

'Globalancing' How the Netherlands can navigate in a regionalising world



English summary deck on Dutch DenkWerk report "Globalanceren"

JUNE 2021

This document has not been subjected to the same level of iterations and layout efforts as the full Dutch report

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For this material we have spoken to various experts



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- Globalisation
- Digitalization and Industry 4.0



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- Relationship between business, democracy and governance



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Lead economist at World Bank and professor in NY

- Economic inequality
- Global income distribution and growth



Michael McAdoo

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- Trade conflicts and international geopolitics



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Rob de Wijk

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Harry Garretsen

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- Globalisation and regulation



Haroon Sheikh

Senior Scientist WRR & VU, Columnist NRC

- Impact of technology on changing global relations, economics and politics



Marcel Timmer

Director at CPB and professor in Groningen

- Modelling Global Value Chains and trade
- Productivity and added value by Dutch industry



Philipp Carlsson

Chief economist at BCG

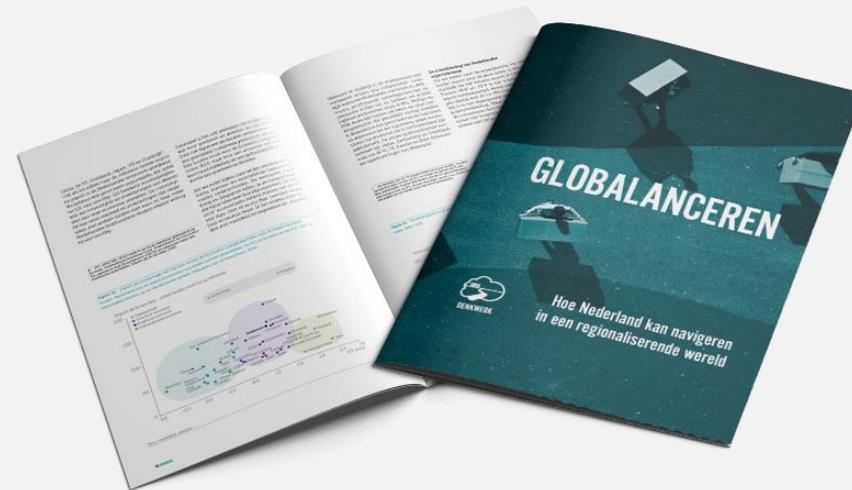
- Macroeconomics, growth and productivity
- Monetary policy, debt sustainability and regulatory risk

This document contains only a selection of the content that is covered in our report

The objective of this document is to **share part of our findings** with the international community

This document has **not been subjected to the same level of iterations and layout efforts** as the full report

You can find the full report [here](#) (written in Dutch)



'Globalancing'

How the Netherlands
can navigate in a
regionalising world

- 1 Introduction to globalization
- 2 Global trade in goods stagnating
- 3 Geopolitics drives regionalisation
- 4 Significant growth in trade of services
- 5 Impact on the Dutch economy
- 6 How the EU can deal with geo-economics

Appendices

- A China's Belt & Road initiative
- B Service trade protectionism in Singapore



1. Introduction to globalization

The journey of globalization: increased international economic integration until 2008

	Phase 1 : 1870-1950	Phase 2 : 1950-1990	Phase 3 : 1990-2008	Phase 4 : 2008 - ?
Globalization of business model	<ul style="list-style-type: none"> Global raw material sourcing Exports into colonies, nearby markets Rise of international banks 	<ul style="list-style-type: none"> Export based global expansion and emergence of multinationals Plants built in large markets to mostly serve local customer Rapid growth of global financial systems, FDI from DEs to EMs 	<ul style="list-style-type: none"> Globally integrated supply chains emerge (global production in EMs grows from ~10% to ~38%) Emergence of global ITES industry with large low cost offshore centers Large scale global growth into EMs FDI flow start from EMs to DEs 	<ul style="list-style-type: none"> Global (physical) supply chains becoming more regional, local (limited industrial capacity shift from DE to EM) Global digital businesses (and data) and digital revenues grow rapidly 'Smart' global footprint (companies/banks pull back from low scale-profit markets)
Globalization drivers, metrics	<ul style="list-style-type: none"> Industrialization Steam ships Global trade/GDP grows from <10% to 20% 	<ul style="list-style-type: none"> Fast, 2x size steam ships, Invention of containers Global trade/GDP grows From 20% to 38% 	<ul style="list-style-type: none"> Internet Falling tariffs Global trade/GDP grows from 38% to 60% Global FDI/GDP grows 	<ul style="list-style-type: none"> Data, digital technologies Higher tariffs, non-tariff barriers Global trade/GDP stagnates Global FDI/GDP stagnates/falls Global data, services, especially digital services grow rapidly
The business world shaped by	<ul style="list-style-type: none"> Competing empires, rise of US 	<ul style="list-style-type: none"> US hegemony Growth of multilateralism (IMF, WB, WTO...) Rise of DEs (eco, divergence) Rise of middle class in DEs Risks from natural disasters, oil price shock 	<ul style="list-style-type: none"> Rise of China China joins WTO - golden period of multilateralism Rise of EMs (eco. convergence) Rise of Next Billion in EMs Risks from supply chain failures, global financial meltdown 	<ul style="list-style-type: none"> US vs China competition Economic nationalism Weakening multilateralism Slowdown of global and EMs growth, volatile country growths, Rise of Asia Risks from cyber-attacks, local militancy Societal tension (inequity) and climate takes center-stage

Globalisation can be observed through different dimensions; this material will focus on goods, services and geopolitics



Production and
trade of goods



Capital and
investment



Digital and
personal data



Culture and
values



Provision of
services



Mass migration
(incl. refugees)



Knowledge and
intel. property



Geopolitical
collaboration

Focus of this deck

Focus of this deck

The global free market has led to many positive developments

Financial



Increased flow of capital and global GDP growth



Increased household income & higher standards of living across the globe: 1B+ people lifted out of poverty since '90



Better products at lower prices thanks to specialisation, economies of scale and competition on cost efficiency

