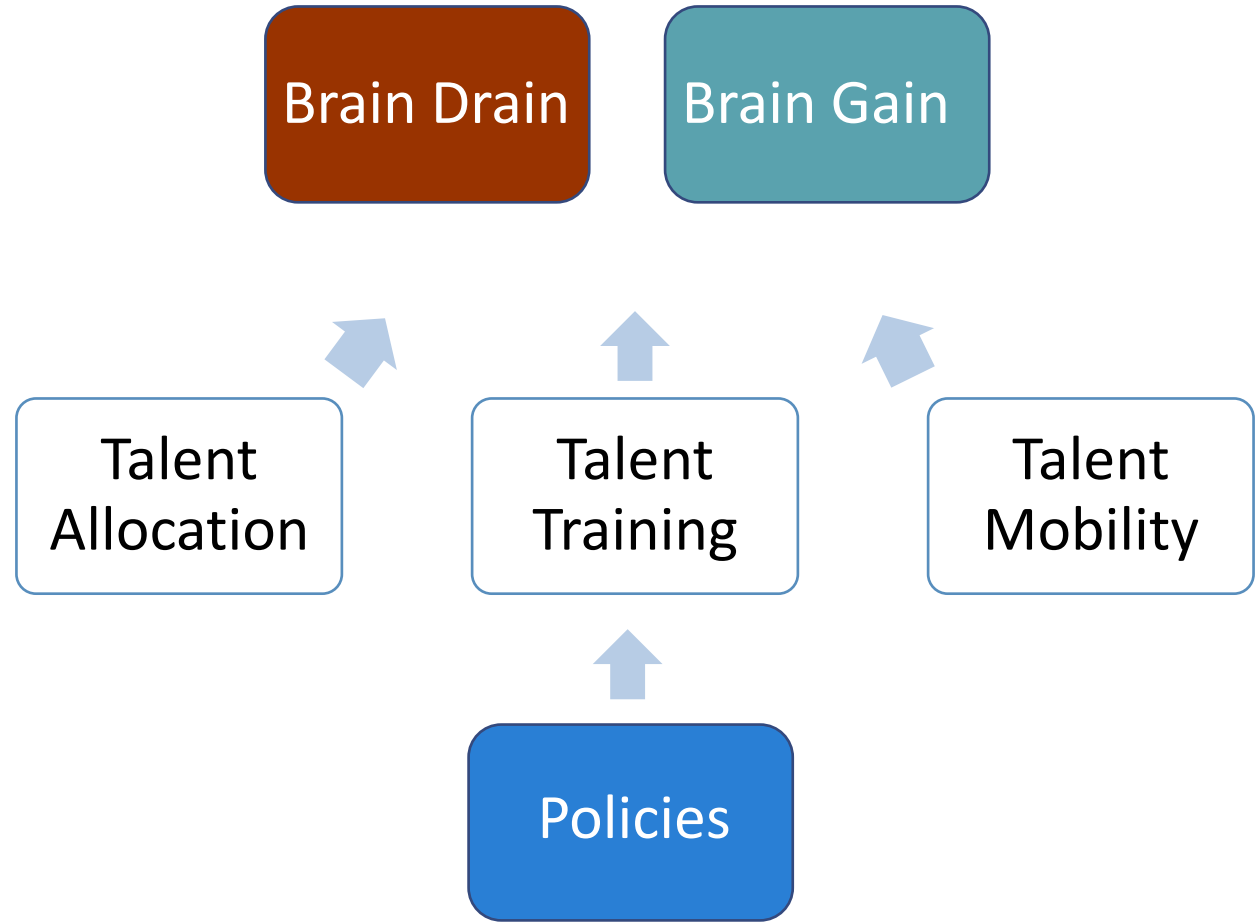
Data Source: WIPO 2001-2010

Brain Drain in Middle Income Countries

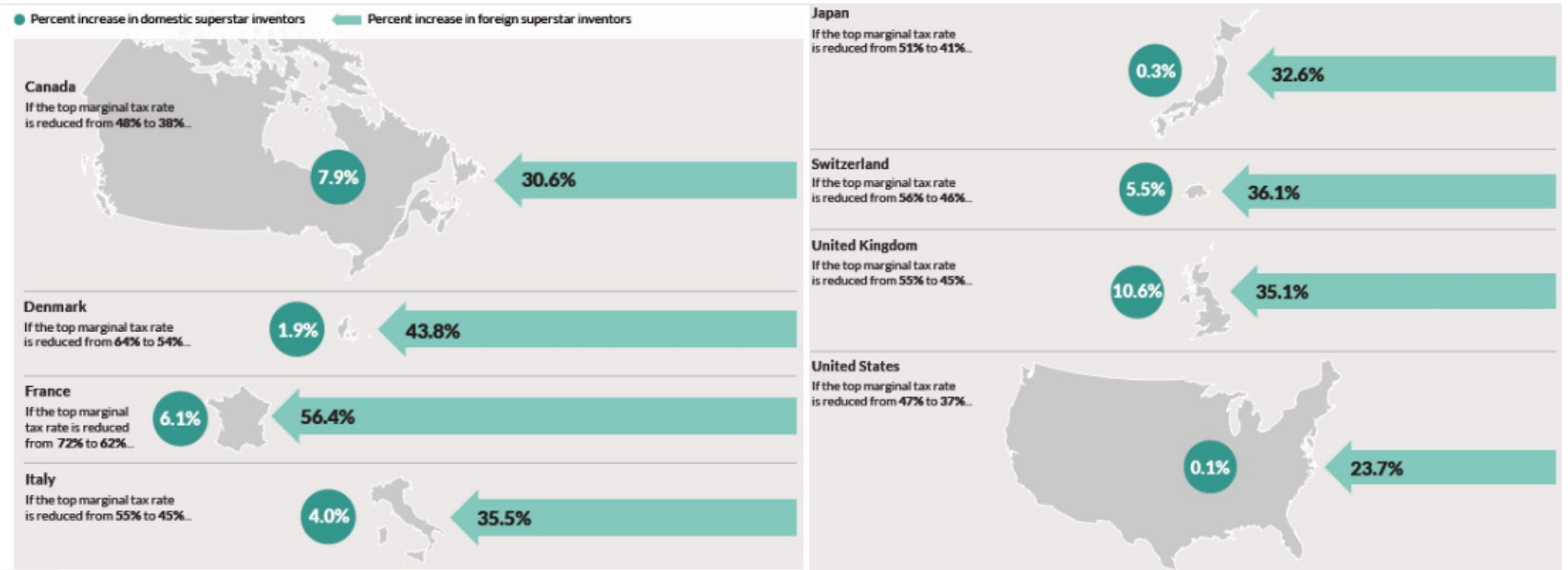
Inventors' Brain Drain:
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Data Source: WIPO 2001-2010



Fact 1: R&D workers are highly mobile and their mobility decisions respond to monetary incentives.

