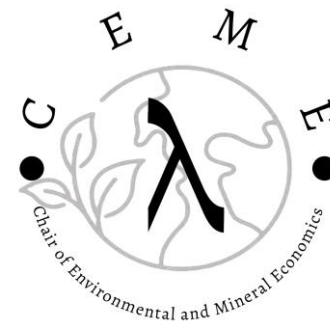


# GVC and FDI in Turbulent Times: the case of Mediterranean countries

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# Motivation

- In this context of vertical fragmented production processes, different stages of the same production, have been internationally dispersed, leading to the concept of "unbundling" of production.
- Global Value Chains (GVC) refers to “the full range of activities that firms perform to bring a specific product from its conception to its end use and beyond” (Gereffi and Fernandez-Stark, 2011).
- GVC have immensely increased during the last years. According to the World Trade Organization (WTO) report (2020), more than two-thirds of the international trade is performed through GVC.
- This is thus related to FDI and trade.

# Motivation

- Repetitive external shocks (COVID, trade related, war in Ukraine, geopolitical fragmentation, climate change, etc.) affected developing and emerging countries, especially Mediterranean ones.
- The objective of this presentation is to examine how these recent developments can affect Mediterranean countries.
- Two types of shocks:
  - Cyclical: uncertainty and unstable geopolitical context
  - Structural: environmental challenges

# Outline

- Overview of GVC and FDI in the Mediterranean
- Impact of recent developments on GVC and FDI
- GVC, FDI, and the environment: between mitigation and adaptation
- Conclusion and policy implications

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# GVC flows

## Share of GVC in GDP (2020)

Egypt 7%

Morocco 21.5%

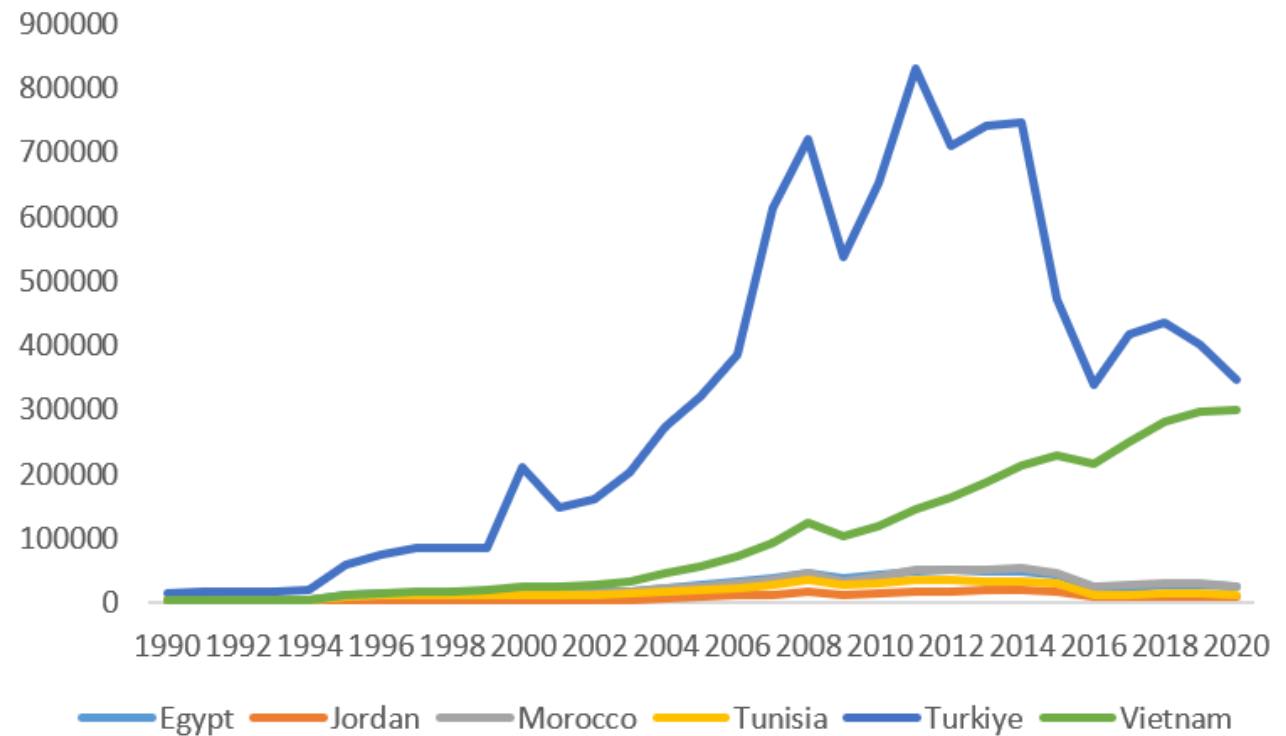
Jordan 23.8%

Tunisia 29.8%

Türkiye 48%

Vietnam 86%

Figure 1: Evolution of GVC-related Flows (in million USD)



Source: Authors' own elaboration using WITS dataset.

Note: GVC-related trade flows measure the value of goods and services exported by a sector or a country that crosses more than one border

# GVC decomposition

Table 1: Mediterranean Countries exports decomposition

	<b>Egypt</b>	<b>Jordan</b>	<b>Morocco</b>	<b>Tunisia</b>	<b>Italy</b>	<b>Greece</b>	<b>Spain</b>	<b>France</b>
<b>Gross exports (million \$; GEXP)</b>	<b>22120</b>	<b>7313</b>	<b>22717</b>	<b>12947</b>	<b>924361</b>	<b>38331</b>	<b>471226</b>	<b>967415</b>
of which								
<b>Domestic content (%; DC)</b>	<b>88.81</b>	<b>77.54</b>	<b>83.86</b>	<b>74.49</b>	<b>72.49</b>	<b>65.85</b>	<b>68.36</b>	<b>69.89</b>
<b>Foreign content (%; FC)</b>	<b>11.19</b>	<b>22.46</b>	<b>16.14</b>	<b>25.51</b>	<b>27.51</b>	<b>34.15</b>	<b>31.64</b>	<b>30.11</b>
Total (%)	100	100	100	100	100	100	100	100
of which								
<b>GVC-related trade (%; GVC)</b>	<b>36.82</b>	<b>34.03</b>	<b>41.84</b>	<b>48.67</b>	<b>46.47</b>	<b>52.21</b>	<b>50.91</b>	<b>52.62</b>
<i>GVC-backward (%; GVCB)</i>	<i>11.20</i>	<i>22.47</i>	<i>16.15</i>	<i>25.52</i>	<i>28.06</i>	<i>34.19</i>	<i>32.03</i>	<i>30.91</i>
<i>GVC-forward (%; GVCF)</i>	<i>25.62</i>	<i>11.56</i>	<i>25.68</i>	<i>23.15</i>	<i>18.42</i>	<i>18.02</i>	<i>18.88</i>	<i>21.72</i>
<b>Traditional Trade</b>	<b>63.18</b>	<b>65.97</b>	<b>58.16</b>	<b>51.33</b>	<b>53.53</b>	<b>47.79</b>	<b>49.09</b>	<b>47.38</b>
Total (%)	100	100	100	100	100	100	100	100

Source: Authors' own elaboration using EORA dataset.