Quality of life



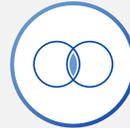
Variety of products to choose from



Spread of knowledge and technology



Increased labour mobility



Cross-cultural exchange and tolerance

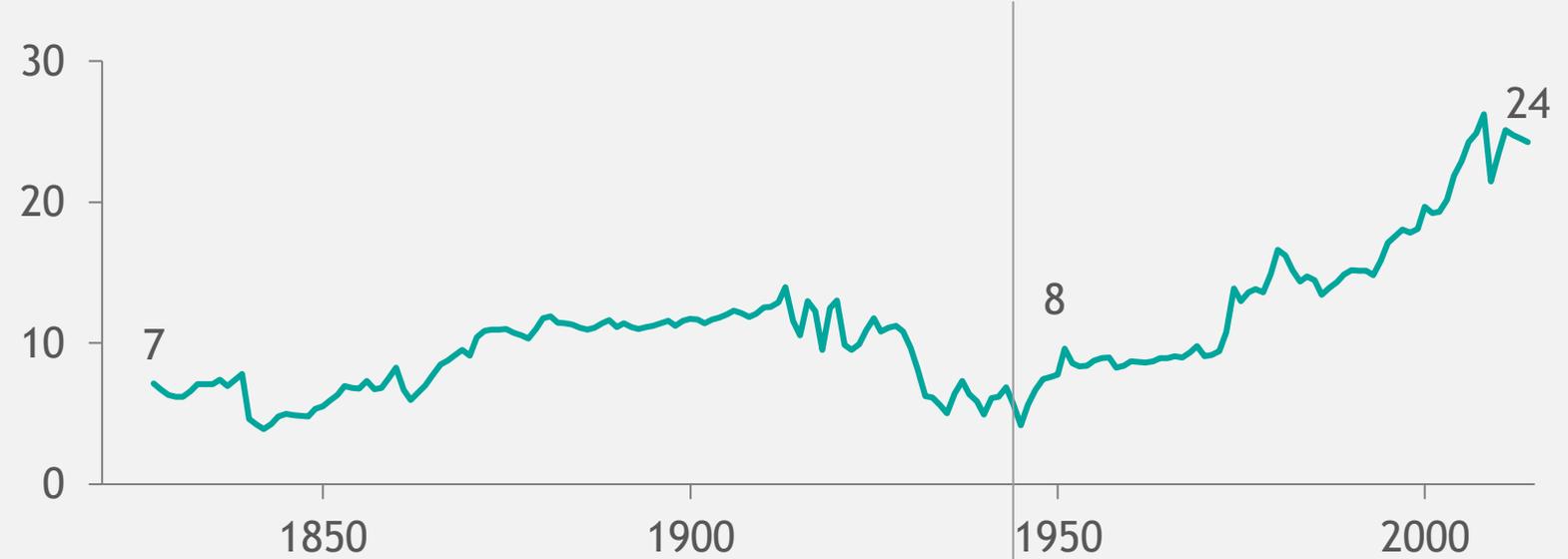


Improved international relations: trade as incentive not to get into conflicts

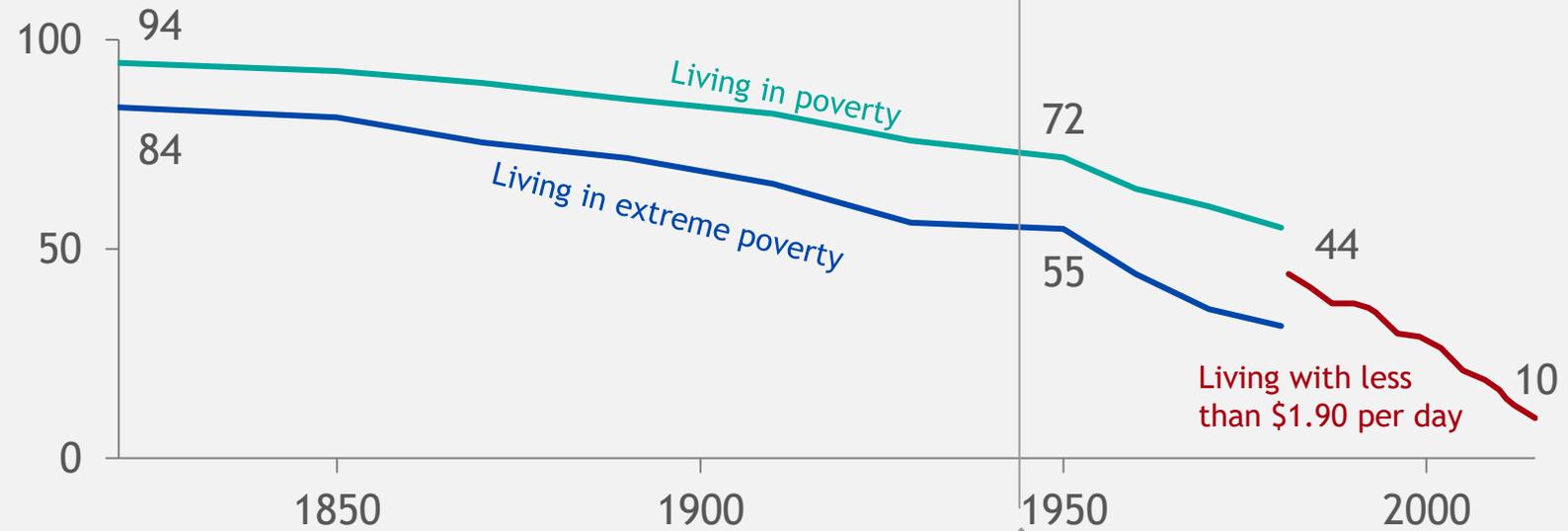
Dramatic rise
in trade

Significant drop
in poverty

Global merchandise exports as a (%) of GDP

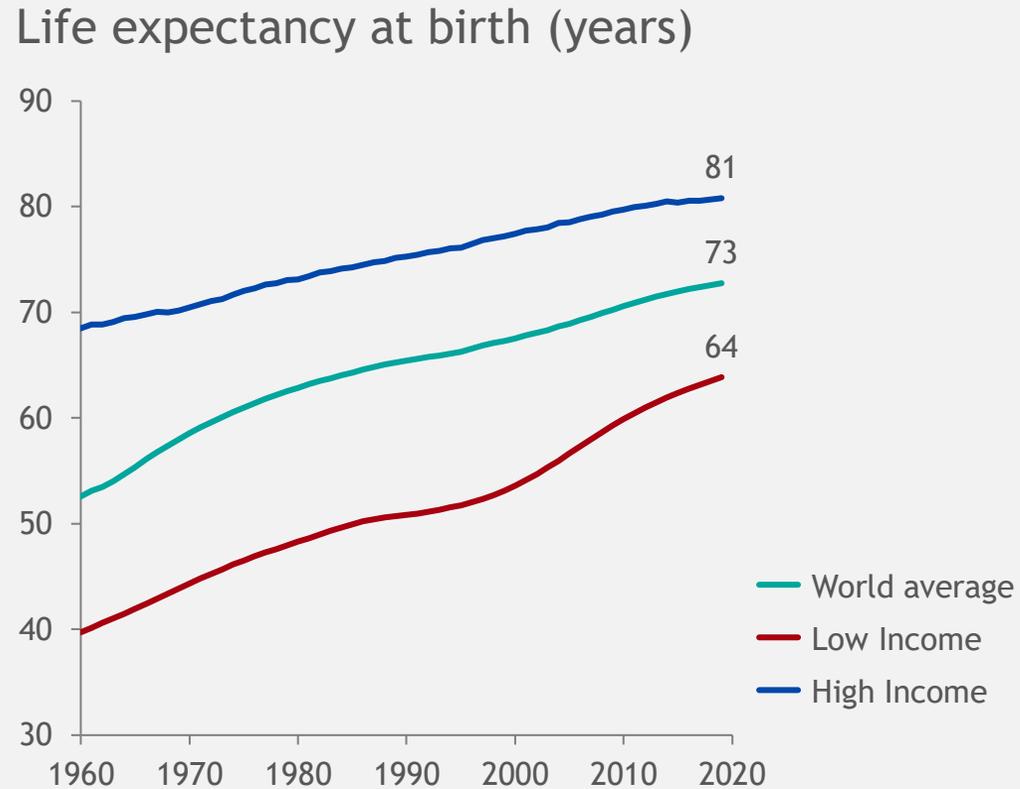


Share of world population (%)



Bretton Woods
Conference

Globalization has helped increase the average life expectancy with 20 years



Source: World Bank, life expectancy at birth.