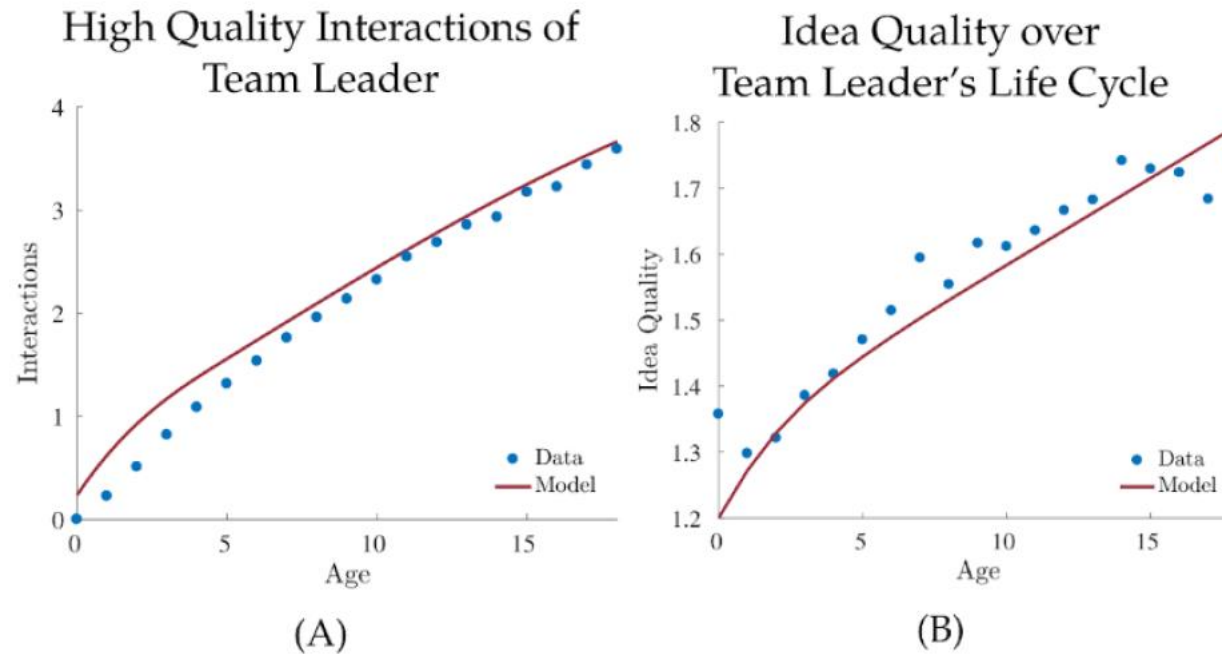


Source: Akcigit, Baslandze, Stantcheva (2016)

Takeaway: Monetary incentives foster the mobility of individuals and can facilitate the emergence of innovation hubs.

Fact 2: Knowledge workers work in teams and learn from interactions with others in the economy.