# GVC: firm level analysis

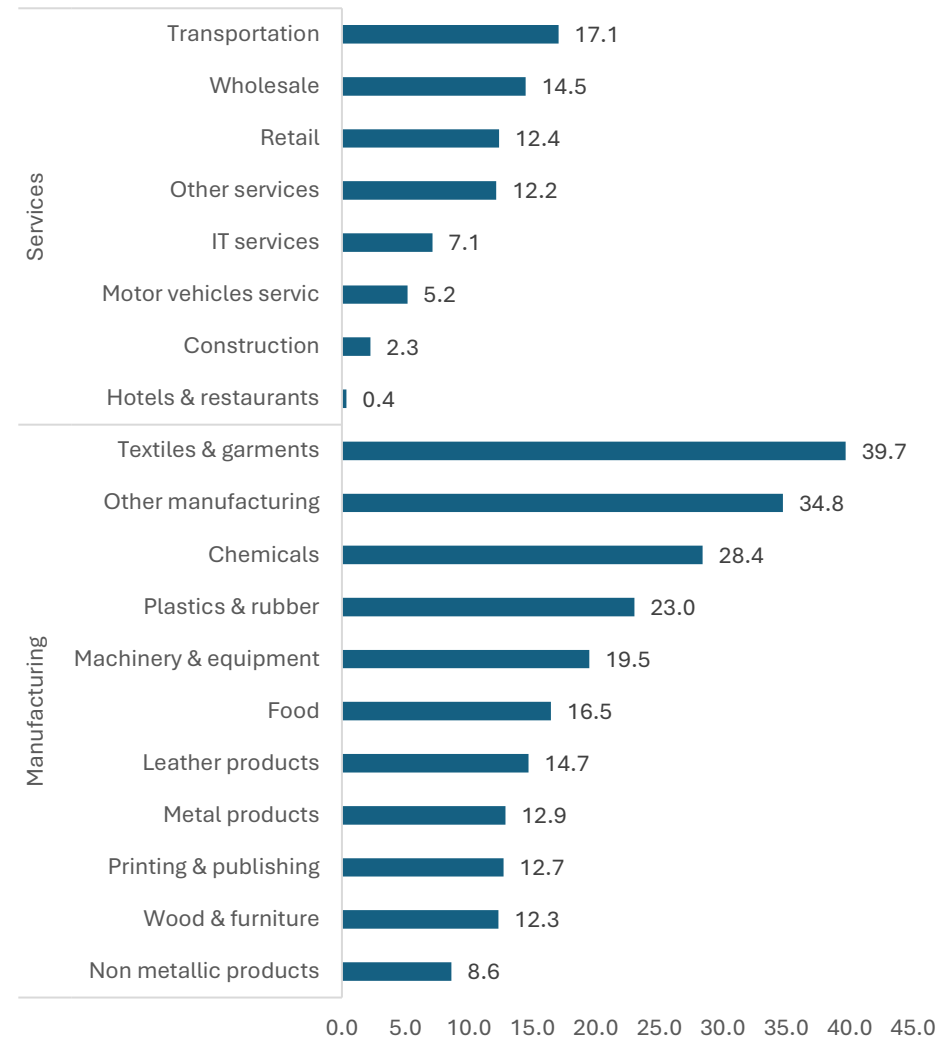
Table 1. Share of firms integrated into GVCs, by MENA country

MENA country	GVC1	GVC4
Egypt	6.0	0.4
Israel	29.1	3.5
Jordan	27.5	1.2
Lebanon	29.0	0.6
Morocco	23.8	0.9
Palestine	24.3	0.0
Tunisia	34.4	4.7
<b>Average MENA</b>	<b>19.6</b>	<b>1.4</b>

Notes: Figures in the table represent the percentage of firms engaging in GVCs within each country. Sampling weights are applied.

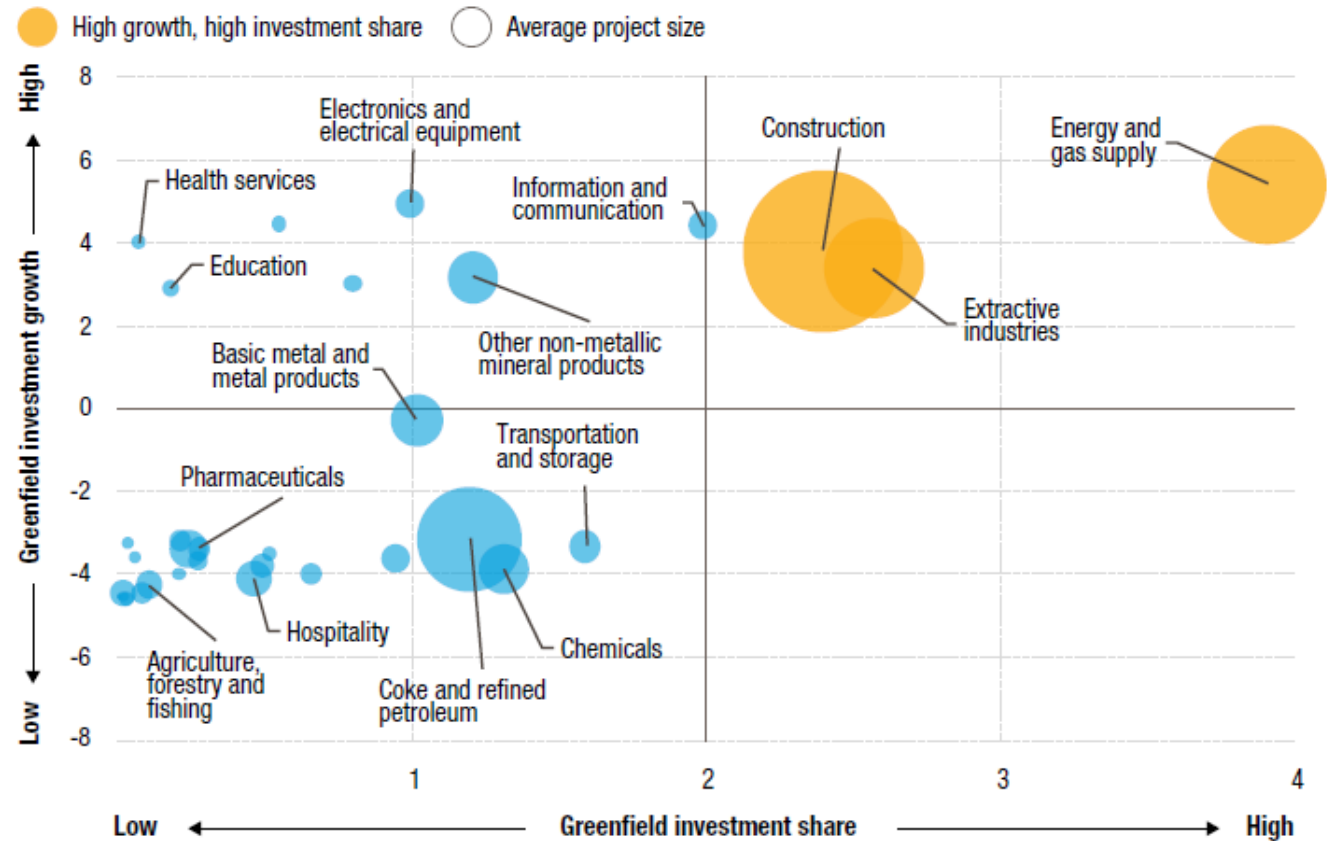
Source: Authors' own elaboration using WBES.