In the past few decades, the freer movement of goods, capital and ideas has

- Lifted more than 1bn people out of poverty
- Made the sum of human knowledge (internet) available to 4bn people
- Raised life expectancy by two decades on average



2. Global trade in goods stagnating

Global trade in goods stagnating



The downsides of global production of goods and international trade



Limited future growth of trade in goods



Globalization and trade have several adverse effects that should be compensated

Further explanation on next page

- Internal**
 -  **Local income inequality and less job security**
 -  **Decreasing national sovereignty**
 -  **Erosion of local community**
 -  **Lower resilience through open borders**
- External**
 -  **Climate & environmental impact**
 -  **Multinationals avoiding tax internationally**



Majority of potential solutions are not trivial and may trigger undesirable second order effects

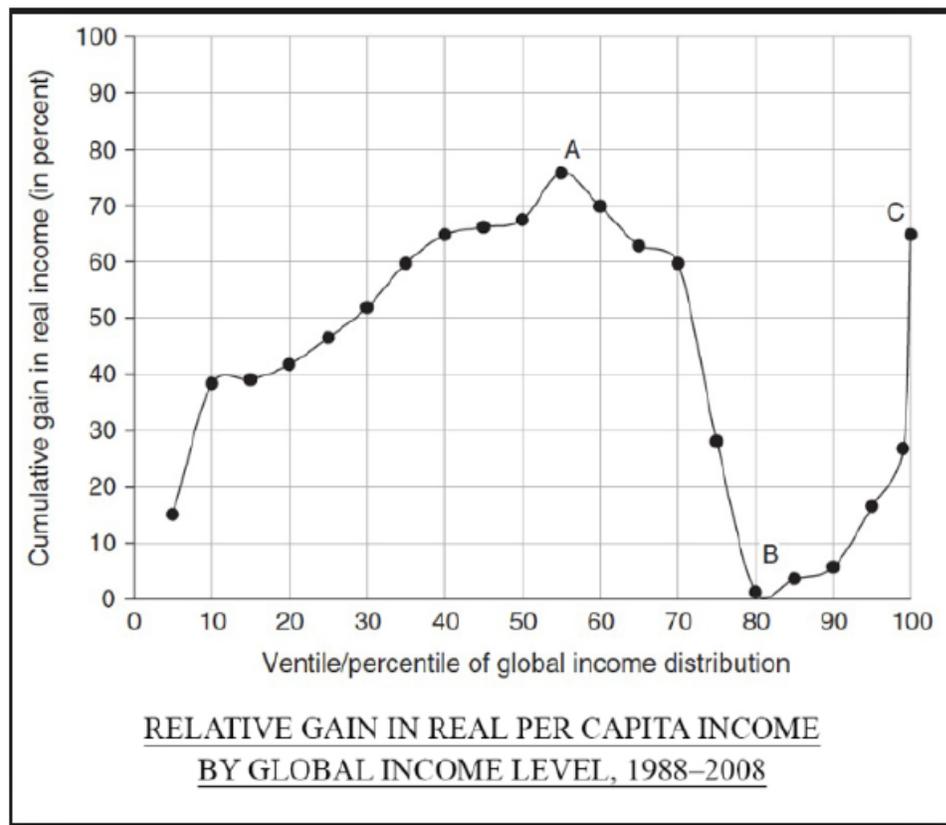
	Adverse effects	Potential solutions	Second order effects
Internal	1 Local income inequality and lower job security	<ul style="list-style-type: none"> Redistribution through taxes and social system 	<ul style="list-style-type: none"> Stronger social security strengthens opposing force to immigration
	2 Political dependency and limits to sovereignty	<ul style="list-style-type: none"> Partial self-sufficiency in strategic sectors (e.g. energy generation, food, medicines and electronics) 	<ul style="list-style-type: none"> Required investments for building capabilities Lower efficiency (e.g. less economies of scale, more expensive access to resources)
	3 Erosion of local community and solidarity; alienation from global politics	<ul style="list-style-type: none"> Increased power at local/municipality level to strengthen community and connection 	<ul style="list-style-type: none"> Stronger community feeds independentist morale; still alienation from wider governance
	4 Lower resilience through open borders (e.g. pandemics, migration, terrorism)	<ul style="list-style-type: none"> Fortified/walled regions (e.g. Fortress Europe) Restrictions at internal borders 	<ul style="list-style-type: none"> Ethical catastrophe at regional borders Economic impact of closing internal borders
External	5 Climate & environmental impact of outsourcing and logistics of value chains	<ul style="list-style-type: none"> "True cost"; the polluter pays, via taxes, certificates and price increases Transparency on full production chains and accountability within HQ 	<ul style="list-style-type: none"> Competitiveness low vs. non-true cost regions Inflation will increase due to price increase Travel & exotic products only for "elite" Difficult to quantify impact of certain effects (e.g. biodiversity)
	6 Multinationals avoiding tax internationally	<ul style="list-style-type: none"> Forcing tax havens to impose a minimum tax rate by applying international pressure Applying additional tax in countries of resource extraction, labour or consumption or restricting the shifting of profits 	<ul style="list-style-type: none"> Low political feasibility to eliminate tax havens Competitiveness low vs. less strict regions

Note: Job loss by automation and robotization left out, since considered cause of digitalization and not globalization only.

Poor working conditions left out since questionable whether only caused by globalization (i.e., what would be the alternative for factory workers in countries with low cost of labour)?