Figure 2: Interactions and Idea Quality over the Life Cycle

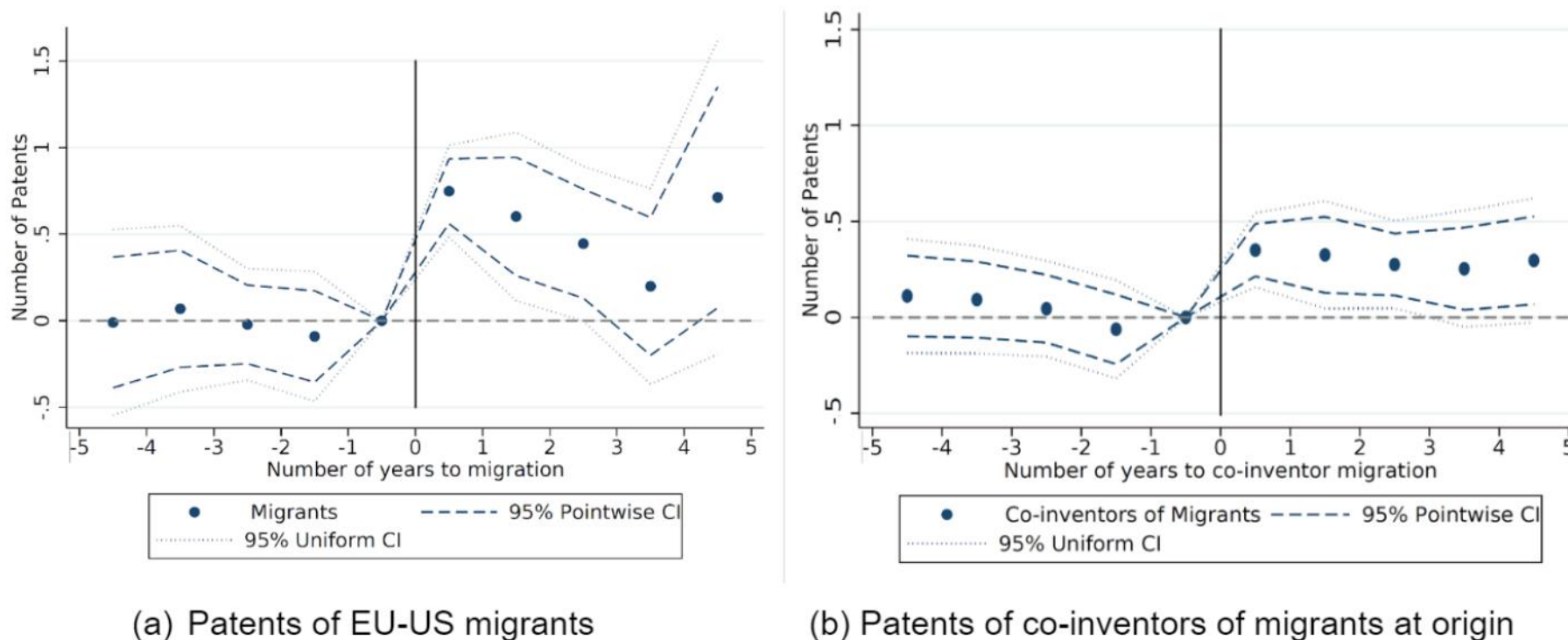


Source: Akcigit, Caicedo, Miguelez, Stantcheva (2018). Panel (A) represents the high-quality interactions of a team leader as a function of his age (age 0 is the first year in the patent data). Panel (B) represents the de-trended idea quality as a function of team leader's age.

Takeaway: Facilitating interactions boosts the productivity of knowledge workers.

Fact 3. The **migration** of knowledge workers is associated with an increase in the productivity of both migrants and their collaborators in the country of origin, who benefit from the **knowledge spillovers** channeled by the emigrants.

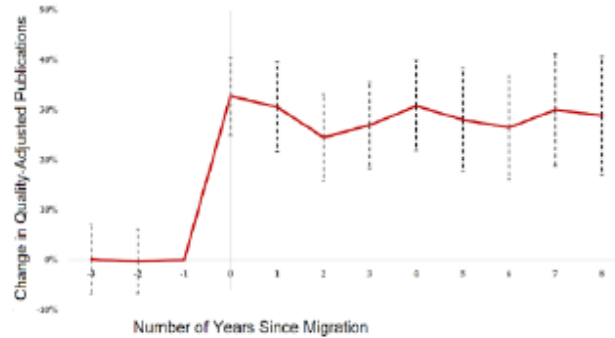
Figure 3: Patents of migrants and their collaborators in the origin country.



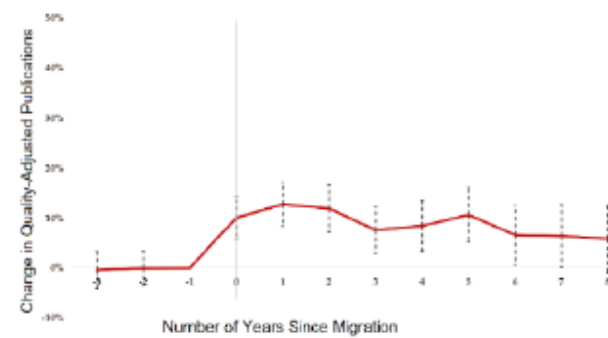
Source: Prato (2022). This figure illustrates the change in number of patent applications per years before and after migration for migrants along the EU-US corridor, in panel (a), and for their collaborators in the origin country, in panel (b).

Fact 3 ct'd. Migration, productivity, and knowledge spillovers.