# GVC firms: which sectors?



# What about FDI?

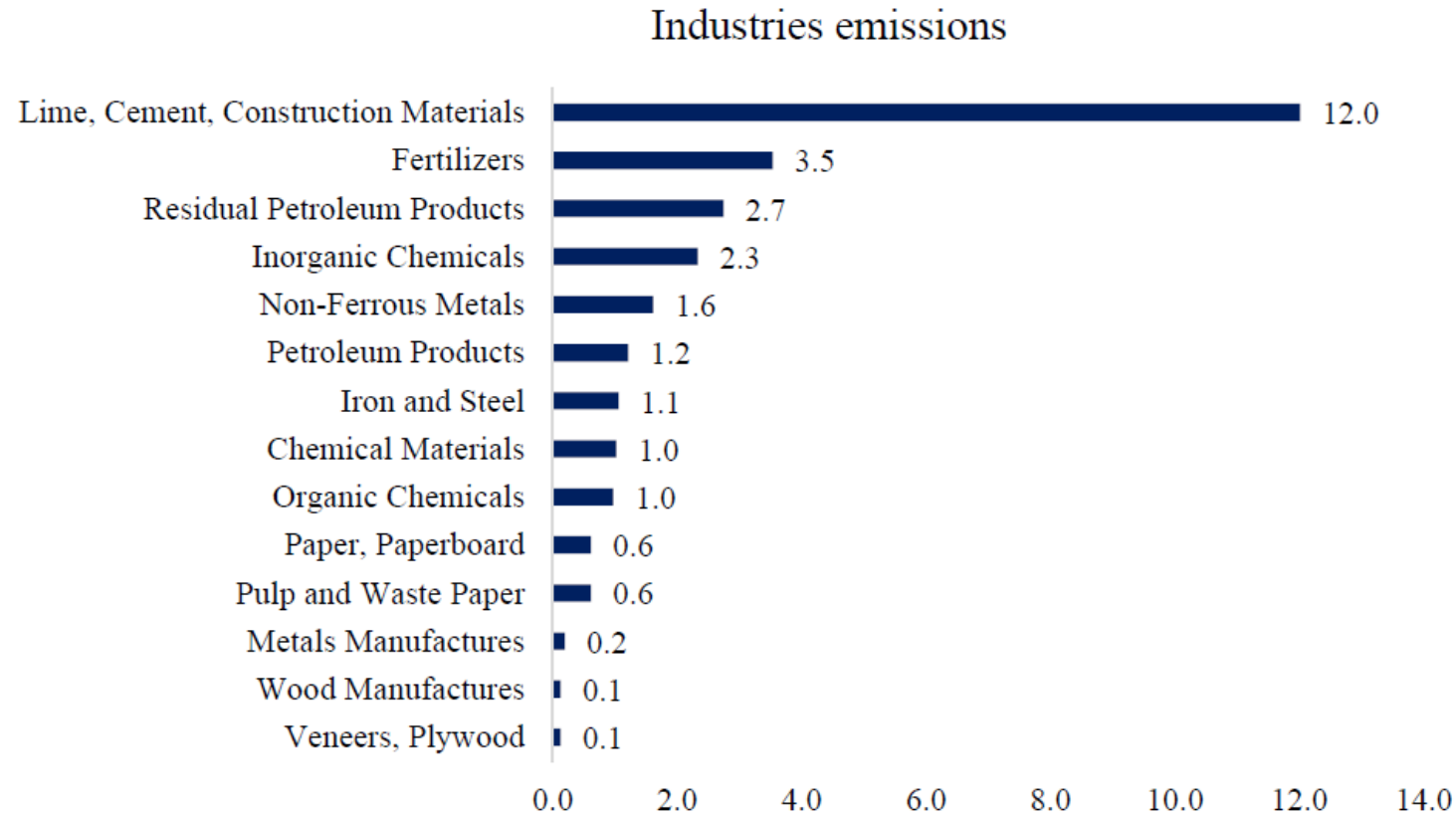
- Energy, construction and extractive industries were the leading sectors for greenfield investment in Africa.
- These sectors are capital intensive, with limited value added and low level of technological transfer.
- This clearly affects also the structure and effect of GVCs (Fathy and Zaki, 2025).



Source: UNCTAD, based on information from The Financial Times Ltd, fDi Markets

Notes: The x-axis represents each industry's share in total greenfield values. The y-axis shows the growth rate, calculated by comparing greenfield investment values in the periods 2020–2024 and 2015–2019, thus reflecting five-year growth performance. Bubble sizes denote the average project size during 2020–2024.

# Are these sectors polluting?



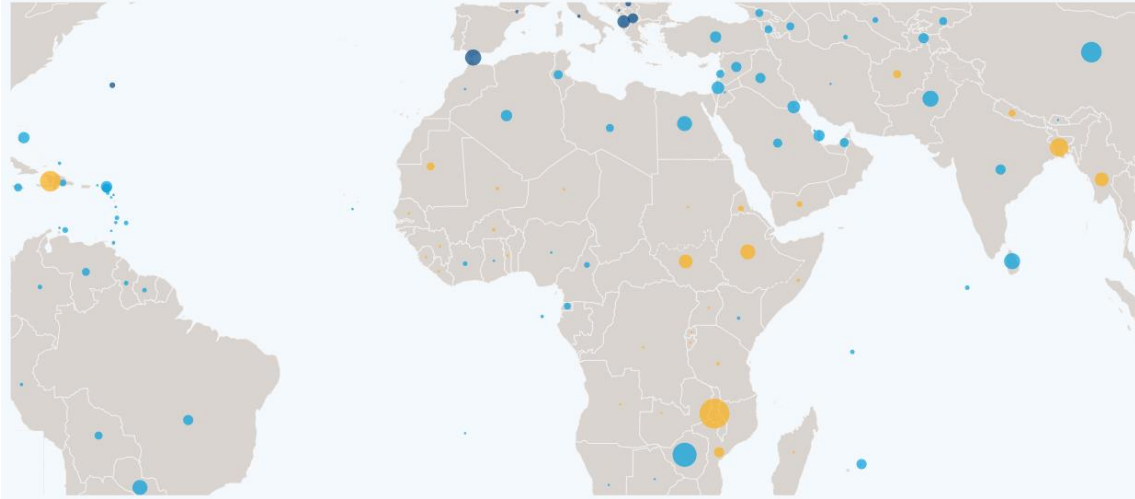
Source: Authors' own elaboration using Classification Harris et al. (2002). Emissions intensity is from ESA, 2010 measured as metric tons of CO2 per \$1000 in constant 2000 dollars.