Elephant curve: incomes have increased globally, but not for lower and middle class in wealthy countries (75th to 95th percentile) - rise of domestic inequality



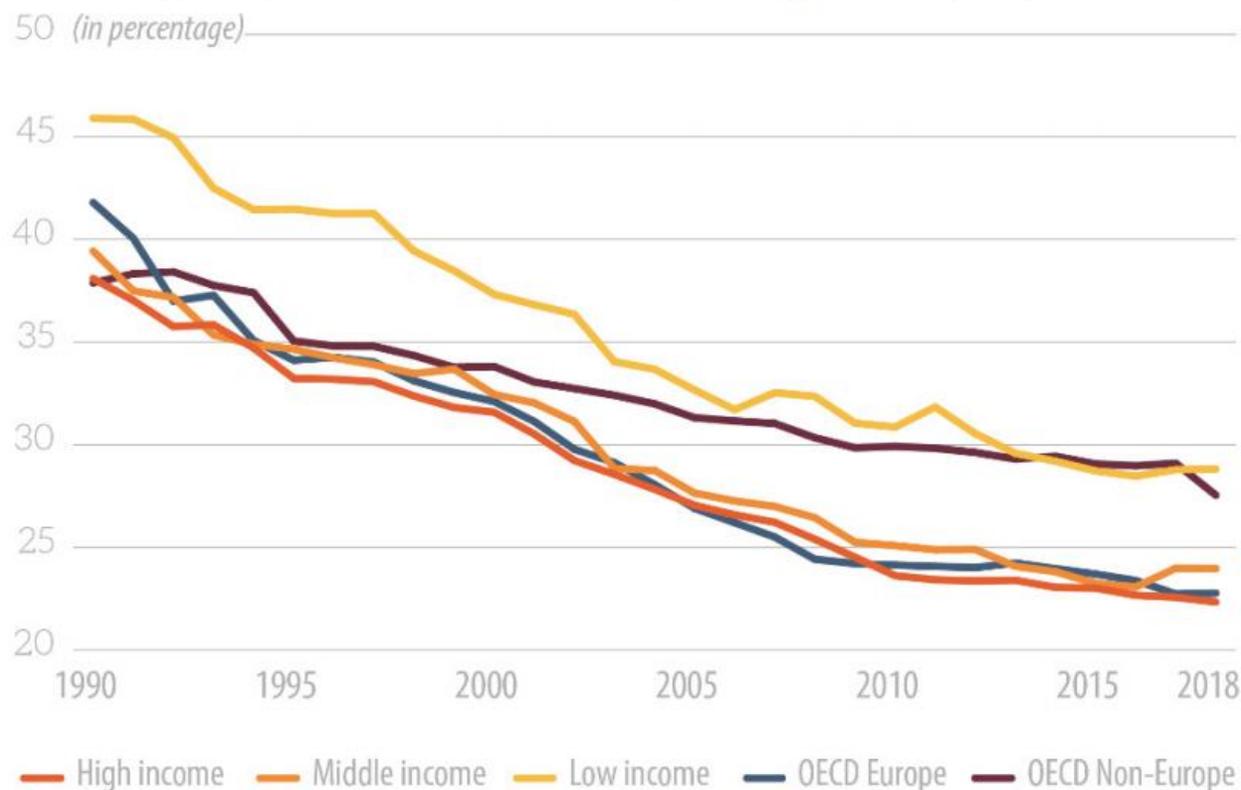
- Percentile 30 to 70 have seen the highest rises in income, standing for economic growth in countries that **benefitted from global production of goods**
- Percentile 75 to 95 stands for the lower and middle class in developed countries. Due to **technological progress and international competition** on the production of goods, they have not benefitted.
- Percentile 99 to 100 stand for the higher incomes in wealthy countries: they have seen a **higher increase in income**
- This has led to a **decrease in global inequality** but an **increase in domestic inequality within developed economies**

Figure 1: Relative gain in real per capita income by global income level, 1998-2008. Reprinted from 'Global Inequality: A New Approach for the Age of Globalization'. by Milanovic, B. (2016). Harvard University Press. Copyright 2016 by The President and Fellows of Harvard College.



Income tax has decreased globally - countries started to compete as the capital and headquarters of multinational corporations became more mobile

Figure 6 – Average corporate income tax rates by country income group



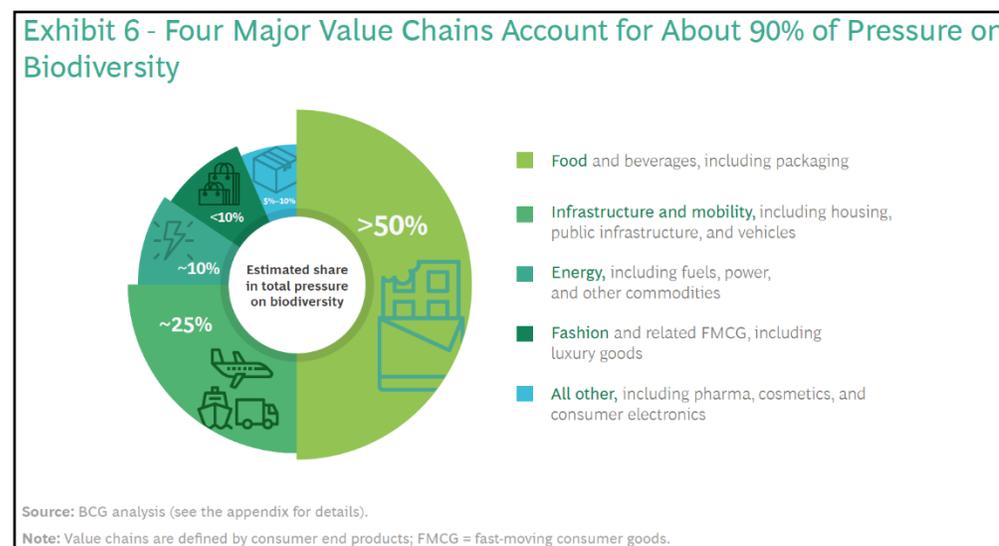
Data source: OECD.

- Corporate income tax has been decreasing globally since 1990
- Corporate tax decreased from about 38% in 1990 to about 23% in 2018 for mid and high income countries
- Corporate tax decreased from 46% to 28% for low income countries
- This shows that wealth and power have also shifted towards multinational corporations



Transport of goods has a negative impact on climate change and biodiversity

- Biodiversity creates significant **economic value in the form of ecosystem services such as food provisioning, carbon storage, and water and air filtration** that are worth **>\$150 trillion annually**—about twice the world’s GDP.
- Five primary pressures—**land-use and sea-use change, direct overexploitation of natural resources, climate change, pollution, and the spread of invasive species**—are causing steep biodiversity loss. The **decline in ecosystem functionality** is costing the global economy more than **\$5 trillion a year**, and the risks to businesses are significant and growing.
- The operations of four major value chains—**food & beverages (50%), infrastructure and mobility (25%), energy and fuels (10%), and fashion & luxury goods (<10%)**—currently drive more than 90% of man-made pressure on biodiversity.