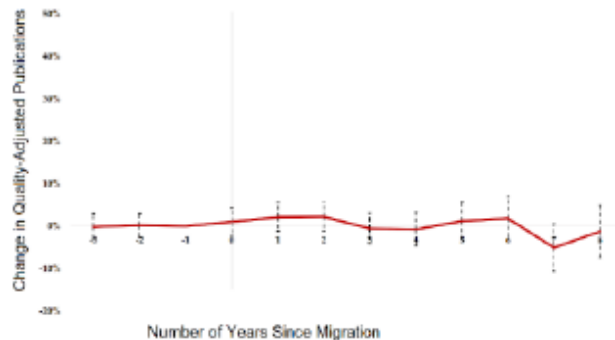
Figure 4: Publications of Turkish migrant academics and their collaborators in Turkey.



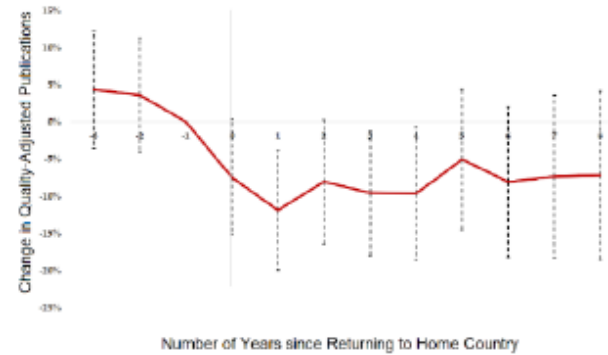
(a) Publications of Turkish migrants academics



(b) Publications of collaborators of migrants at origin if they continue working with the migrant



(c) Publications of collaborators of migrants at the origin if they stop working with the migrant



(d) Publications of migrants after returning to their origin country

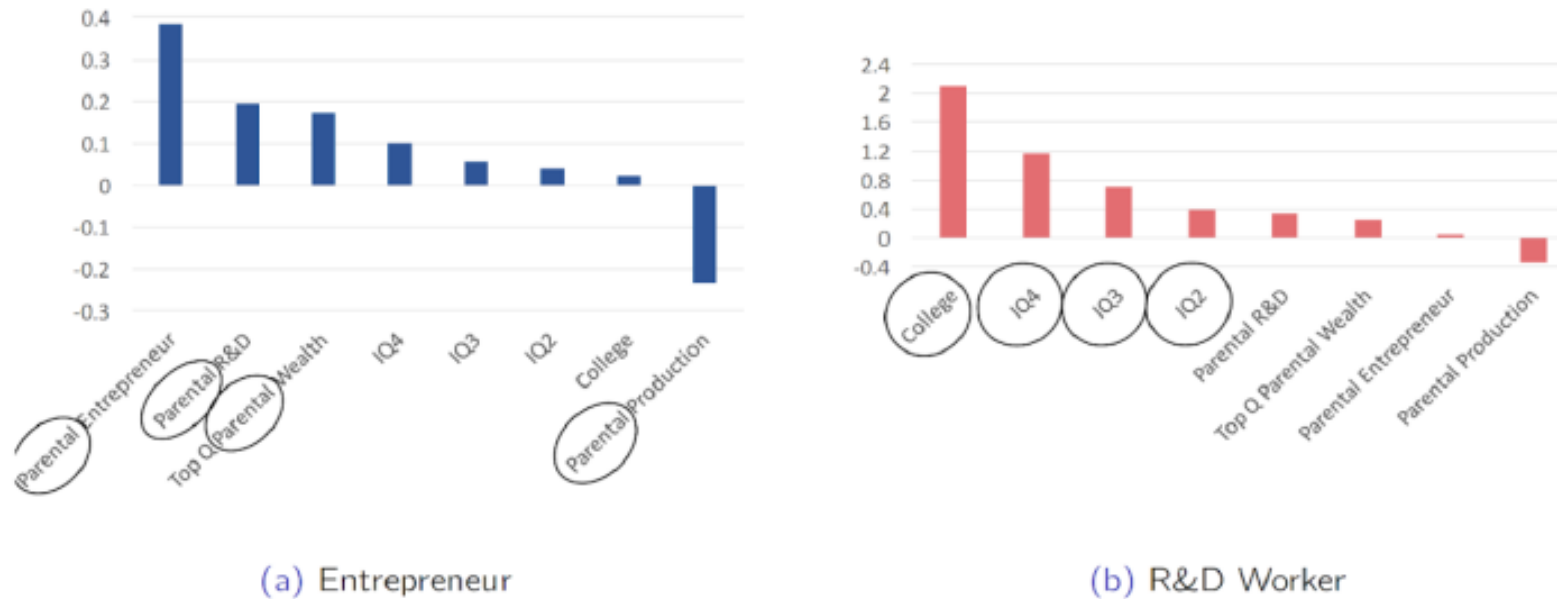
Source: Akcigit et al. (2023).