# Outline

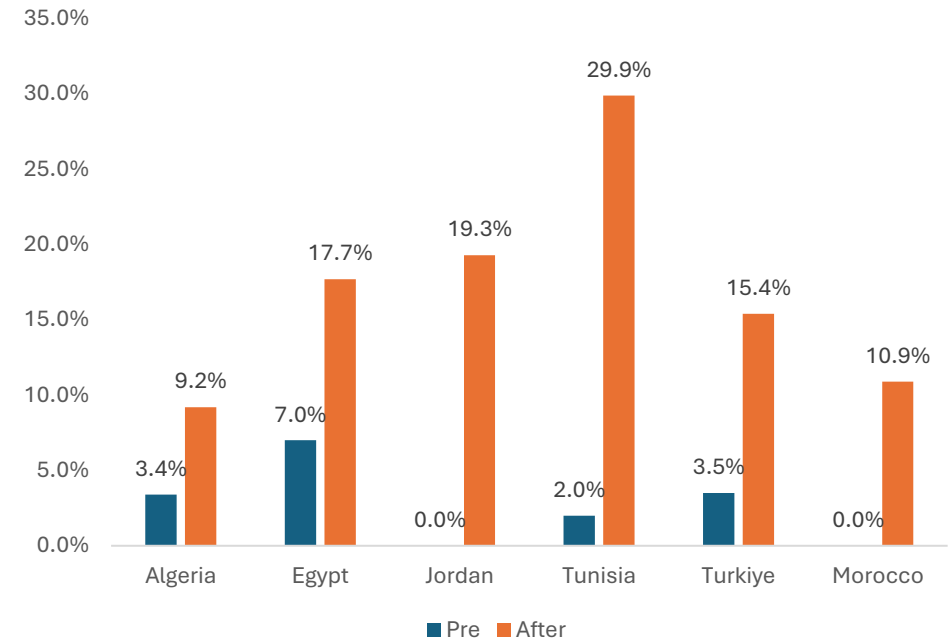
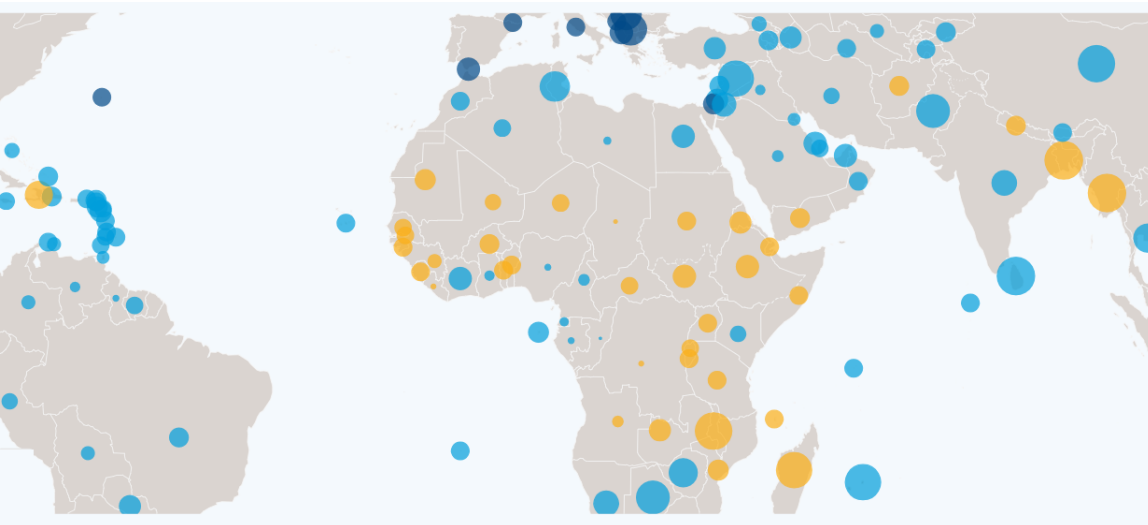
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# Liberation day and subsequent tariffs

Pre (Jan 2025)



After (90 day pause)

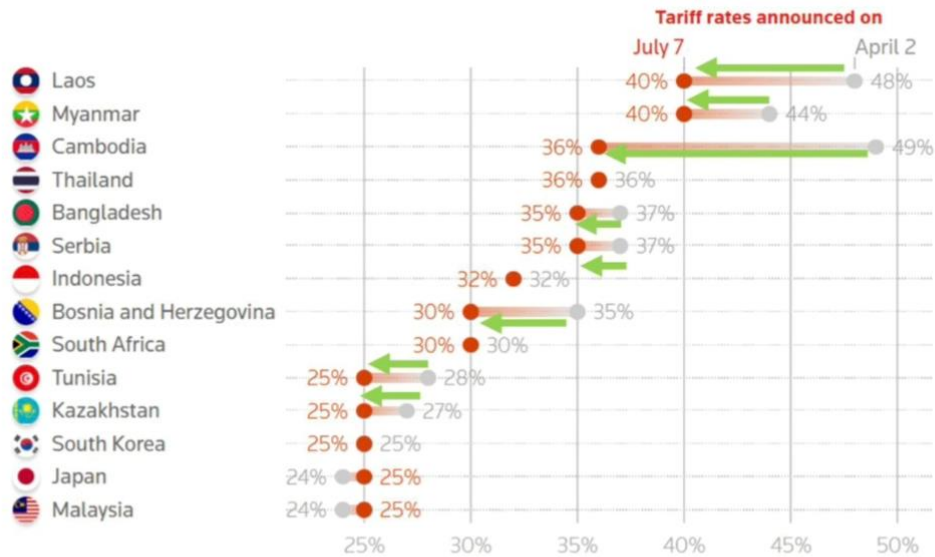


Source: UNCTAD (2025)

Note: Trade-weighted applied tariffs on US imports if all new tariffs, including country-specific ones, are applied

● Developed ● Developing ● Least developed

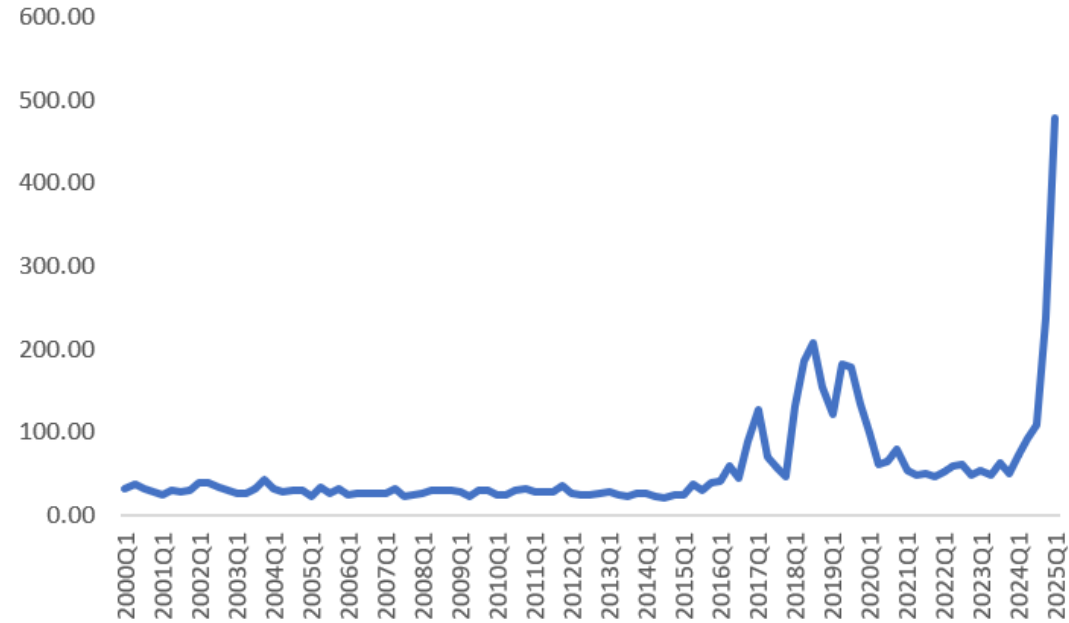
# Trade policy uncertainty



Source: The White House; Reuters Reporting  
 Pasit Kongkunakornkul • July 8, 2025 | REUTERS



Trade Policy Uncertainty Index



Source: Caldara et al. (2022).

The TPU index is based on automated text searches of the electronic archives of seven newspapers: Boston Globe, Chicago Tribune, Guardian, Los Angeles Times, New York Times, Wall Street Journal, and Washington Post. The measure is calculated by counting the monthly frequency of articles discussing trade policy uncertainty (as a share of the total number of news articles) for each newspaper. The index is then normalized to a value of 100 for a one percent article share.

