

# Global Value Chains in Latin America and Europe: Experiences, Challenges and Opportunities

23rd y 24th of January, 2024

Place:

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# Global Value Chains development in Central and South Eastern Europe (1)

- The globalization process of the recent decades has been characterized by the emergence of global value chains (GVCs) as the coordination costs have been reduced significantly due to the:
  - Progress in information and communication technologies
  - Declined in transportation costs
  - Eased regulatory constraints facilitating international flow of goods and factors of production
- ... and in the case of Central and Southeastern European countries the fall of the communist/socialist systems and consequent transformation to market economies
- This has led to a significant number of multinational companies entering these countries and taking advantage of their benefits, primarily geographical proximity to the EU, labor costs and relatively developed infrastructure and industrial base

# Global Value Chains development in Central and South Eastern Europe (2)

- This wave of globalization helped these developing countries to re-industrialize as factory offshoring presented them with ready-made exporting capabilities to attach to.
- In this development model, FDI by MNCs brings capital and technology into recipient countries, which accelerates economic convergence.
- While local affiliates and suppliers of GVCs initially specialize in low-wage, low-value added assembly and processing (“midstream” activities), they may eventually upgrade to more sophisticated upstream (R&D and design, head office activities) and downstream (marketing, distribution, sales and aftersales) tasks.
- The literature calls this broadening of tasks “functional upgrading”.



- This was essentially the light-motive to my investigation trajectory related to GVCs participation and upgrading, focusing on the CSEE countries.

# Global Value Chains development in Central and South Eastern Europe (3)

- In the past three decades, all former planned economies in Europe were transformed into market economies, and most economic activities were liberalized.
- In the 1990s, this region barely had marketable products that could be traded on the markets of developed countries
- Although at the time of regime changes the development of socialist nations was uneven, all countries were given a chance to boost their economies in a capitalist environment.
- Integration into world trade and value chains was the preferred way to gain economic growth in these economies (encouraged both by “push” & “pull” factors).

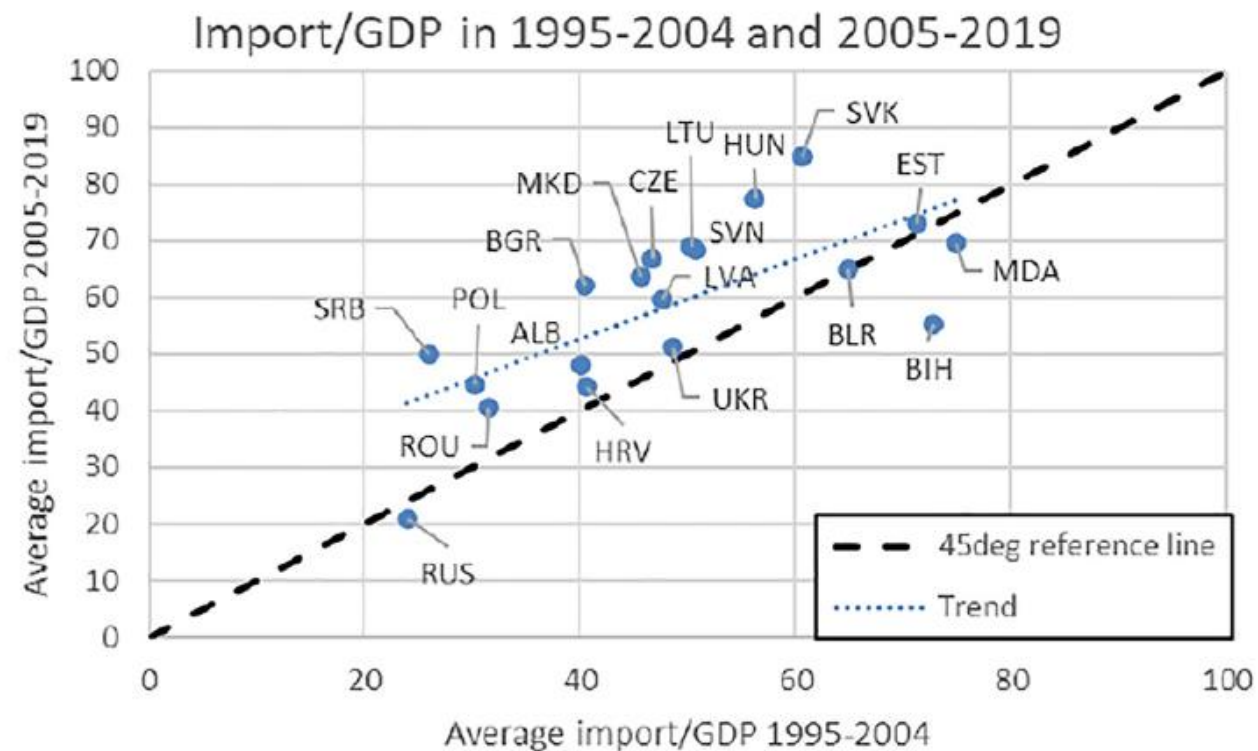
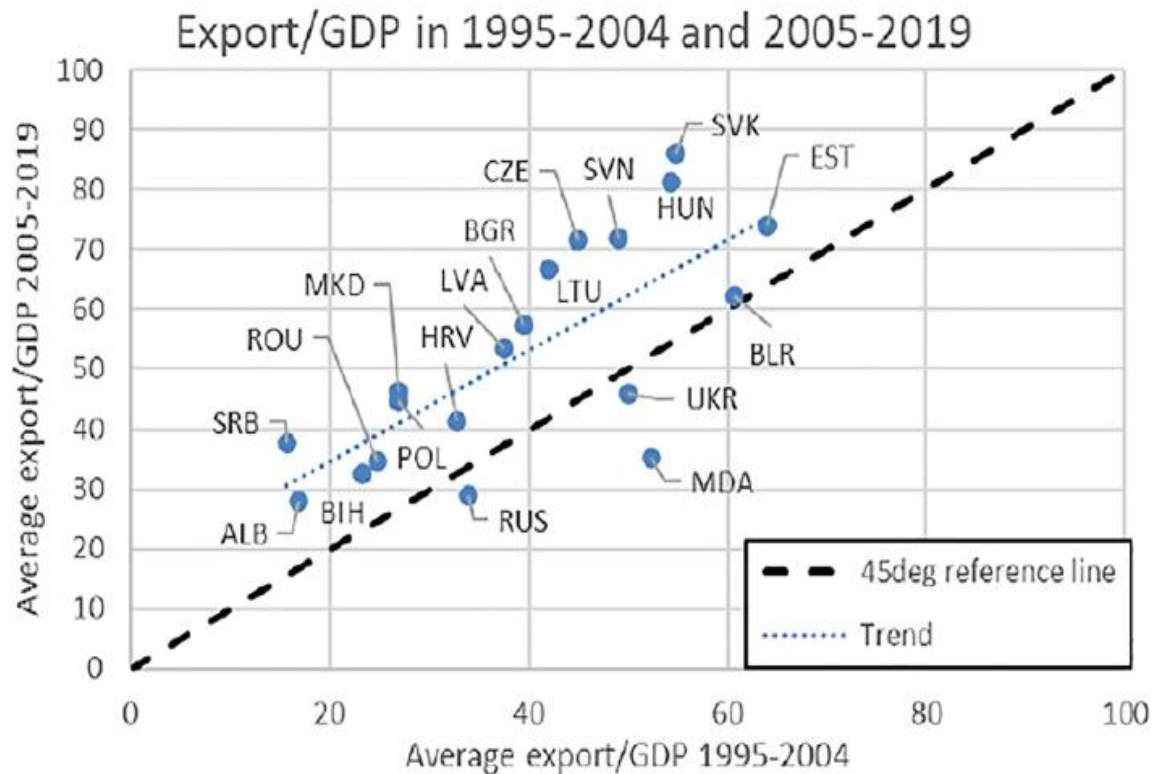
# Global Value Chains development in Central and South Eastern Europe (4)