Further growth in trade of goods limited by different drivers



Industry 4.0 is driving further automation of manufacturing and digitalization of products



Labour arbitrage is diminishing for many developing countries



Growing attention for ESG risks and climate change result pressure towards limiting GHG emissions, e.g. by transport of goods



Industry 4.0 causing international trade to slow down - through decentralized production and transformation of physical products into digital services

Automation and advanced manufacturing lead to more local and regional production

- According to ING, 3D printing could lower world trade by 23% in 2060 if growth of investment continues at the current pace

Production is getting more and more customized and personalized towards customer needs

- Nike and Adidas are already offering customizable sneakers, with production facilities closer to the end market of the customer
- Local and automated production allows for smaller batches of production, making customization financially viable

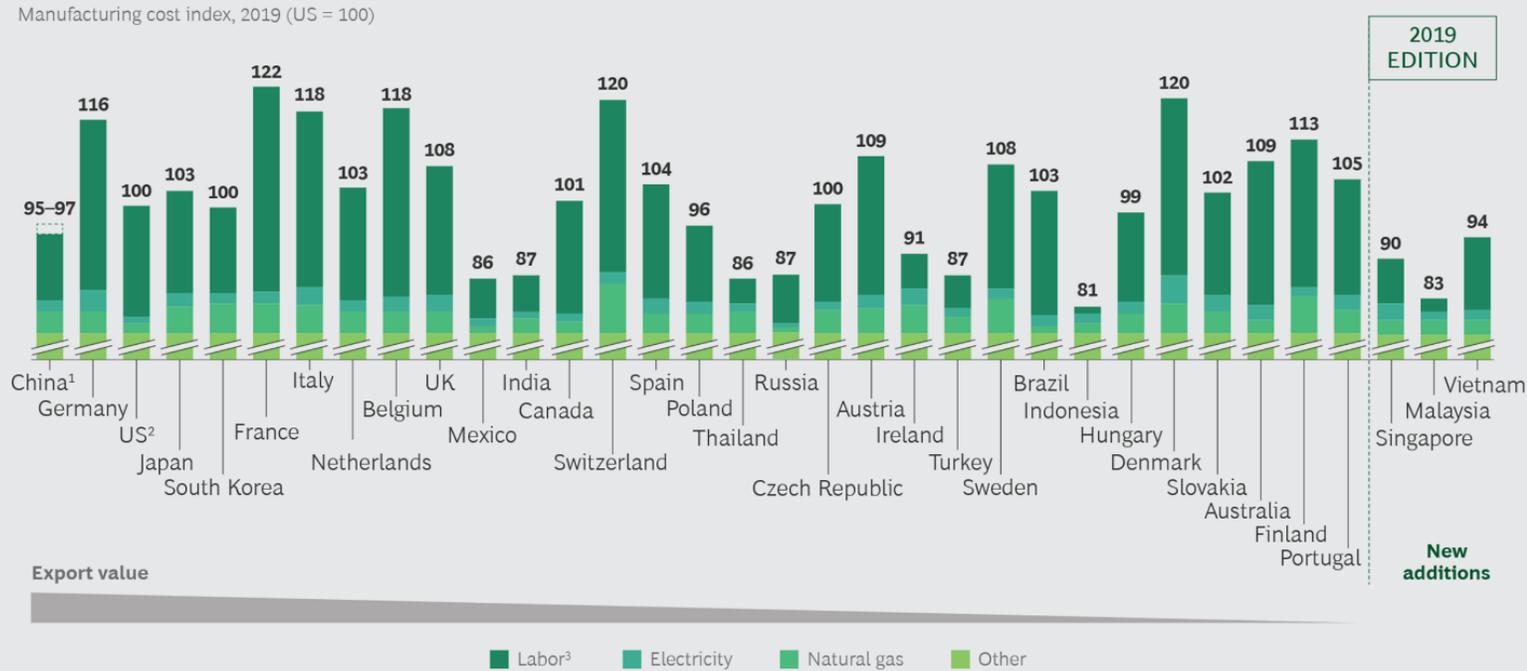
Several physical products have been converted into digital services

- Netflix and Spotify are selling videos and music content as a service, whereas DVD's and CD's were previously traded and transported goods
- More and more, physical goods are connected to digital services, where much of the value and profit is actually in the service (e.g. smartphones with apps, autonomous vehicles with driver software)



Next to that, labour cost arbitrage of China is diminishing

EXHIBIT 1 | The 2019 BCG Global Manufacturing Cost Competitiveness Index



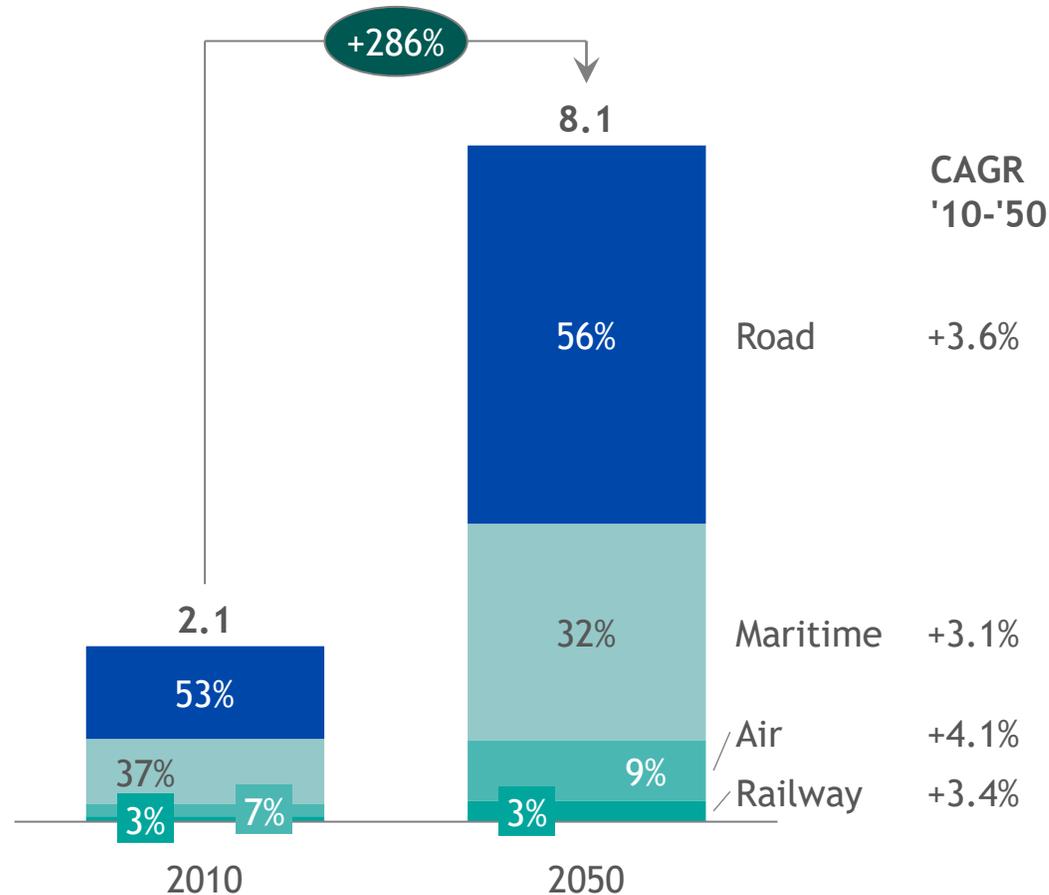
- China is only marginally cheaper than production in European countries
- If productivity-adjusted labour cost are not lower than at home, reshoring can be considered
- Low-cost production may move to counties such as Mexico, India, Thailand, Russia, Turkey, Indonesia or Malaysia

Sources: US Economic Census; Bureau of Labor Statistics; Bureau of Economic Analysis; International Labour Organization; Euromonitor; Economist Intelligence Unit; Oxford Economics; NDRC Price Monitoring Center; International Energy Agency; Eurostat; BCG analysis.
Note: The index covers four direct costs only. No difference is assumed in “other” costs (such as raw-material inputs, and machine and tool depreciation). The cost structure is calculated as a weighted average across all industries. Ukraine, Norway, and Romania were also tracked by the index, but are not shown because they are no longer in Top 34.
¹Range represents the average for all of China (95) and for the Yangtze River Delta region (97).
²Data is for states of the US South.
³Productivity-adjusted.