# Exposure to shocks in the Mediterranean

Table 2: Foreign supply exposure

<u>Foreign supply exposure</u>		Exporter (j)							
		Egypt	Jordan	Morocco	Tunisia	Italy	Greece	Spain	France
Source of VA (i)	Egypt	.	3%	0%	1%	1%	1%	0%	0%
	Jordan	1%	.	0%	0%	0%	0%	0%	0%
	Morocco	0%	0%	.	1%	0%	0%	0%	0%
	Tunisia	0%	0%	0%	.	0%	0%	0%	0%
	Italy	9%	7%	9%	16%	.	13%	8%	8%
	Greece	1%	1%	0%	0%	1%	.	0%	0%
	Spain	3%	2%	14%	5%	5%	3%	.	6%
	France	5%	4%	18%	19%	10%	6%	14%	.
	Exposure to MED	19%	17%	42%	42%	17%	23%	23%	15%
To SMED	1%	3%	0%	2%	1%	1%	0%	0%	
To NMED	18%	14%	42%	40%	16%	22%	23%	15%	
Exposure to RoW	81%	83%	58%	58%	84%	77%	77%	85%	

Source: Authors' own elaboration using EORA dataset.

Notes: In the rows, we have countries i that are the source of VA further exported by countries j in columns. It is important to note that shares are computed by column, since we are interested in weighting the importance of a shock of supply from i to j.

# Exposure to shocks in the Mediterranean

Table 3: Foreign demand exposure

<u>Foreign demand exposure</u>		Destination of VA (j)							Exposure to Med	To SMED	To NMED	Exposure to RoW	
		Egypt	Jordan	Morocco	Tunisia	Italy	Greece	Spain					France
Origin of VA (i)	Egypt	.	1%	0%	1%	9%	2%	3%	5%	21%	2%	19%	79%
	Jordan	3%	.	0%	0%	1%	0%	0%	1%	5%	3%	2%	95%
	Morocco	0%	0%	.	1%	5%	1%	11%	18%	36%	1%	35%	64%
	Tunisia	0%	0%	1%	.	15%	1%	6%	21%	44%	1%	43%	57%
	Italy	0%	0%	0%	0%	.	2%	5%	8%	16%	0%	16%	85%
	Greece	1%	0%	0%	0%	9%	.	3%	4%	18%	1%	17%	83%
	Spain	0%	0%	1%	0%	7%	1%	.	12%	22%	1%	21%	78%
	France	0%	0%	1%	1%	7%	1%	7%	.	16%	2%	14%	84%

Source: Authors' own elaboration using EORA dataset.

Notes: Shares are now computed by row, since we are interested in a shock of demand from j to i

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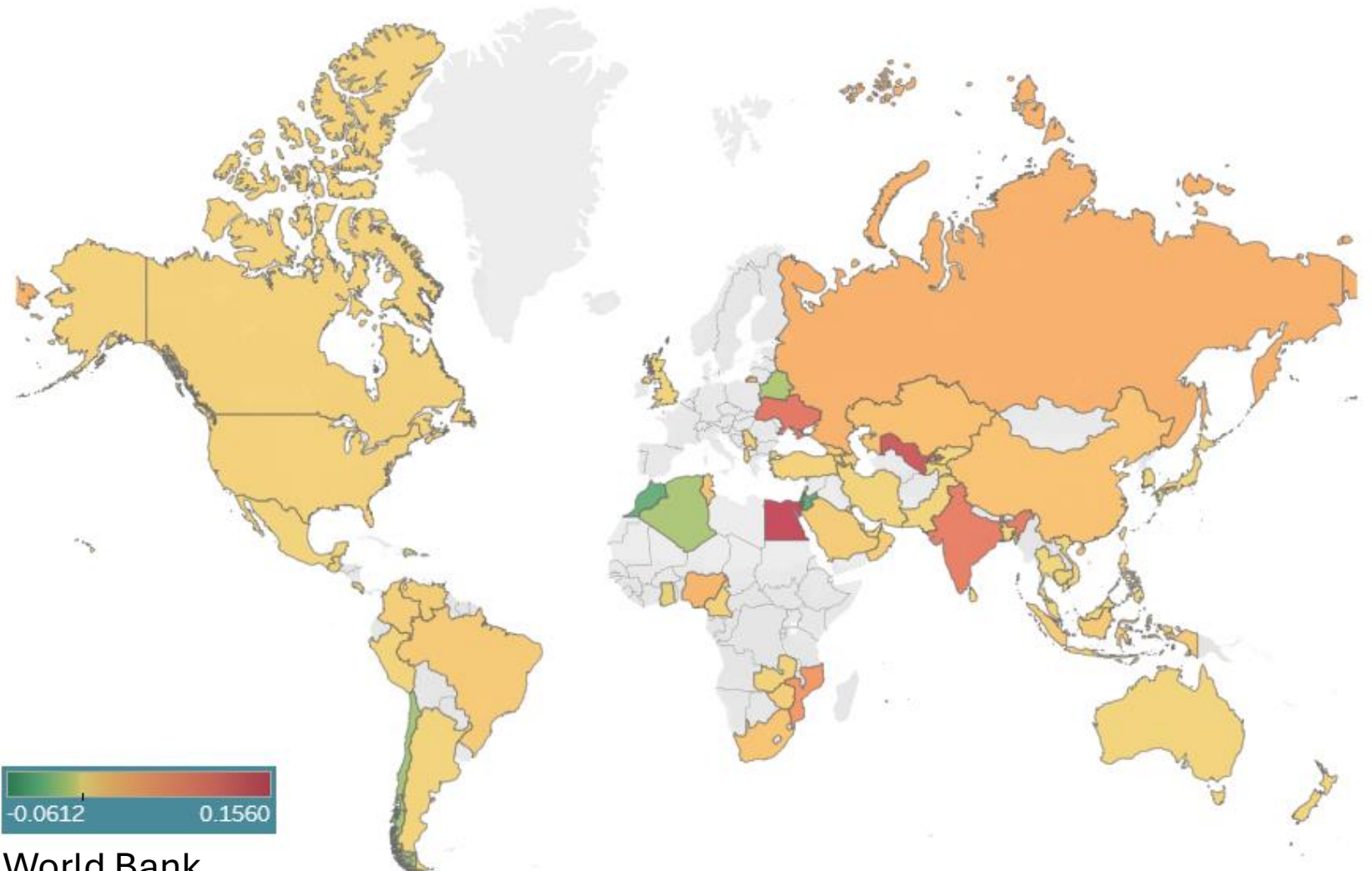
# Risks related to climate change

- Developing countries face a double- risk that could affect their participation in GVCs:
  - A “physical risk” associated with natural disasters and resulting in output losses, reduced FDI, and reduced participation in GVCs.
  - A “transition risk” related to the necessary adjustments in regulations, production techniques, and energy deployment, which may reduce their comparative advantage in carbon-intensive intensive sectors and, consequently their participation in GVCs.
- Aboushady and Zaki (2025) find that
  - Physical risk from climate change (measured by natural disasters and death from natural disasters) is negatively, yet weakly, associated with participation in GVCs.
  - CO2 emissions (per-capita and from manufacturing) have a negative impact on GVC participation, while increasingly shifting to renewables increases GVC participation.

# Trade-environment shock: CBAM

The CBAM exposure index measures the total value of excess carbon payments for all CBAM products as a share of the total value of exports of CBAM goods for country.