- In the wake of trade liberalization, the CSEE economies began to specialize in some key industries.
- Poland, the Czech Republic, Slovakia, and Hungary specialized in textile, metal, car manufacturing and computer and tec-products
- While the Baltic states specialized in wood and wood product manufacturing
- Romania and Bulgaria had a growing share of technology-driven industries
- On the other hand the south eastern countries, lagged somewhat behind the CEE region owing to the Yugoslav Wars
- Still, nowadays they are also ferly well integrated into GVCs, in particular North Macedonia, Serbia and Bosnia and Herzegovina, in particular to car manufacturing and chemical industries

# Global Value Chains development in Central and South Eastern Europe (4)

- At the beginning, trade liberalization put export and FDI inflows to the center of economic development, and export-led growth became the prime focus of economic policies in several CEE countries
- Latter on, trade agreements between CSEE countries and the EU gave a significant boost to exports and consequently growth of the region via foreign trade
- Finally actual EU membership (for some of the countries) cemented this process of full integration into the European and thus global value chains, providing even more growth opportunities
- Non-member countries also enjoyed the positive impact of trade agreements and closer ties to the EU, even though to a lesser extent
- As a result, international trade of goods and services gradually became the dominating factor in all economies in the CSEE region from the 1990s

# Global Value Chains development in Central and South Eastern Europe (5)



# Global Value Chains development in Central and South Eastern Europe (6)

- Thus, GVC became a defining feature for most of these economies
- It contributed to productivity growth and income convergence to Western Europe, even though with different magnitudes among the countries
- However, challenges remain as these countries have not yet caught up with western counterparts in terms of value added capture (Éltető et al. 2015)
- Moreover, these challenges were further emphasized by the COVID-19 crises and the disruptions it brought (likely strengthening the nearshoring processes), coupled with the current processes of automation and digitalization.
- However, this is both an opportunity and a risk for these economies.
  - on the one hand, they can benefit from favorable location, market access and moderate labor cost;
  - on the other, they are still at an early stage of the Industry 4.0 transition compared to global manufacturing powerhouses (Szabo, 2020).



# Research topics

- Thus the interest in this tectonic shifts triggered by the incursion of these countries into GVCs resulted in various research topics:
  1. What drives GVC participation in these region?
  2. Does participation in GVCs drives economic performance?
  3. Does export structure upgrading lead to higher growth?
  4. What is the nexus between GVC participation and the level of technology transfer that these countries (ongoing work)

# What drives GVC participation in these region? (Shimbov et al. 2013)

- Factor endowment differences and market size significantly increase the fragmentation of production in this region, while distance deters it, with greater impact for GVC trade than final goods trade
- Infrastructure quality is of great importance when establishing international production networks in the region, even though with obvious country differences
- The degree of similarity in economic freedom and legal certainty in trading partner countries represents another key factor for GVC trade in the region.
  - Once again, the influence is much greater on GVC than on final goods trade.
- A reduction in the cost of trade associated with regional integration processes favors GVC trade. This is particularly true for the ties between the republics of the former Yugoslavia which are still very active, even after a decade of wars and conflicts

# Does participation in GVCs drives economic performance? (Shimbov et al. 2016)

- We elaborated a Balassa-type index of international fragmentation that considers both types of trade: processed and final
- Countries in the region are far more important destination of processing trade than a source of it
  - Processing trade reaches as much as 40% of the corresponding amount of final trade exports, with the EU being the main partner
- We confirm the increasing role played by inward processing trade in the region, although with different magnitudes depending on country and sector
- A more disaggregated analysis of this index reveals that the region's countries have undergone a positive structural shift in industrial distribution toward higher value added industries
- Our results reveal that the relative tendency of each country to participate in this globalization process significantly affects its economic performance, as measured in terms of both differential and absolute GDP growth
- Moreover, the effects of GVC trade appear to present higher influence compared to the also positive influence of traditional trade

# Does export structure upgrading lead to higher growth? (Shimbov et al. 2019)

- We analyze the impact that the ability to produce more sophisticated goods has on the economic performance in the region and to determine the factors fostering this process
  - To do so, we elaborate an export sophistication index, à la Hausmann (2007)
- Countries in the region have been successful in improving their process of productive specialization, by incorporating and expanding to goods with higher value-added
- This process of structural transformation has been relatively more concentrated in the expansion of sectors producing medium-skill and technology-intensive goods, converging significantly to the level of high-income countries
- There is a positive influence of the structural transformation of production on economic growth, as increased export sophistication leads to subsequent income growth in these economies
- A greater involvement in the world market, either through a higher participation in the GVCs or by FDI, plays an important role in the increased sophistication of exports in these countries
- Domestic investment, better business environment, and macroeconomic stability seem to be crucial factors in stimulating the quality of the export basket in the region

# The nexus between GVC participation and the level of technology transfer

- It has long been argued that innovation and international trade are two driving forces of economic growth and development (Romer, 1990).
- On one hand, increased innovation provides opportunities for product differentiation and reduction of production costs, which facilitates a firm's expansion to international markets (Krugman, 1980; Guan and Ma, 2003; Tavassoli, 2018).
- On the other, trade with foreign countries results in technological spillovers (Coe and Helpman, 1995; Castellani and Fassio, 2019), which are beneficial for productivity growth in developing countries.
- These two driving forces of innovation and international trade are best combined in GVC related trade.
- From a development standpoint, it is crucial for a country to engage dynamically in the process of GVC participation. Countries first enter GVCs in low value-added tasks and gradually move up the value chain.

# Research question

## Research question

Does greater trade integration through GVC participation enhance exports of high technology products?

- Incorporation of technologically complex goods: Fundamental pillar to achieve a long-term economic development (Spulber, 2008)
- Participation in GVCs provides firms with an opportunity for acquiring better technology and know-how (Reddy et al. 2021)
- CEE countries: Participation in GVCs has been remarkable (particularly highly for Czechia, Hungary, Slovakia)
- WB countries: less GVC-linked than CEEs, but mostly Serbia, Bosnia and Herzegovina and North Macedonia have experienced increased GVC participation since 2000

# Related literature (1)

- “Boom” of literature on GVCs after 2012 (reason: availability of international input-output databases - TiVA, WIOD, Eora)
- Abundant papers concerning the gains from GVC activities (Andrew et al. 2018; Castellani & Fassio, 2019)
- Advantages for firms through the access to more sophisticated intermediate inputs, stimulating technological spill-overs and forming trade networks faster than with conventional arm’s length trade (Halpern et al. 2015; Shimbov et al. 2016; Stöckinger, 2017; Pahl & Timmer, 2020)
- Firms integrated into GVCs are better placed to take advantage of knowledge-transfers as they usually have relatively high import and export levels due to intra-chain trade allowing them to benefit from both learning by importing and by exporting.