Takeaway: Facilitating the migration of knowledge workers fosters growth through the diffusion of knowledge.

Fact 4. The improvement and adoption of technology is the result of the joint effort of individuals who work in firms, carry out different tasks, and have different characteristics.

- **R&D workers:** development or adoption of better technology, products, processes...
- **Entrepreneurs:** owners, founders, in charge of expansion, financing, hiring ...

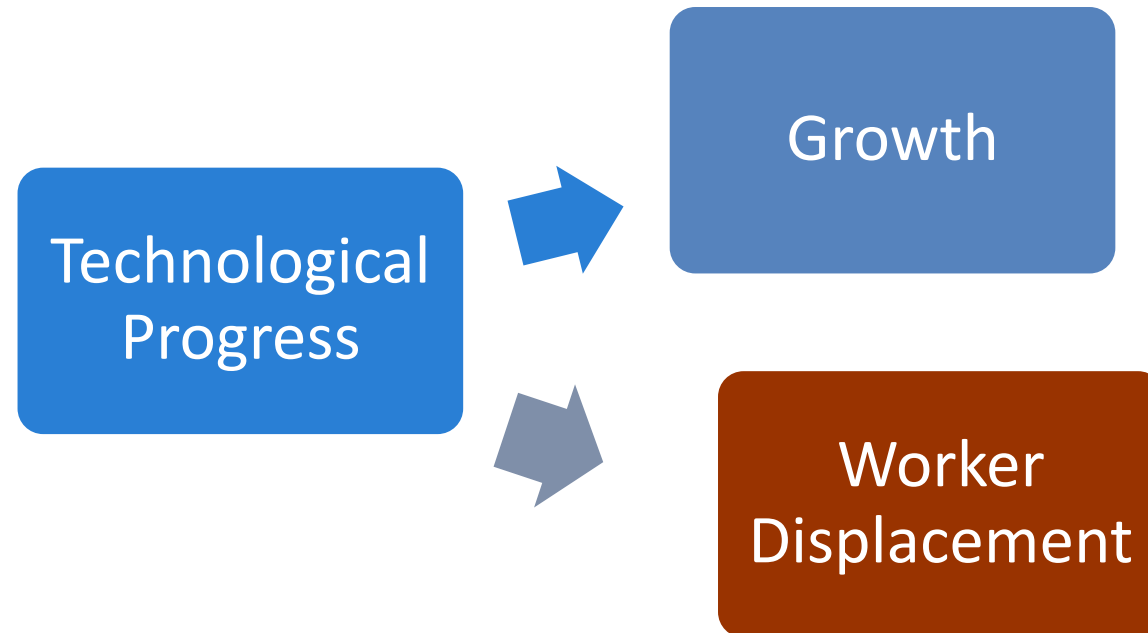
Figure 5: Characteristics of Entrepreneurs and R&D Workers



Source: Akcigit, Alp, Pearce, Prato (2022).