Red indicates a high exposure to CBAM (potential loss) of competitiveness relative to the average EU producer

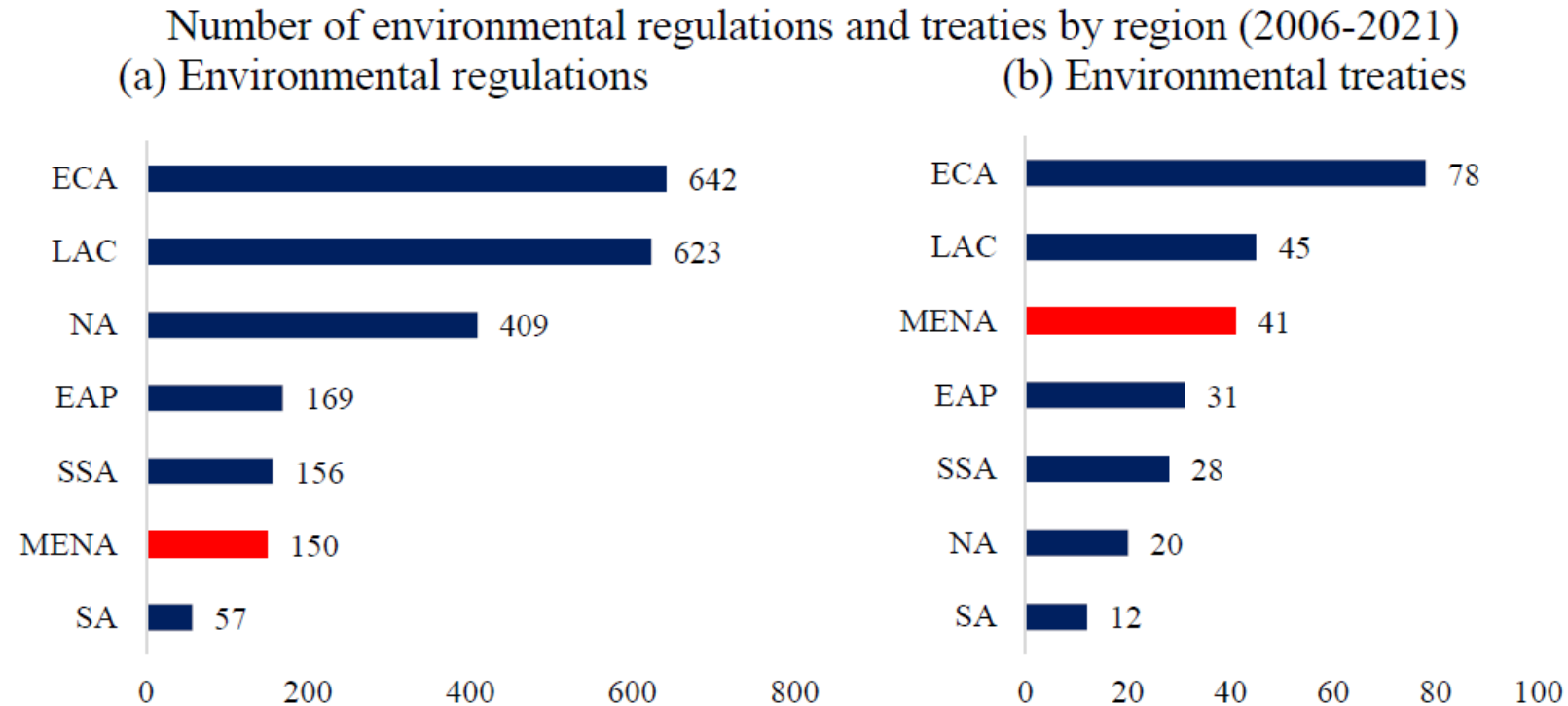


Source: The World Bank

# Which policy options for countries and firms?

- Countries
  - National regulations?
  - Environmental provisions in trade agreements?
  - Carbon tax?
- Firms
  - Investment in green technologies?
  - More environment-friendly measures?

# Countries perspective: regulations matter?



Notes: Panel (a) reports the average number of environmental regulations per country, calculated by dividing the total number of regulations in each region by the number of countries in that region. Panel (b) reports the total number of distinct environmental treaties signed between 2006 and 2021. Each treaty is counted only once per region, regardless of how many countries within the region are signatories, to avoid double-counting.

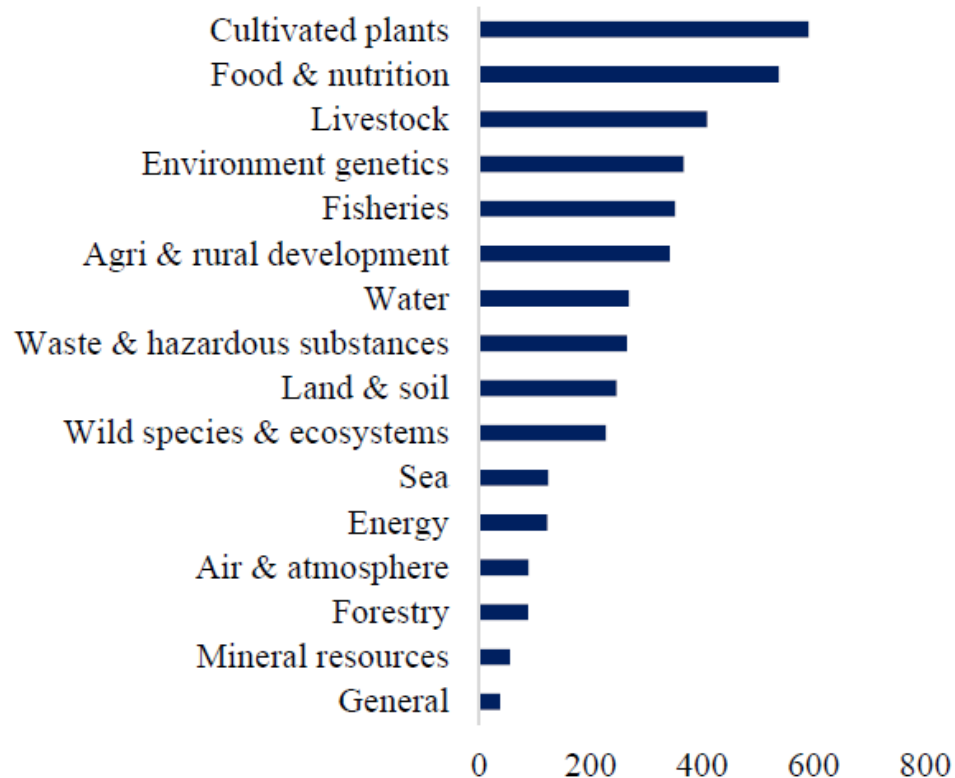
ECA: Europe and Central Asia; LAC: Latin America and Caribbean; SSA: Sub-Saharan Africa; EAP: East Asia and Pacific; MENA: Middle East & North Africa; NA: North America; SA: South Asia.

Source: Authors' own elaboration using Ecolex.