# Related literature (2)

- From a development perspective a country can have more benefits through GVC participation when it moves towards the parts of the chain where most value is created.
- One of the key components for this to happen is technology adoption and innovation, which will influence the change in the trade structure of a country and start moving up the value chain and operate closer to the technological and value-creation frontier (Ito et al., 2019; Brancati et al., 2017)
- Firms integrated into GVCs are better placed to take advantage of knowledge-transfers as they usually have relatively high import and export levels due to intra-chain trade allowing them to benefit from both learning by importing and by exporting.
- Trading firms are stimulated to invest more in upgrading their technology (Bustos, 2011; Lileeva & Trefler, 2010) creating new opportunities for smaller firms and for less developed countries to participate in global markets
- Other studies argue that policies that foster innovation are essential for upgrading the technological content of exports and later on GVC integration (Baldwin & Gonz'alez-L'opez, 2015; Taglioni & Winker, 2016; Ndbuisi & Owusu, 2020)



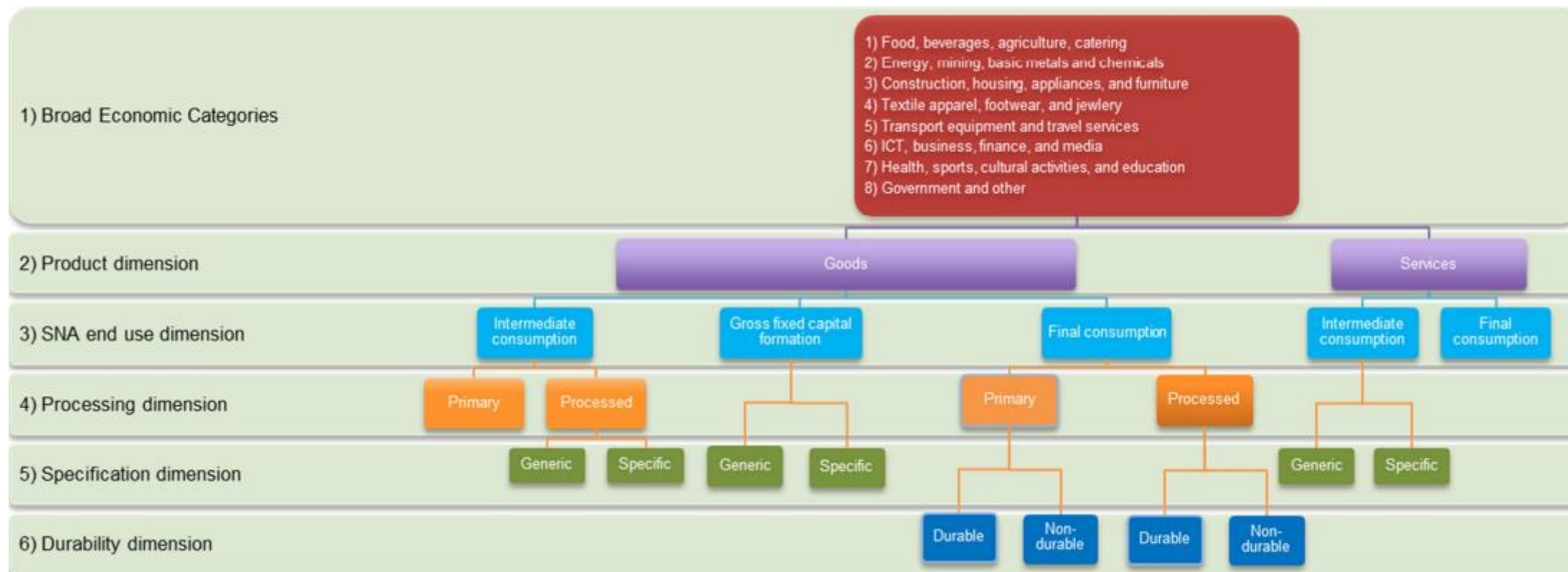
# Our contribution

- We analyze the nexus between technology adoption influencing the technology upgrading of exports and the participation in GVCs
- We focus on Central-East European and Western Balkan countries (as relatively less investigated) for the period 1996-2019
- In addition to the aggregate model, we present a sectoral focus of the participation of countries in GVC and its effects on the technology intensity of their exports
- Instead of traditional data sets (TiVA, WIOD, etc), we use alternative data source - BEC Rev. 5, allowing us to expand the country scope beyond “traditional” lists (largely related to OECD + BRICS)
- Work in process: We plan to compare the results for the pre-COVID period with the recent trends in the post-COVID era (2020.I-2024.I)

# Measuring the participation in GVC. Motivation to use BEC Rev 5

- Some of the countries in our sample are not included in the available trade in value-added databases
- This is facilitated by using the BEC as a high-level aggregation of existing product classifications providing an overview of international trade based on the detailed commodity classifications (HS, SITC, CPC)
- Classification of goods by end-use category differentiating between intermediates that are "generic" (consumed across a wide range of industries related to arm's length transactions) from those that are "specific" to certain industries
  - BEC Rev. 5: Isolates trade in primary commodities and generic intermediates from trade in highly specified intermediates linked to GVC trade (overcoming the limitations of the BEC Rev. 4)
- The new structure of the BEC makes it possible to identify end-use within each of the broad categories

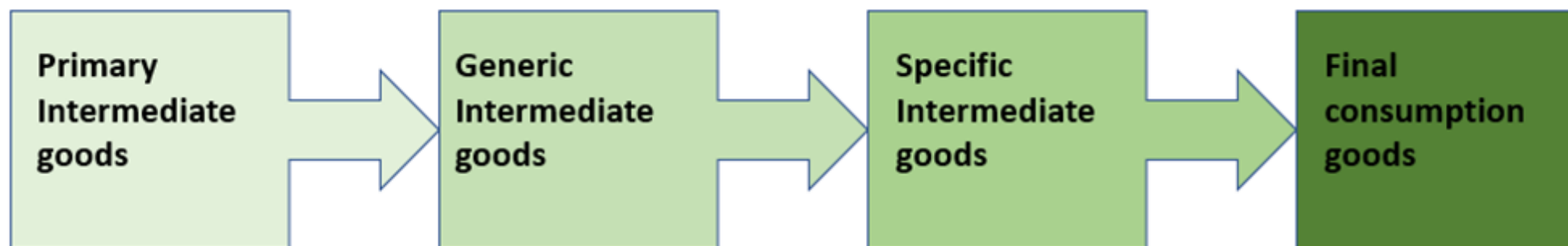
# BEC Rev. 5 Relationships



Source: BEC Rev. 5.

➔ BEC Rev. 5: Full separation between economic and end-use categories, helping in the analysis of GVCs

# Value-added chain as defined in BEC Rev. 5



Source: BEC Rev. 5 and author's own elaboration

- Specified processed intermediates, as defined in the BEC Rev.5, are highly dependent on the industry for which the goods are made.
- Moreover, as specified in the BEC manual, in some cases parts and components are produced according to the specific requirements of one or a few buyers, with a single or small number of downstream uses.
- On the other hand, the generic intermediate goods can normally be found further upstream in the value chain, more linked to an arm's length type of trade, rather than being related to global value chains

# Data and calculation method (1)

- Before being able to use the data from UN Comtrade we had conducted substantial re-arrangements, re-classifications and calculations



- Starting with the BEC classification Rev. 5, we first match sectoral trade statistics (at the six-digit HS 2017 classification level) with the specification dimension in BEC Rev.5
- We then adjust the original data to match sectoral series so that they are consistent with the ISIC Rev.4 industries using the CPC classification as an intermediary. (*Similar procedure as in Duval et al., 2014 and Cigna et al., 2022*)
- This allows us to construct total exports, final goods exports, intermediate exports, and intermediate imports
- At the end we were left with 2092 HS classification product codes at six-digit level for intermediate specific goods (as per the BEC Rev.5 definition), out of a total of 5300 product codes