Note: Labour costs are productivity-adjusted.
Source: BCG, 2019



Freight transport already comprising ~9% of global GHG emissions in 2020, and to increase from 2 to 8 Gt from 2010 to 2050 without significant climate action



- As a reference, the total GHG emission of the Netherlands is about 0.2 Gt of CO₂-equivalent
- Climate action such as **tax on GHG emissions** will cause transport to grow less
- Investors are also increasingly paying attention to sustainable operations - financial KPIs are used to measure **ESG performance**

Source: left: International Transport Forum, 2015. <https://www.itf-oecd.org/sites/default/files/docs/cop-pdf-06.pdf>

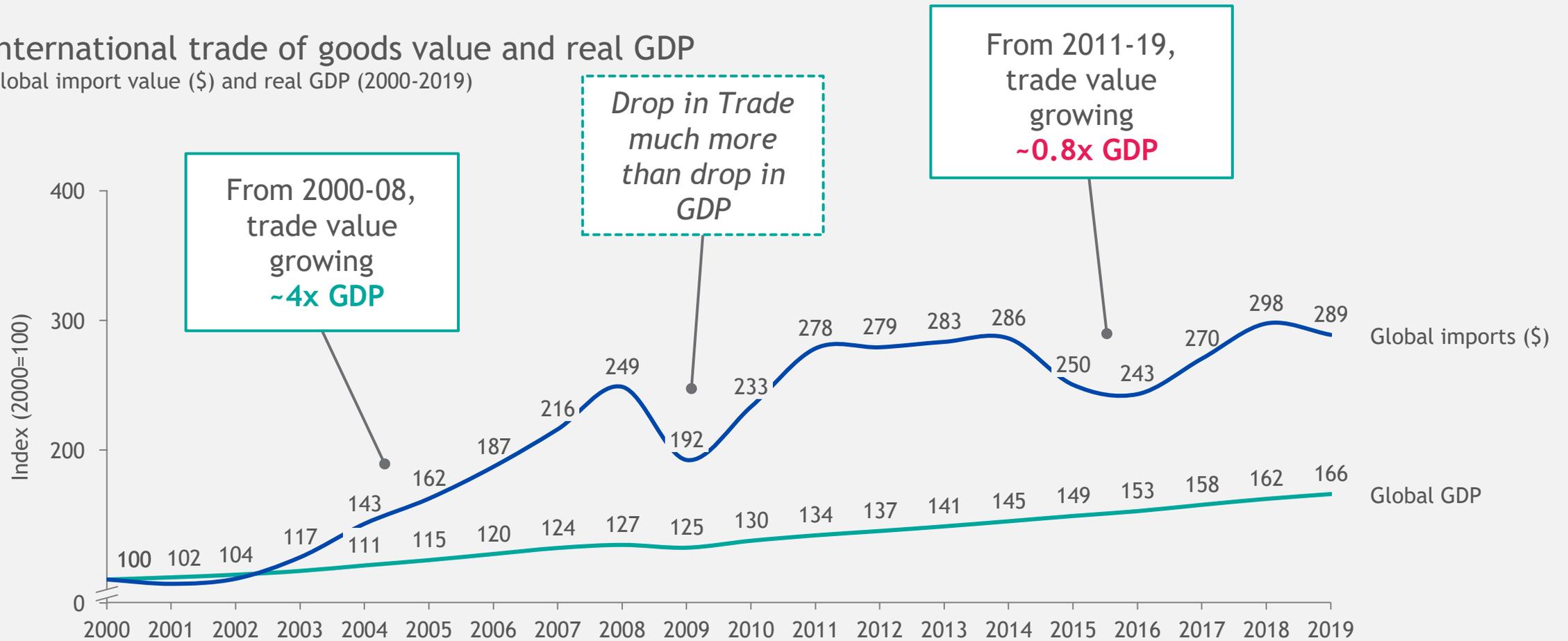
Right: Jan 2020, Hanna Ritchie, ourworld in data; <https://ourworldindata.org/environmental-impacts-of-food#the-carbon-footprint-of-eu-diets-where-do-emissions-come-from>