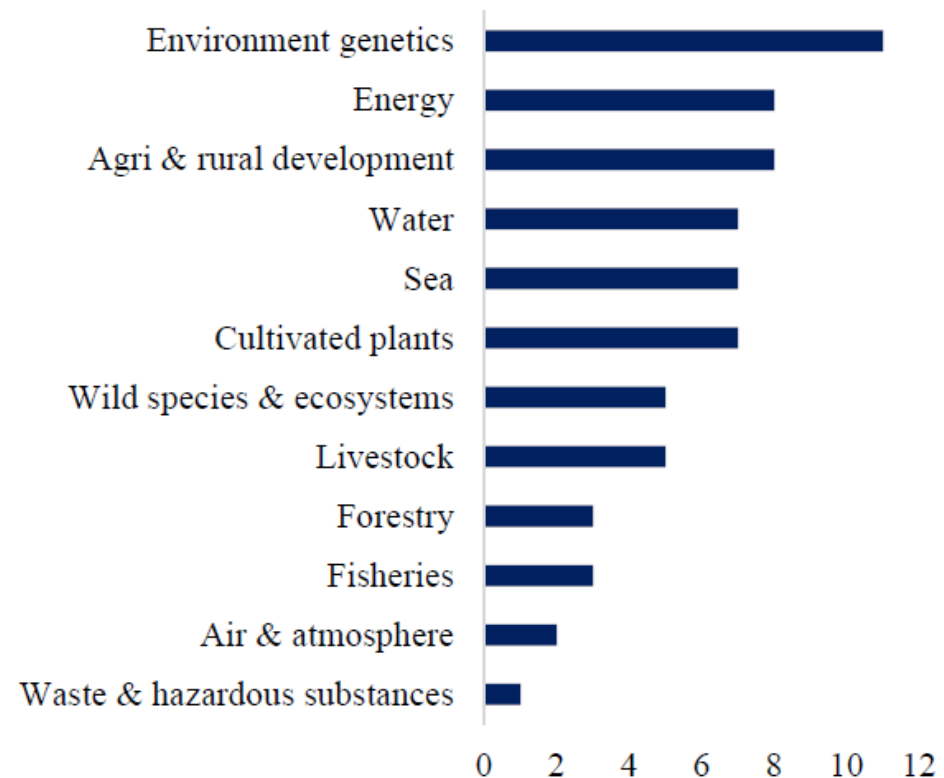
# Countries perspective: regulations matter?

Scope of environmental regulations and treaties in MENA (2006-2021)

(a) Environmental regulations



(b) Environmental treaties

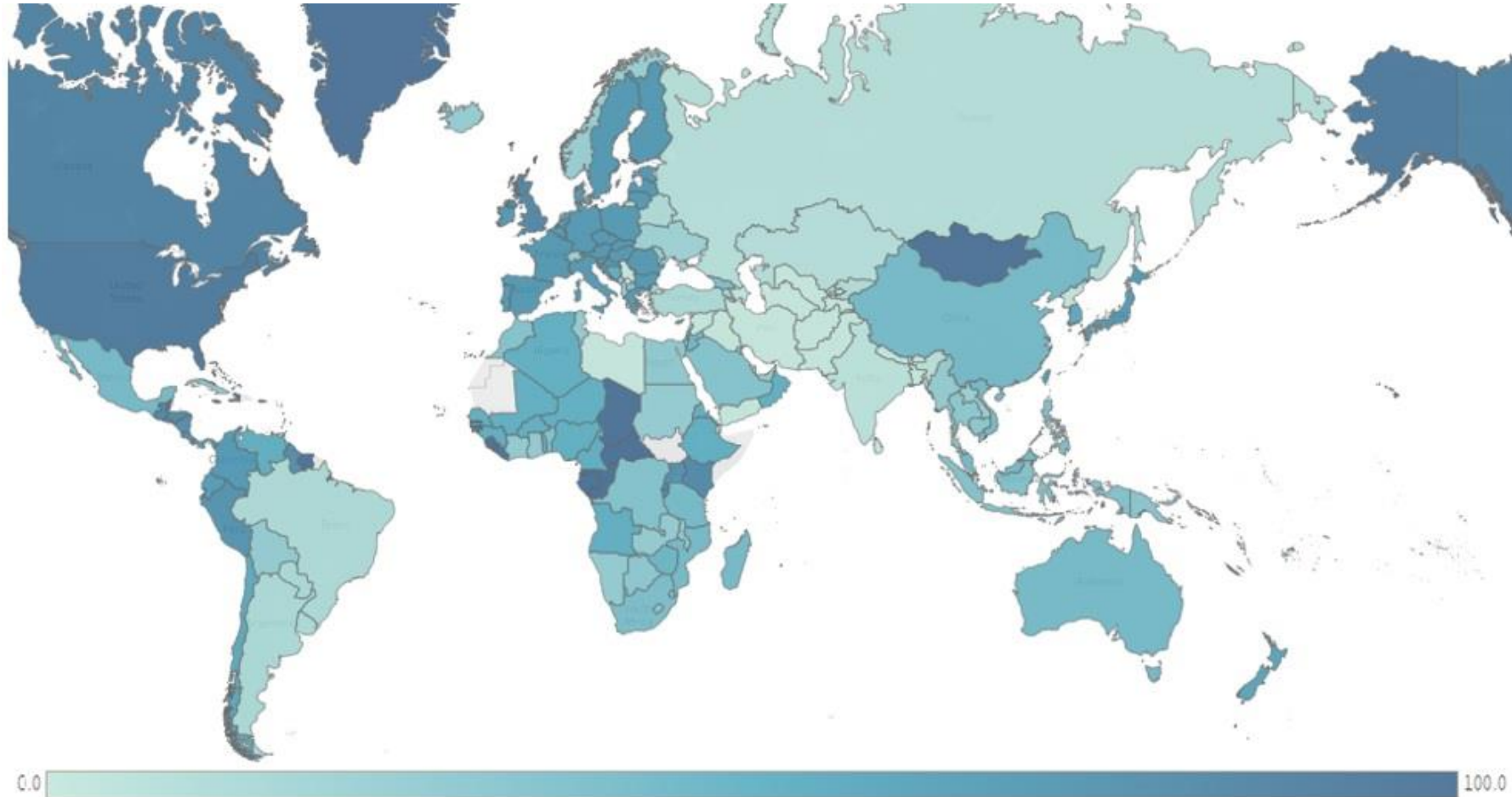


Notes: One environmental regulation/treaty can be classified under more than one category.

Source: Authors' own elaboration using Ecolex.

# Countries perspective: regulations matter?

Share of Agreements Including Environmental Provisions (%)