# Data and calculation method (2)- Sectoral data

- In addition, using gross trade data classified according to HS and converted to ISIC, in line with the SNA 2008 manual, we have divided the data into sectors for the sectoral analysis (the same industries used in OECD-WTO TiVA database)
- We conduct the sectoral classification both for intermediate and final goods in manufacturing trade
- We cover all manufacturing sectors from C10 to C33 according to ISIC Rev. 4

# Data and calculation method (3)- High tech products

- A similar procedure was followed for obtaining the high technology products



- We used a Eurostat list based on the OECD definition that contains technical products for which the manufacturing involved a high intensity of research and development
- In order to ensure consistency with the data on intermediate specific goods, as outlined above, we conducted a similar re-arrangements, reclassifications and calculations before getting the final data.
- Starting from the SITC Rev. 4 list, we obtain the HS corresponding products, which are then matched to the ISIC Rev. 4 products to obtain the sectoral classification
- At the end we were left with 311 high-tec products in the HS classification

# Stylized facts (1)

- **Table 1.** Share of high-tech products in total exports

	1996/1997	2000	2010	2019
Albania	0.2	0.8	0.6	0.04
Bosnia and Herzegovina		1.2	1.4	3.9
Bulgaria	2.0	1.4	3.3	5.4
Croatia	4.4	5.3	6.6	8.2
Czech Republic	5.7	6.1	8.4	8.9
Estonia	5.6	21.1	3.7	10.6
Hungary	14.6	22.2	18.3	13.9
Latvia	2.8	2.0	4.2	10.0
Lithuania	1.9	2.4	5.8	8.1
North Macedonia	1.4	0.8	2.3	3.2
Poland	1.5	2.2	3.7	6.1
Romania	0.8	3.5	8.5	8.5
Serbia		2.1	3.2	2.8
Slovakia	2.7	3.2	6.0	9.0
Slovenia	2.9	3.5	4.9	7.3

- In general, the countries in our sample managed to increase the high-technology content of their export structure over the period, with the exception of Albania and Montenegro
- Nevertheless, we can observe different patterns in terms of magnitude and, in certain cases, high volatility in time.

Source: Own calculations based on UN Comtrade database



# Stylized facts (2)

• **Table 2.** Share of high-tech products exports per sectors, 2019

	Chemic. & non-metal. mineral prod.	Basic metals & fabr. metal prod.	Comput., electr. & electron. equip.	Machin. & equip.	Transp. equip.	Other manufac.
Albania	0.9	0.0	17.6	0.5	0.0	0.0
Bosnia and Herzegovina	5.2	9.3	12.1	5.0	0.1	0.3
Bulgaria	4.5	0.0	29.7	1.4	3.1	0.7
Croatia	14.5	3.9	28.0	13.5	2.0	1.4
Czech Republic	4.2	2.9	49.4	7.2	1.6	0.9
Estonia	2.1	0.6	53.1	3.5	5.2	0.7
Hungary	13.6	0.1	36.9	11.0	0.2	1.2
Latvia	5.4	0.1	68.4	4.5	4.0	0.6
Lithuania	9.9	0.6	45.9	4.1	1.3	0.8
North Macedonia	1.6	0.0	17.7	0.1	0.0	0.2
Poland	3.9	0.4	21.4	7.6	7.9	0.4
Romania	3.5	0.0	34.5	3.1	0.6	0.7
Serbia	2.0	1.3	7.7	13.5	1.2	0.4
Slovenia	1.9	1.2	38.6	3.6	0.1	1.4
Slovakia	11.5	0.0	21.7	3.4	2.8	0.8

- The rise in high-technology exports resulted in these products being the predominant export of certain sectors
- By far the sector that most benefited from the rising exports of high-technology products was computers, electronic and electrical equipment, but also sectors like chemicals and non-metallic mineral products as well as machinery and equipment had significant gains

Source: Own calculations based on UN Comtrade database

# Stylized facts (3)

- **Table 3.** GVC participation per sector (average period 1996-2019)

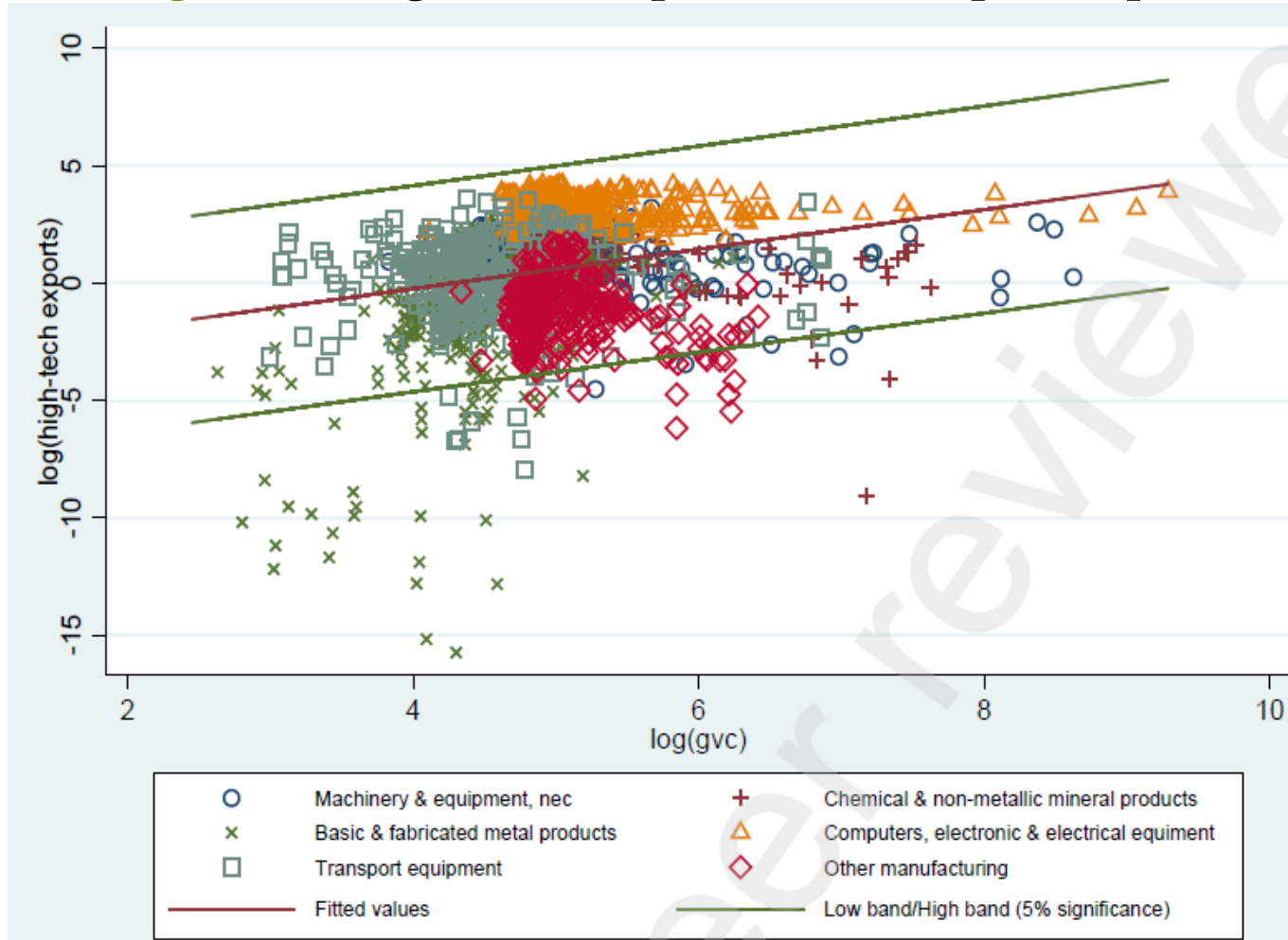
- Looking at the sectoral level, we observe variations among countries, but also among sectors. The four main sectors with the highest GVC participation are: i) computers, electronic and electrical equipment, ii) chemicals and non-metallic mineral products, iii) machinery and equipment, and iv) other manufacturing products.
- These have been the sectors that observed the fastest growth in GVC participation and the ones that achieved the highest integration in the European manufacturing hub.