Post-financial crisis, goods trade already growing slower than GDP

International trade of goods value and real GDP

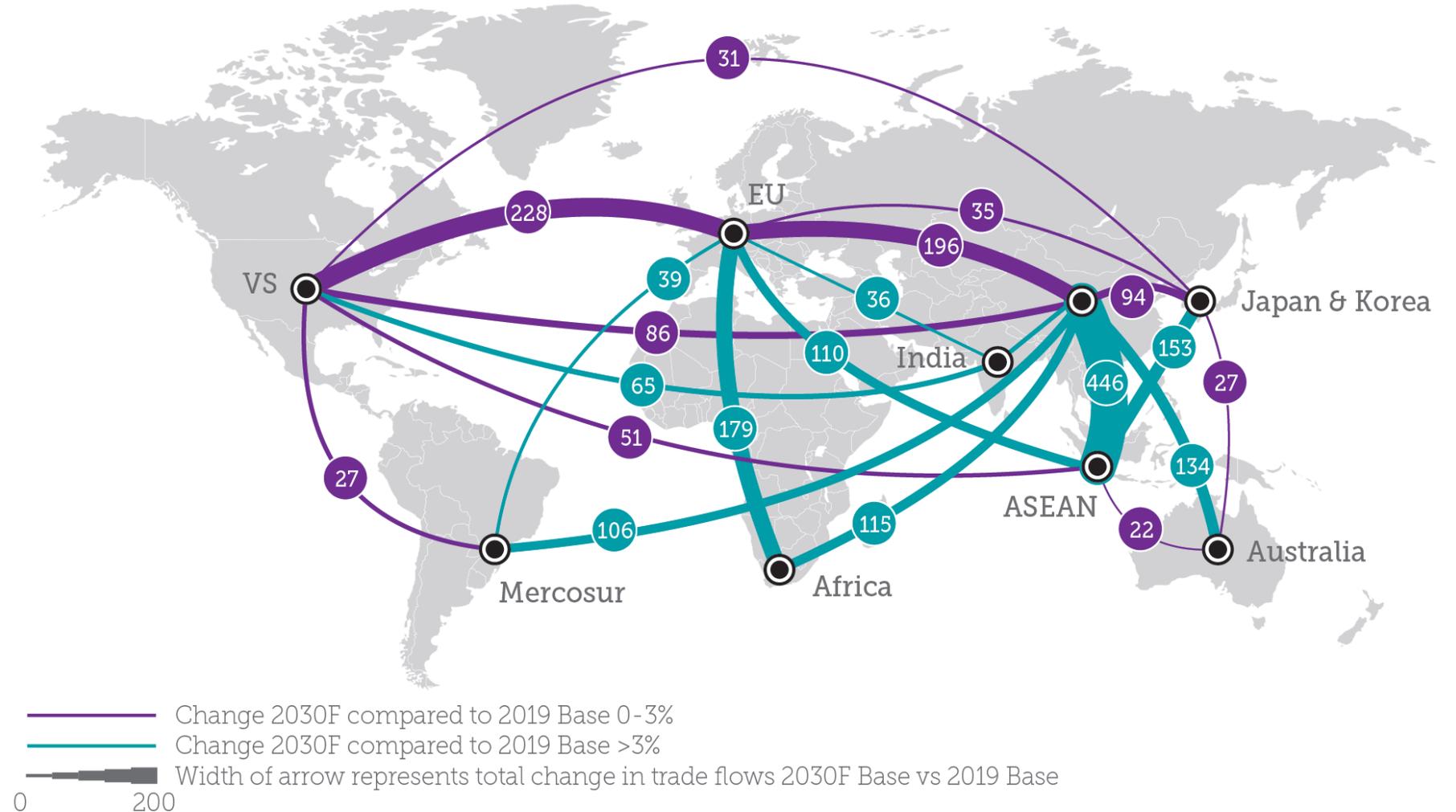
Global import value (\$) and real GDP (2000-2019)



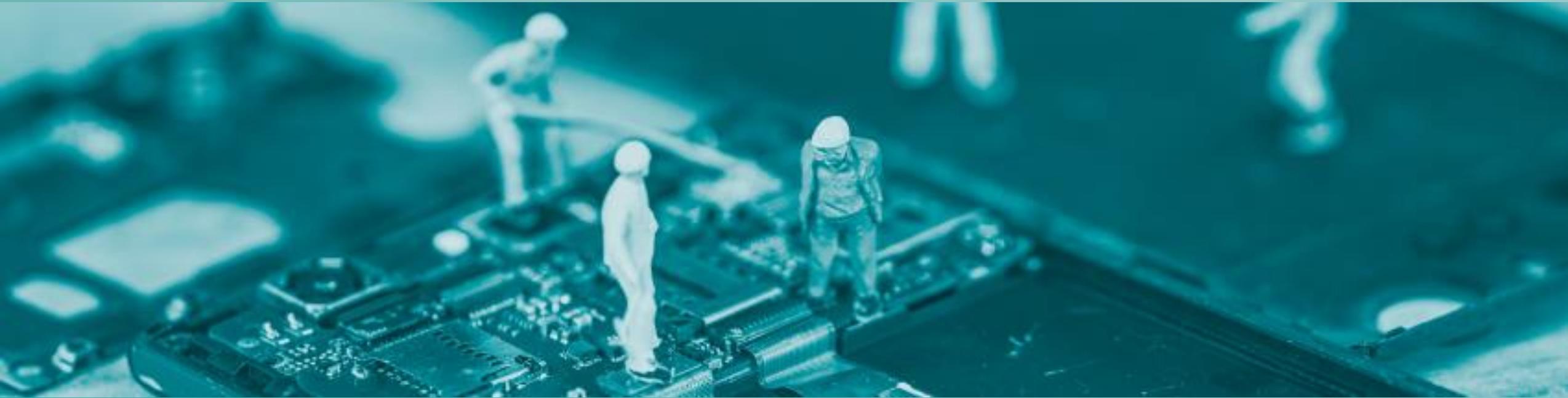


BCG Global Trade Model expects stagnation in US-China-EU trade, however relative growth in ASEAN, Africa, India and Mercosur

Change in trade of goods (major corridors¹, base case, 2030F vs. 2019, \$B)



Note: Does not include trade in services. Corridors in the map above represent ~30% of global trade.
Source: BCG Trade Model 2021, UN Contrade, OECD, WEF, IHS, TradeAlert, BCG Analysis



3. Geopolitics drives regionalisation

Geopolitics



Rise of China and state capitalism



Geopolitical tensions (incl. US-China conflict)