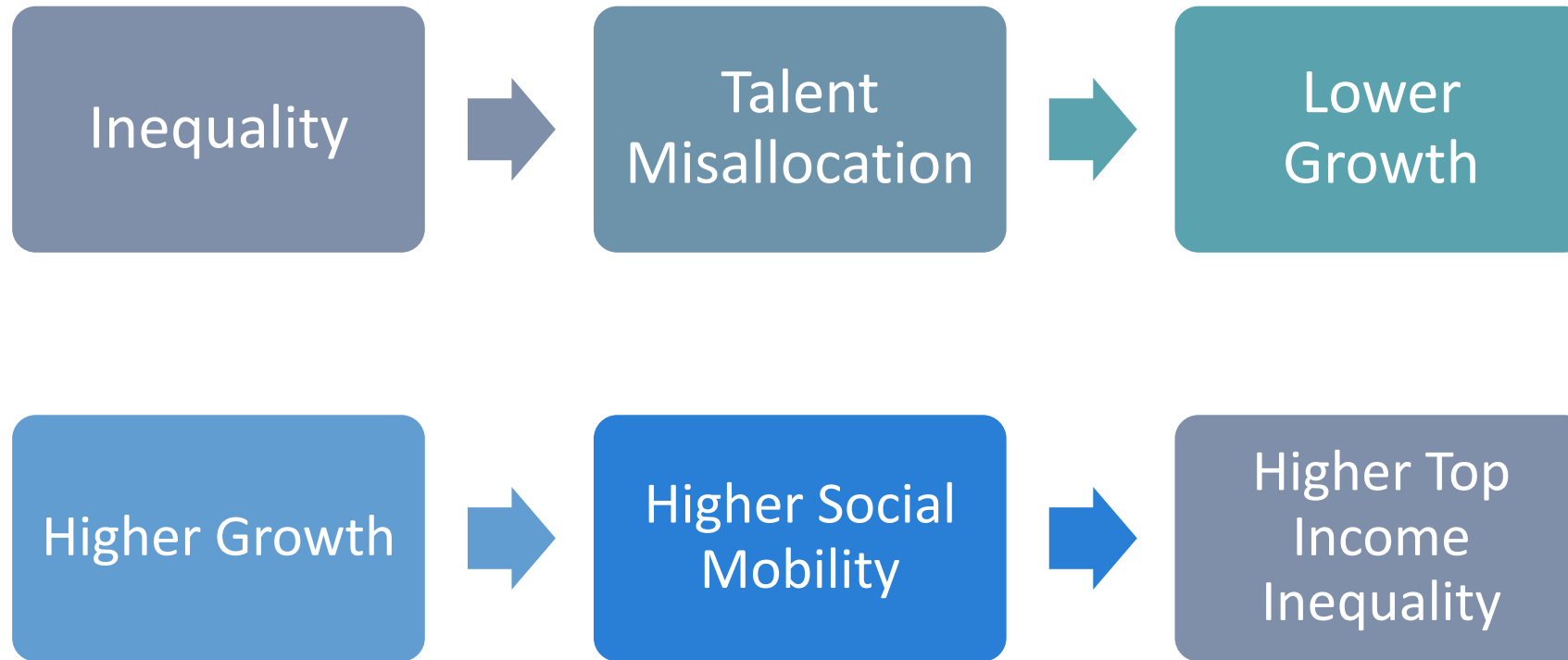
Takeaway: Policies that shift the allocation of talent in the economy, such as education reforms, foster innovation, development, and firm growth.

Fact 5. Older workers are more likely to be displaced by new technologies, as their skills might be outdated to work with newer technologies.



Takeaway: Retraining programs are useful to update the skills of workers to be compatible with newer technologies and to make growth more inclusive.

Fact 6. There is a two-way connection between inequality and economic growth.



Takeaway: Policies for inclusive growth should take into account the two-way connection between growth and inequality.

In conclusion:

- Brain drain, especially when it involves knowledge workers, is a concern for Middle Income Countries
- A mix of policy tools can improve the allocation, education, and mobility of talent, fostering growth

Thank you!