	Textil., apparel, leather	Wood, paper & printing	Chemic. & non-metal. mineral	Basic metals & fabr. metal	Comp. & electr. equip.	Mach.& equip.	Transp. equip.	Other manuf.
Bosnia and Herzegovina	49	39	171	51	235	126	105	100
Bulgaria	55	86	145	24	173	128	103	168
Croatia	43	53	146	118	163	184	43	190
Czechia	55	78	127	71	128	95	72	129
Estonia	43	44	142	100	182	135	67	121
Hungary	55	127	141	85	132	137	107	146
Latvia	42	48	192	57	228	187	133	149
Lithuania	50	88	119	121	142	137	55	123
North Macedonia	42	343	186	27	258	327	140	350
Poland	55	85	134	64	162	151	85	116
Romania	58	63	163	67	174	132	83	125
Serbia	53	99	119	147	182	159	94	163
Slovakia	47	53	122	52	165	125	65	158
Slovenia	53	60	109	55	105	88	58	120

: Own calculations based on UN Comtrade database

# Stylized facts (4)

- **Figure 1** : High-tech exports vs GVC participation index

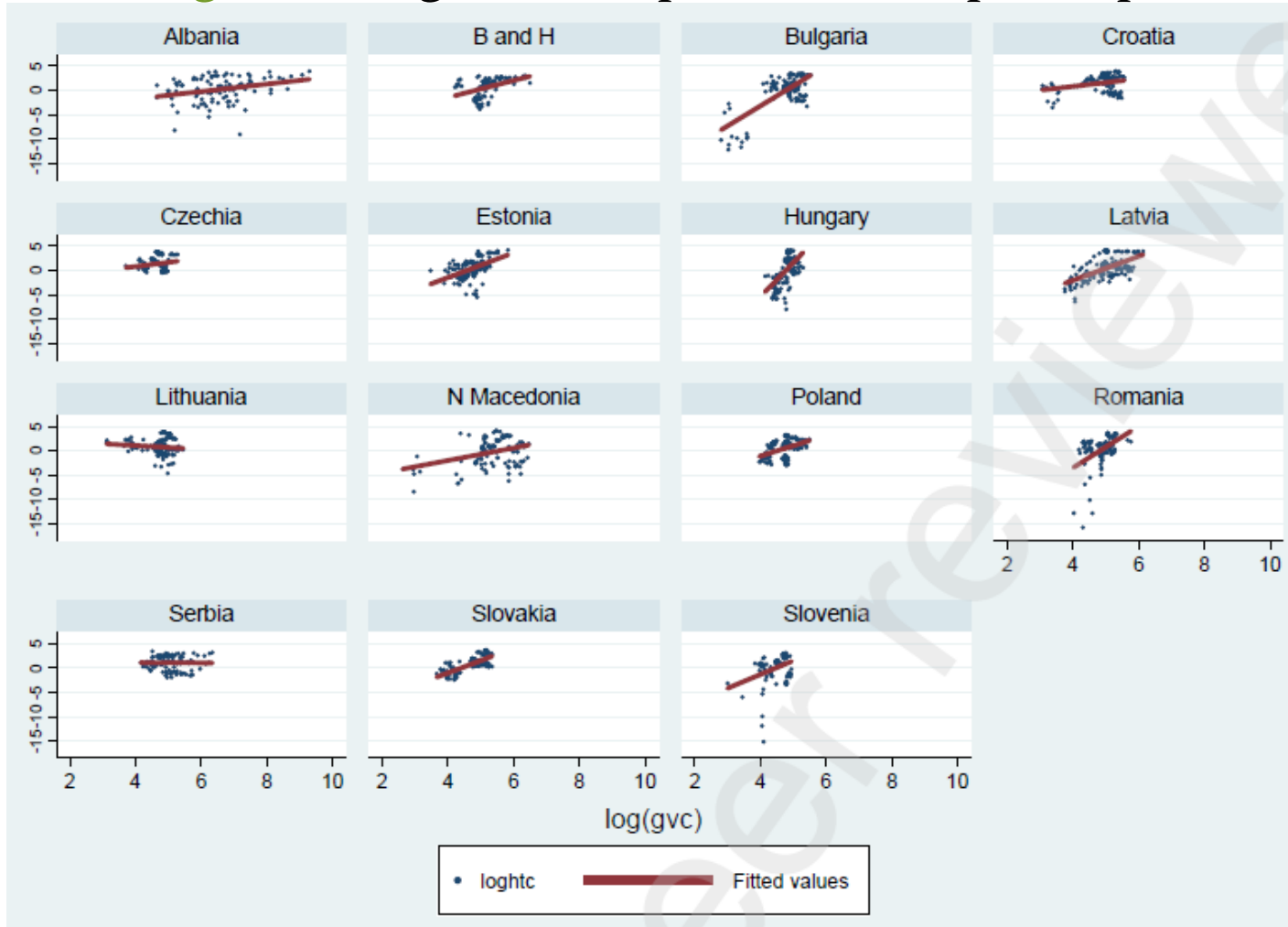


- Positive link between the participation in global value chains and high-technology exports
- This positive relationship is more pronounced in industries such as machinery & equipment; computers, electronic & electrical equipment; and chemical & non-metallic mineral products.

Source: Own calculations based on UN Comtrade database

# Stylized facts (5)

- **Figure 2:** High-tech exports vs GVC participation index by country



- The positive connection between GVC participation and high-tech exports holds, in general, when the correlation between both variables is studied country by country
- This can be seen as first evidence supporting our hypothesis about the gains in terms of a higher adoption of technology in exported goods from greater involvement in the international division of production

Source: Own calculations based on UN Comtrade database

# Methodology

- PD Estimation methods:
- Fixed effect estimation (Hausman test)
- FE with lags and 2SFE regression with IV (for reverse causality)
- Our instrumental variables:
- Aggregate model: Average GVC participation rate in the EU and the GVC index by country lagged one period
- Sectoral model: Average GVC participation in the EU at the sectoral level and the GVC index by country and sector lagged one period
- Scope Countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, N. Macedonia, Poland, Romania, Serbia, Slovakia and Slovenia
- Yearly period: 1996-2019

# The model

- Dependent variable: Share of high-technology products in total exports (in logs.)
- Main explanatory variable: GVC participation index (in logs.)
- Control variables: Human capital, Innovation

## Regression model (equation)

$$\ln HTExports_{c,s,t} = \alpha_0 + \alpha_1 \ln GVC_{c,s,t} + x_{c,t}'\beta + \gamma_{c,s} + \delta_t + \varepsilon_{c,s,t}$$