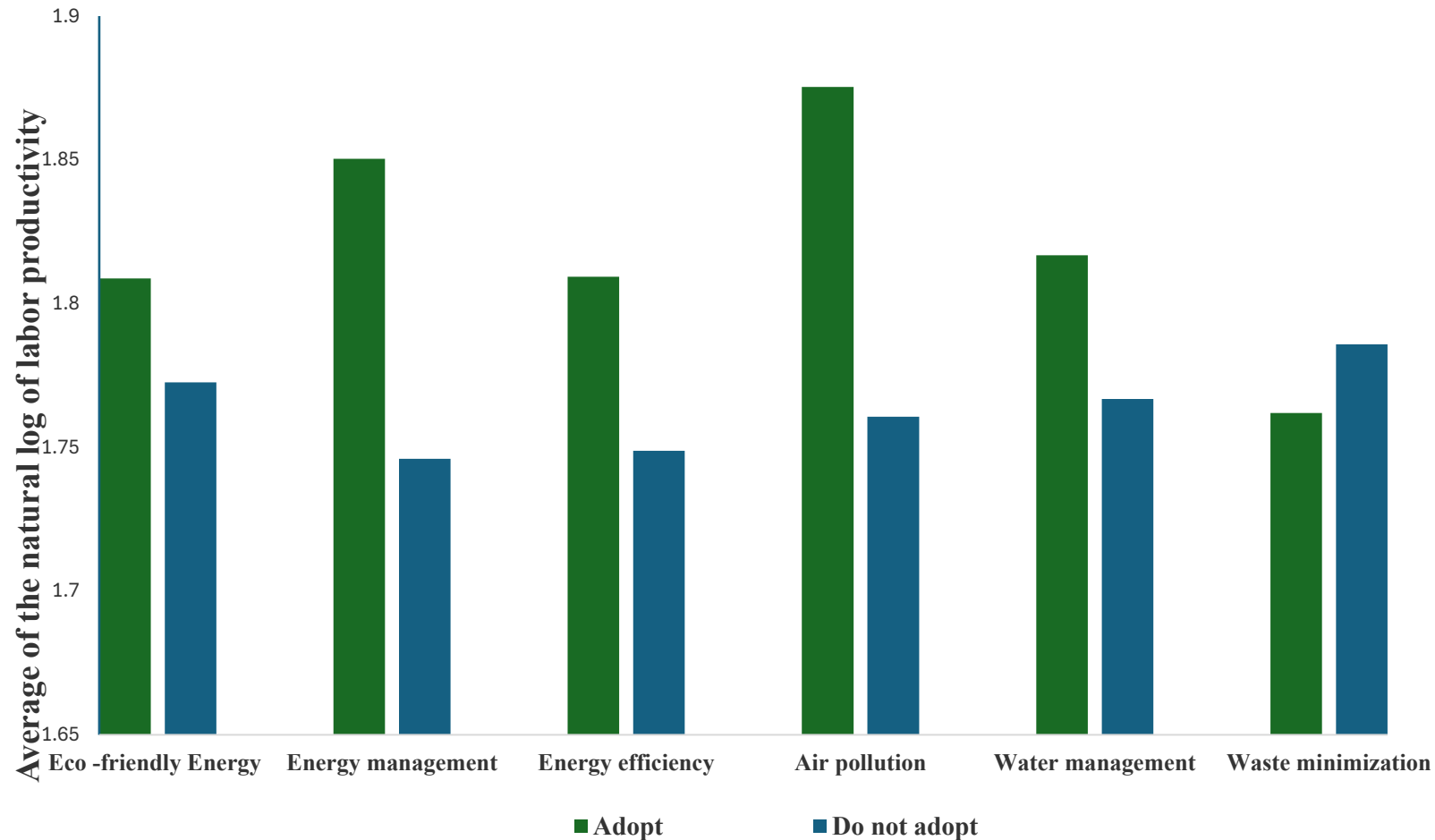


Source: Deep Trade Agreement Database – The World Bank

# Evidence

- Hazem and Zaki (2025) show that national environmental regulations increase the likelihood of integrating into GVCs.
  - This result highlights the role of such regulations in attracting GVCs in developing countries and thus lends support to the Porter Hypothesis.
  - These regulations increase the effect of spending on research and development on GVC.
  - Yet, the results are less conclusive for the role of environmental treaties.
- Nunez Rocha et al. (2024) show that dirty goods are generally less traded between pairs of countries within agreements that have environmental provisions, especially for exports of dirty-footloose industries from non-OECD countries to OECD countries. At the product level, more heterogeneity is observed.

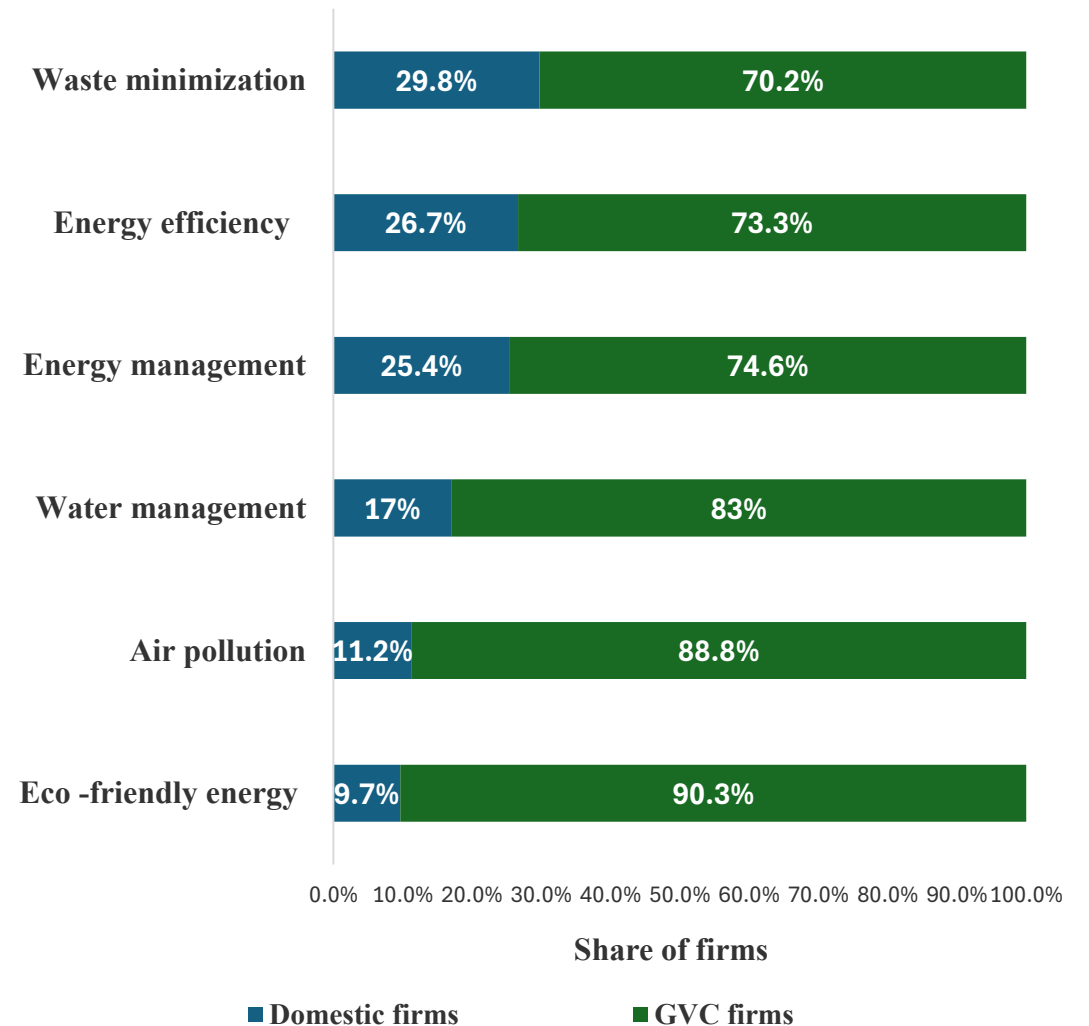
# Firm perspective: adoption of environment friendly measures



Source: Authors' own elaboration using BEEPS data for 2018 – 2020.

# Firm perspective: adoption of environment friendly measures

- The share of GVC firms, among those who adopt environmental actions, is higher than the corresponding share of domestic firms.
- GVC firms tend to have a higher environmental performance (Girma et al., 2008 and Cui et al., 2016).



Source: Authors' own elaboration using BEEPS data for 2018 – 2020.

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# Conclusion and policy implications

- Serious domestic reforms in the Southern shore of the Mediterranean to better integrate GVC and attract FDI in the manufacturing sector.
- Consolidating regional and multilateral agreements to curb the negative impact of the US-induced uncertainty.
- Diversification is the keyword of this phase.

# Conclusion and policy implications

- The relationship between GVC, environment and climate change is complex.
- If Med countries adopt stringent environmental measures, they might be able to attract FDI in less polluting sectors, leading to an increase in their GVC integration.
  - This will also help them diversify their economies away from natural resources that are large emitters of CO<sub>2</sub>.
- Third, to help firms comply with such environmental regulations and treaties, research and development is a must.
  - This is why governments in the Med region should adopt more policies that foster green innovation to increase GVC integration.
  - This includes budget allocation for R&D, tax subsidies for R&D, and intellectual property rights.

Thank you for your attention