$c$  = country

$s$  = sector

$t$  = year

$\gamma_{c,s}$  = country-sectors specific effects

$\delta_t$  = time effects

# Aggregate model (1)

- **Table 5.** Estimation results for high-tech exports. Basic model

VARIABLES	Model 1 FE	Model 2 FE with lags	Model 3 2SFE IV
$\log (GVC\ index)_t$	1.264** [0.587]		1.556** [0.743]
$\log (GVC\ index)_{t-1}$		1.146* [0.599]	
Constant	-4.290* [2.535]	-3.692 [2.594]	-5.126* [0.816]
Country effects	YES	YES	YES
Year effects	YES	YES	YES
Wald $\chi^2$ test year-effects	207.15 (0.000)	816.42 (0.000)	270.42 (0.000)
Hausman test	18.33 (0.006)	18.62 (0.005)	
Weak ident. test – CD F stat.			345.713
Stock-Yogo critical value (5%)			16.85
Stock-Yogo critical value (10%)			10.27
Under-ident. test – Anderson LM stat.			223.854 (0.002)
Observations	329	312	279
Number of countries	15	15	15

- The coefficients on the GVC participation index obtained in both cases (Model 1 and Model 2) are positive and significant, confirming the existence of a technology adoption and technological upgrading of exports from greater integration in GVC.
- In Model 3 we use instrumental variable (2SFE\_IV) estimation. The coefficient on the GVC index is positive and highly significant, thus ratifying the beneficial impact on the technological structure of exports from a greater participation in global value chains found before

# Aggregate model (2)

- **Table 6.** Estimation results for high-tech exports. Extended model

VARIABLES	Model 1 FE	Model 2 FE with lags	Model 3 2SFE IV
$\log(GVC\ index)_t$	1.302** [0.599]		1.450*** [0.198]
$\log(GVC\ index)_{t-1}$		1.173* [0.611]	
$\log(HK)_t$	0.830 [0.530]	0.677 [0.600]	0.556*** [0.161]
<i>Constant</i>	-8.071** [3.607]	-6.757* [3.561]	-7.313*** [1.134]
Country effects	YES	YES	YES
Year effects	YES	YES	YES
Wald $\chi^2$ test year-effects	127.76 (0.000)	351.18 (0.000)	127.79 (0.000)
Hausman test	29.03 (0.000)	30.41 (0.000)	
Weak ident. test – CD F stat.			350.210
Stock-Yogo critical value (5%)			16.85
Stock-Yogo critical value (10%)			10.27
Under-ident. test – Anderson LM stat.			223.714 (0.000)
Observations	324	308	278
Number of countries	15	15	15

- The table presents the regression results including human capital,  $HK_1$ , as an additional covariate influencing the technological composition of exports
- The coefficient is positive, suggesting that countries with abundant human capital are also those with a greater weight of their high-tech exported goods (Ndubuisi and Owusu, 2021) and thus in a better position to absorb the technology spillovers.
- The GVC participation index remains positive and significant in the explanation of our dependent variable considering both its current or past value (Model 1 and Model 2, respectively) and when it is treated as an endogenous regressor (Model 3).



# Sectoral model

- Table 7. Estimation results for high-tech exports. Sectoral model

	Model 1 FE	Model 2 FE with lags	Model 3 2SFE with IV
$\log(gvc)$	0.417** [0.192]		0.531* [0.286]
$\log(gvc)_{t-1}$		0.359** [0.164]	
Constant	-1.235 [1.104]	-1.623* [1.125]	-2.360* [1.419]
Country-sector effects	YES	YES	YES
Year effects	YES	YES	YES
F-test year-effects /Wald test year-effects	61.87 (0.001)	62.59 (0.000)	61.07 (0.001)
Hausman test	7.29 (0.007)	87.10 (0.000)	
Weak ident. test - CD F stat.			465
Stock-Yogo critical value (5%)			16.85
Stock- Yogo critical value (10%)			10.27
Under-ident. test – Anderson LM stat.			863.411 (0.000)
Observations	1,925	1,861	1,911
Number of id.	90	90	90

- The coefficient on GVC participation are positive and highly significant in all cases.
- Since the study of causality is limited to the same sector, it is not surprising that the impact of this effect is smaller than in the case of the aggregate model.
- On average a 10% increase in the GVC participation index leads to a a rise in the share of high-tech exported goods of around, on average, 3.6% and 5.3%, *ceteris paribus*

# Conclusions

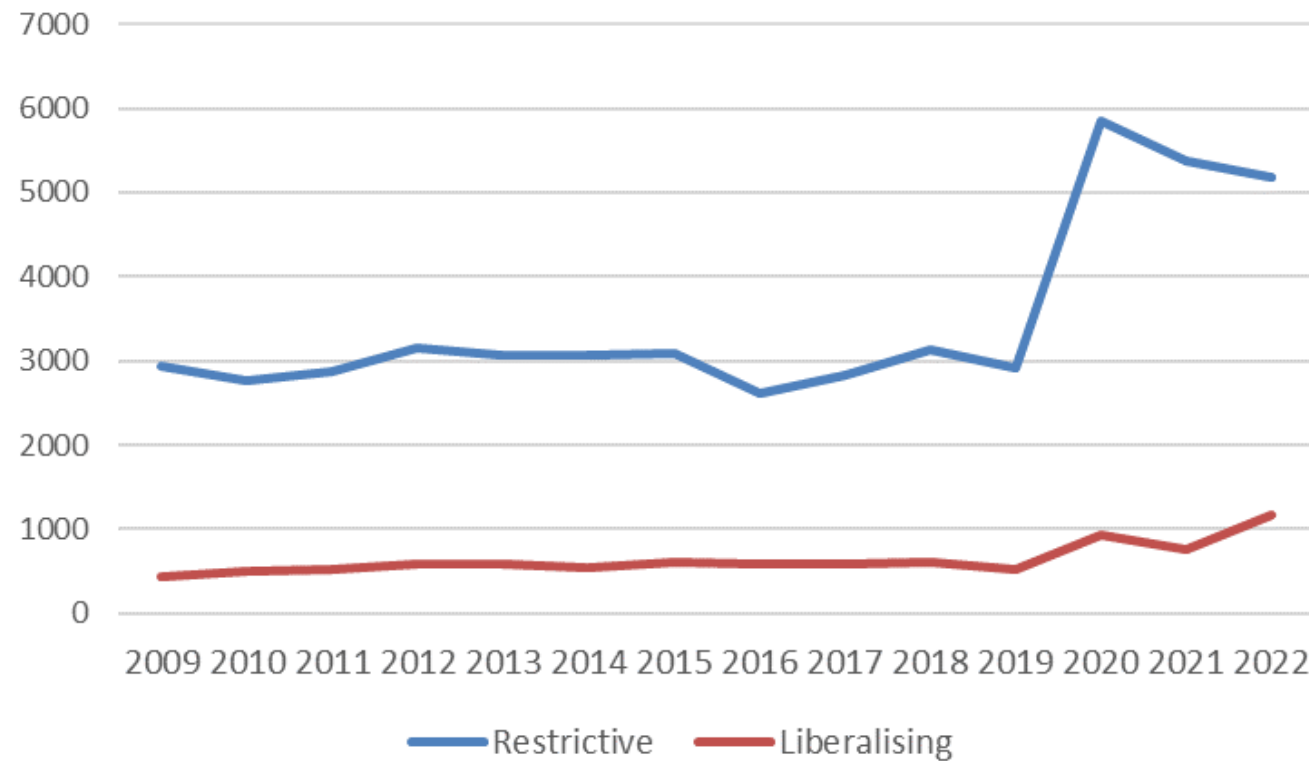
- This paper focus on a group of countries with relatively different level of development and trade integration
- We developed a new methodology for calculating GVC participation indices based on the latest BEC classification and using trade data of specific intermediate goods to analyze the link between GVC integration and the upgrading technology of trade
- The stylized facts reveal:
  1. The weigh and the structure of exports vary across countries and sectors
  2. BUT, in general, there is a positive connection between both the GVC participation indices and the technology structure of exports
- Our regressions show,
  1. Higher participation in GVCs reinforces the technology structure of exports.
  2. This effect is significant both at aggregate and sectoral levels, and robust to potential endogeneity problems)

# Lines of related research (1)

- GVC trade had been undoubtedly one of the key underlying forces that drove world development over the past three decades.
- Nevertheless, in the years that following the 2008/09 recession the speed of global trade integration slowed down
- ... stung by the COVID pandemic-led supply chain disruptions and the war in Ukraine and concerned about rising geopolitical tensions between the West and China, EU companies (and global as well) are embracing strategies to relocate their operations (or parts of it) closer to their target markets
- More importantly, it made nation states keener to build up greater autonomy in the production of strategic goods, which resulted in notable increases in the scale of restrictive trade policies adopted by countries in the wake of the pandemic.

# Lines of related research (2)

**Number of newly implemented trade interventions globally**



Source: Global Trade Alert

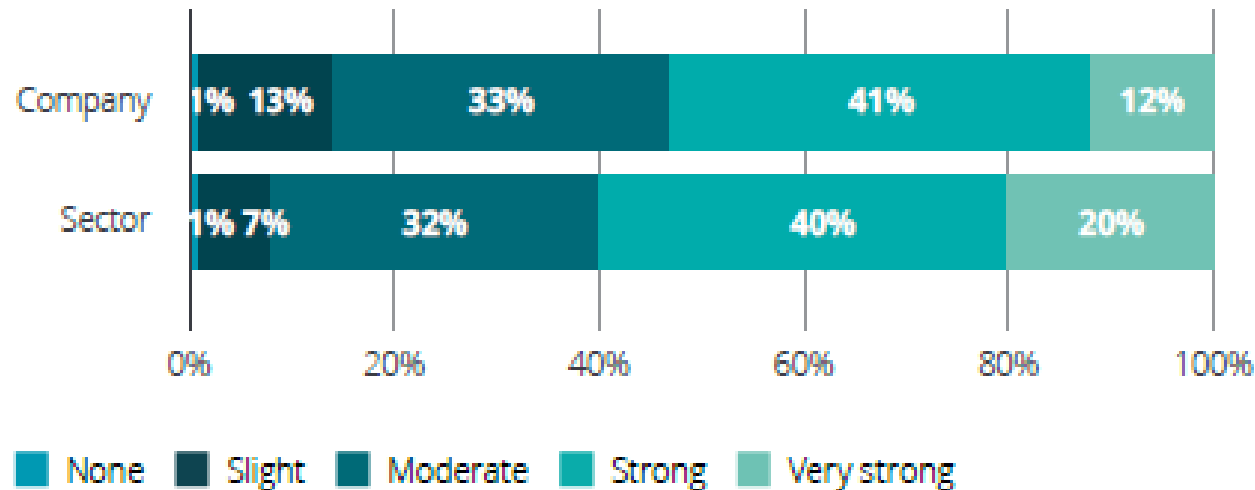
# Lines of related research (3)

- Hence, the ‘new normal’ is likely to see a greater regionalization of FDI flows and may lead to some restructuring of existing value chains (nearshoring/friend-shoring)
- As nearshoring is a quite recent phenomena, empirical evidence about them is still scarce, so contributions to the literature would be very welcome
- Policy implications are of great importance, as a decision to move manufacturing activities back, may have a strong impact on both employment and economic activity

# Lines of related research (4)

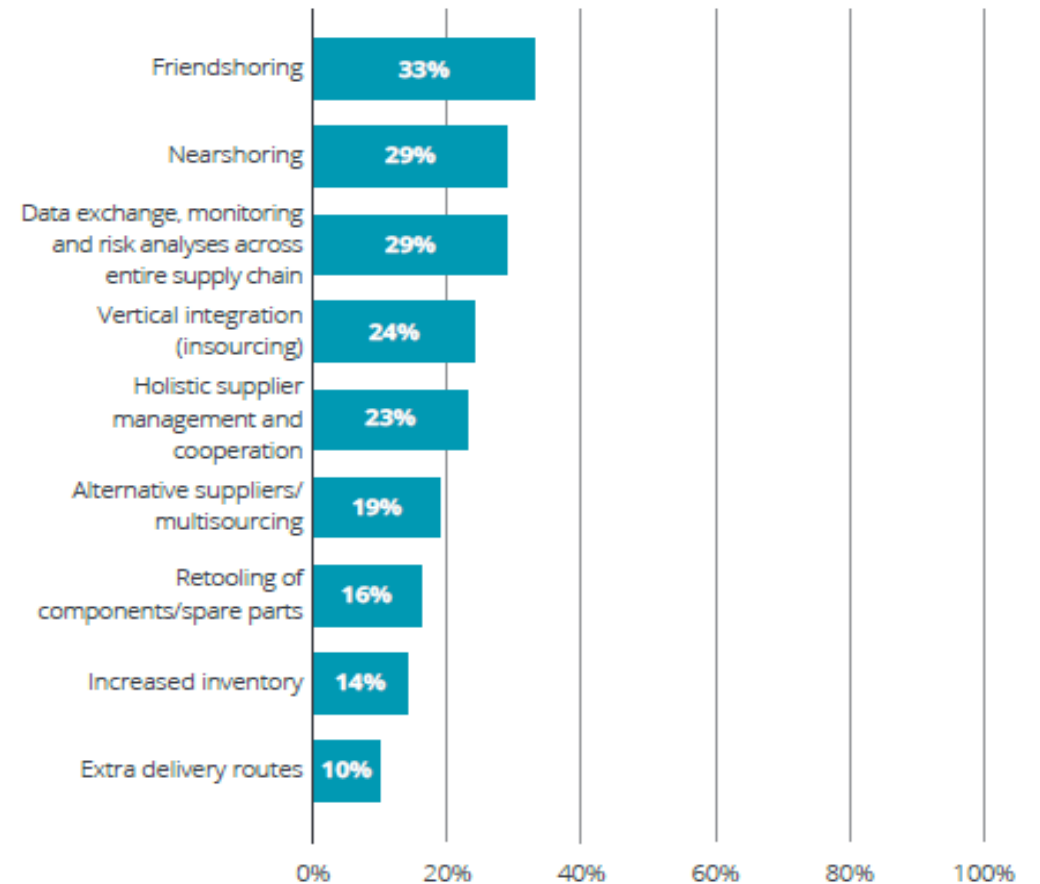
## The impact of supply chain disruption

**Question:** On a scale of 1 to 5 – to what extent is supply chain disruption impacting your company and your sector?



## Planned mitigation measures

**Question:** Which measures are you already planning to pursue as a result of current supply chain disruption?

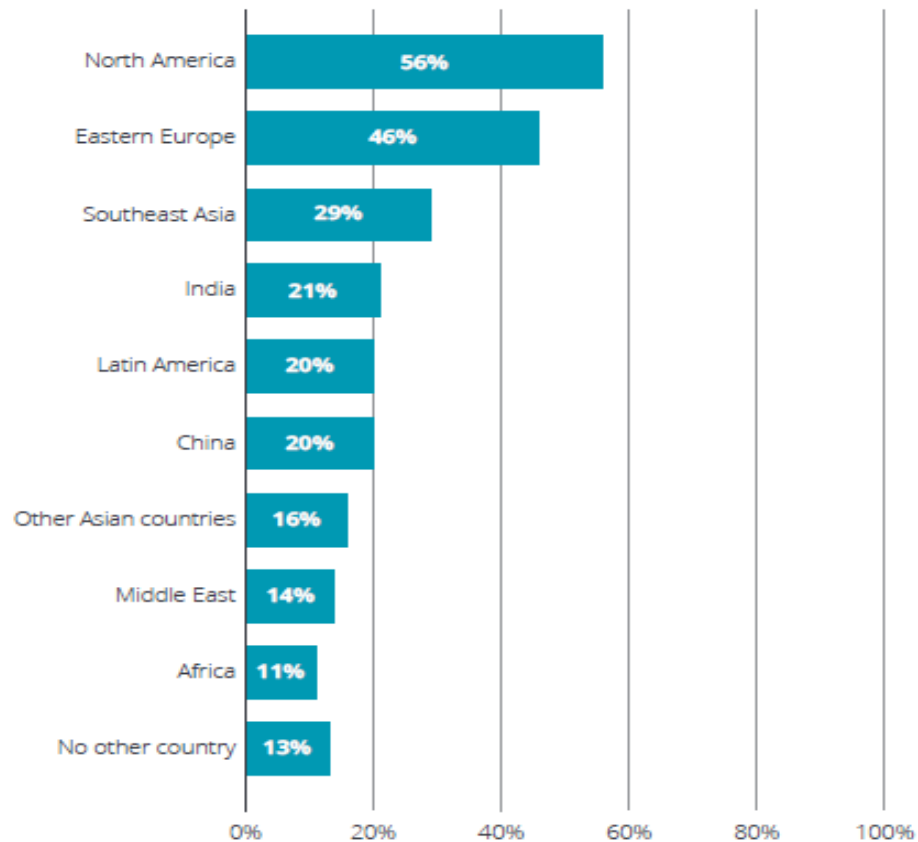


Source: Deloitte 2023

# Lines of related research (5)

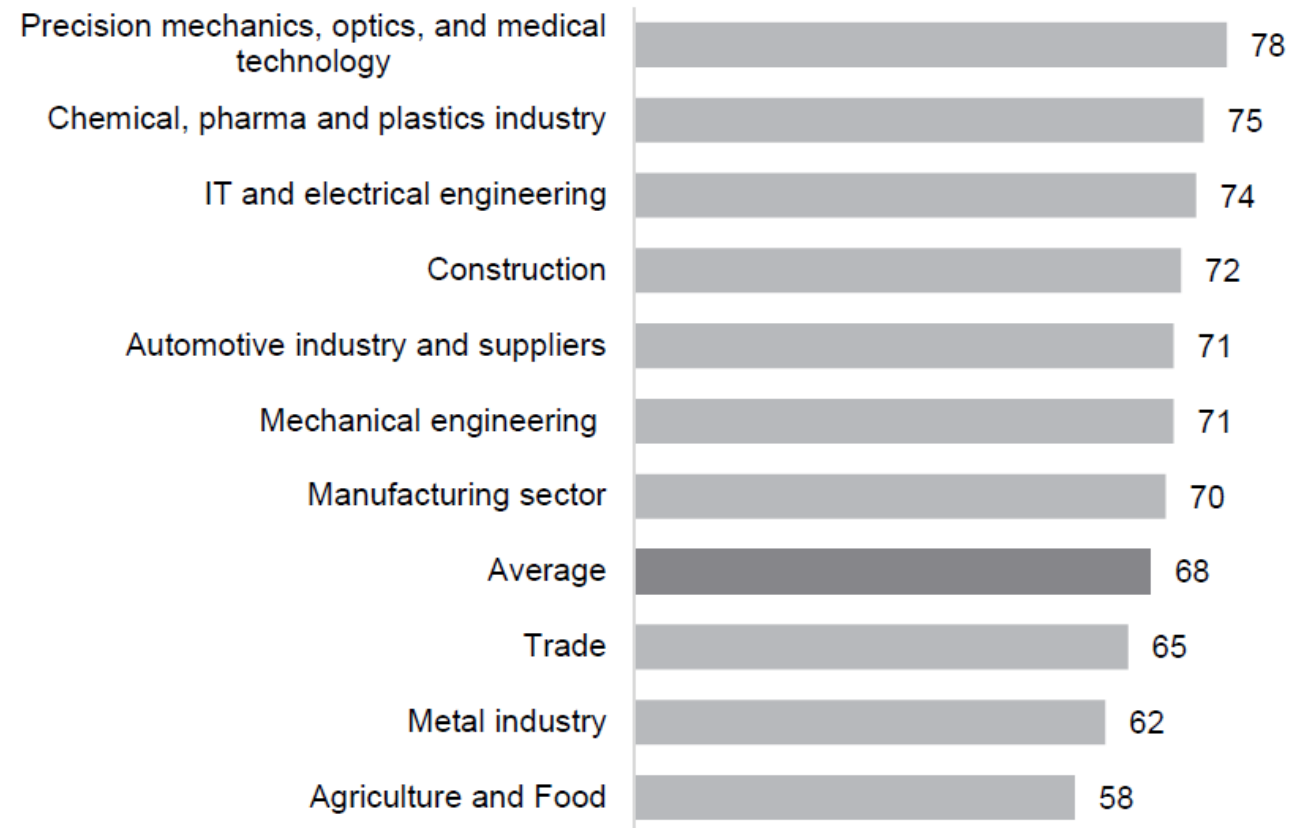
## Targeted investment locations

**Question:** Which countries/regions do you currently find more attractive than Germany as an investment location?



Source: Deloitte 2023

## Share of German companies that plan changes in supply chains, by industry (in %)



Source: DIHK Going International survey 2022

# Lines of related research (6)

- The number of investments launched in Poland and Romania, jumped 23% and 86% respectively, while in other southern parts of Europe like Portugal and Italy they increased 24% and 17%, respectively (*company survey data by Ernst and Young*).
- Moreover, 52% of companies responded saying they were creating more regional supply models, 47% near-shoring closer to customers and 46% reshoring activity back to their domestic markets (*company survey data by Ernst and Young*).
- Two thirds (63%) of the companies surveyed say they plan to restructure their supply chains in the next five years – while a similar number (67%) of industrial companies intend to relocate procurement capacities to more politically stable areas.
- The nearshoring trend has led to a 29% increase in demand for factory space in Europe in 2022. The rush for space from manufacturers is benefitting Central and Eastern European (CEE) countries, according to real estate consultant Cushman & Wakefield.



# Lines of related research (7)

- While the rise of GVCs have played an important role in the synchronization of domestic inflationary processes, giving rise to what the literature has called "globalization of inflation"
- the increasing cost of energy and the transition to a decarbonised economy have also contributed to rising prices, generating the so-called "green inflation".
- seeks to deepen the study of the abovementioned interconnected forces to analyse how they contribute to variations in consumer and producer prices
- More specifically, we aim to analyse the extent to which the expansion of GVCs and the already implemented environmental policies have contributed to the rise of domestic inflation in developed countries and to the global synchronization of inflation