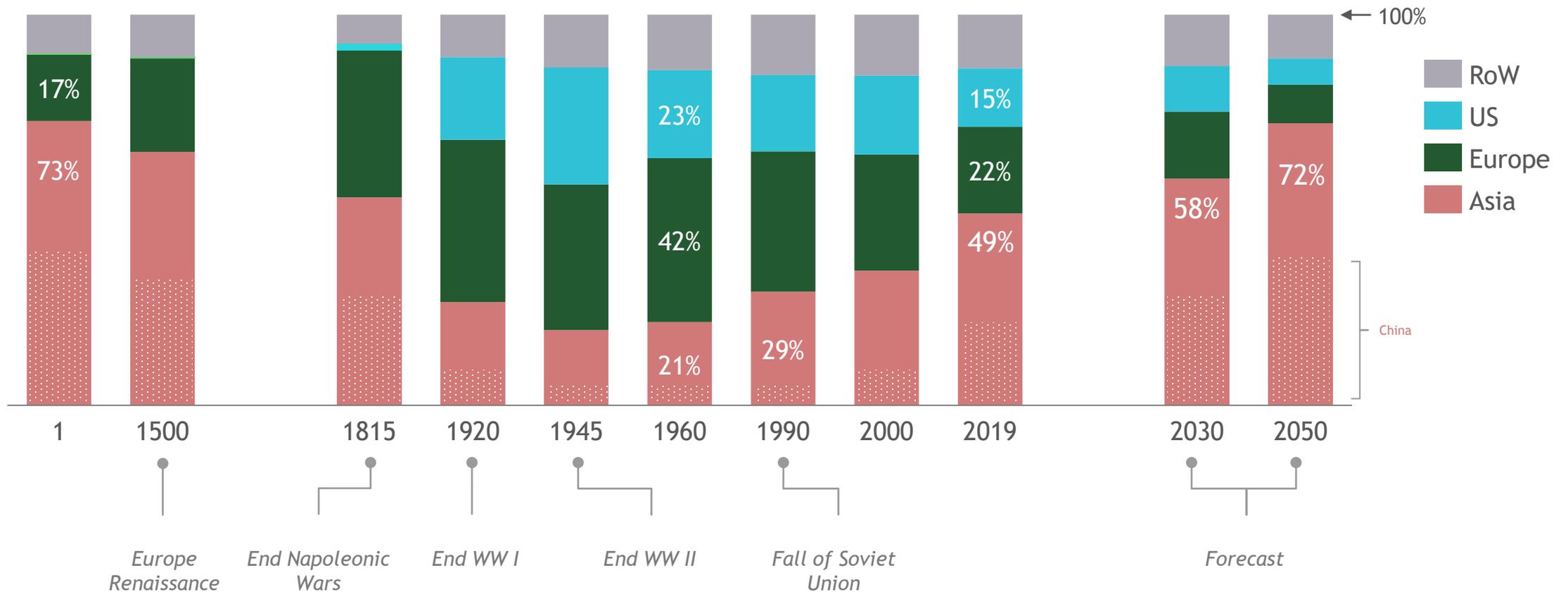


Impact of geopolitics on future trade



Asia returning to share of global GDP proportionate to its population

% share of World GDP at PPP - selected years



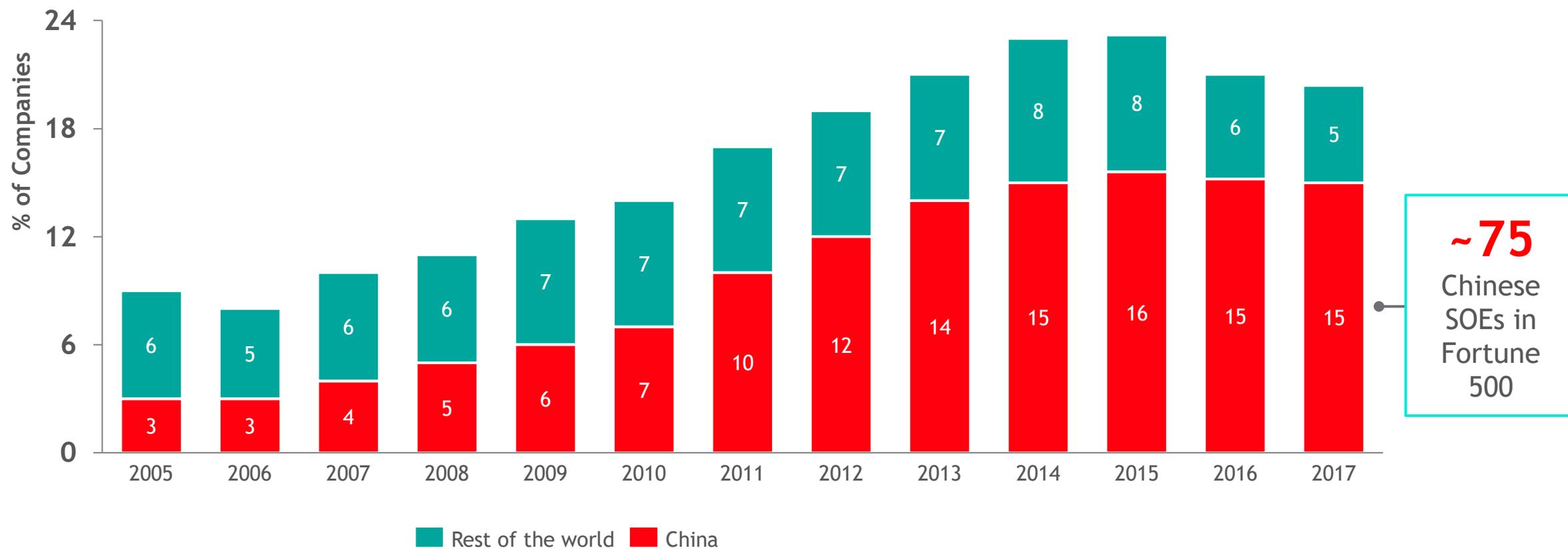
Note: Includes the assumption that growth after 2019 growth will be 2% for US and Europe, 4% for Rest of World and 6% for Asia
 Source: World Bank, *The Maddison Project*, IMF, BCG analysis and estimates



Rise of China is bringing capitalism with Chinese Characteristics

See Appendix A - on how China is developing their Belt & Road initiative

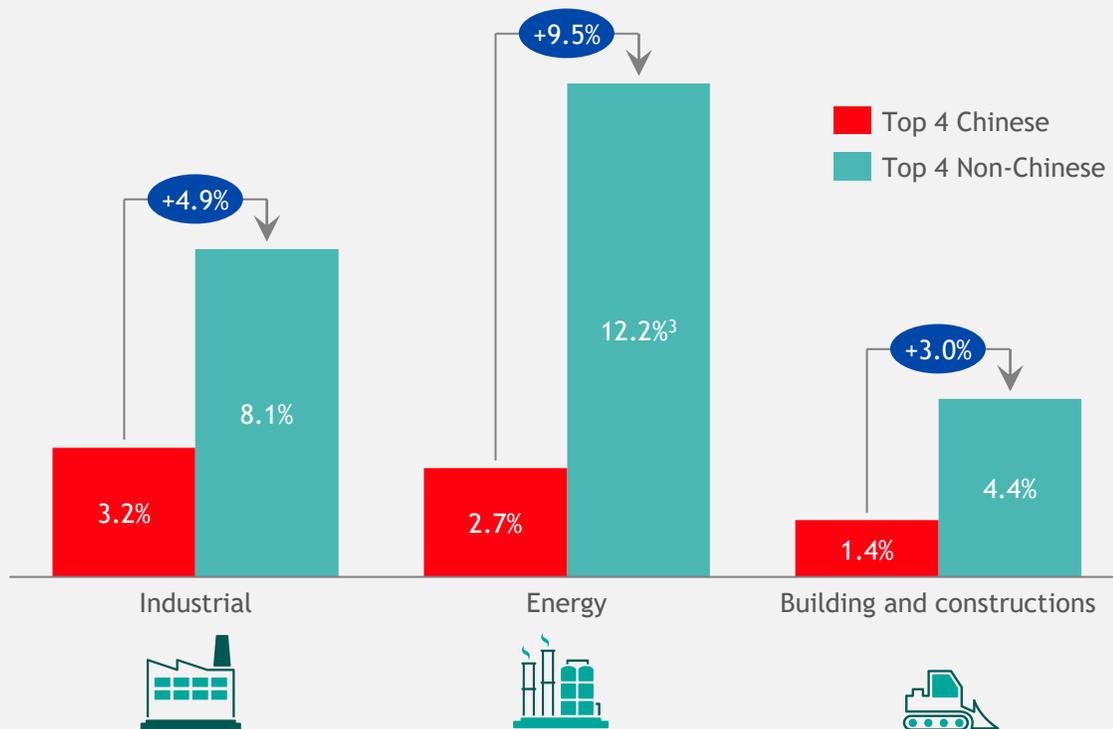
State-Owned Enterprises as a % of Companies Fortune in the Global 500



Note: SOEs defined as having 50% or more government ownership
Source: Fortune Global 500



Top Chinese SOEs have low margins by Fortune 500 standards

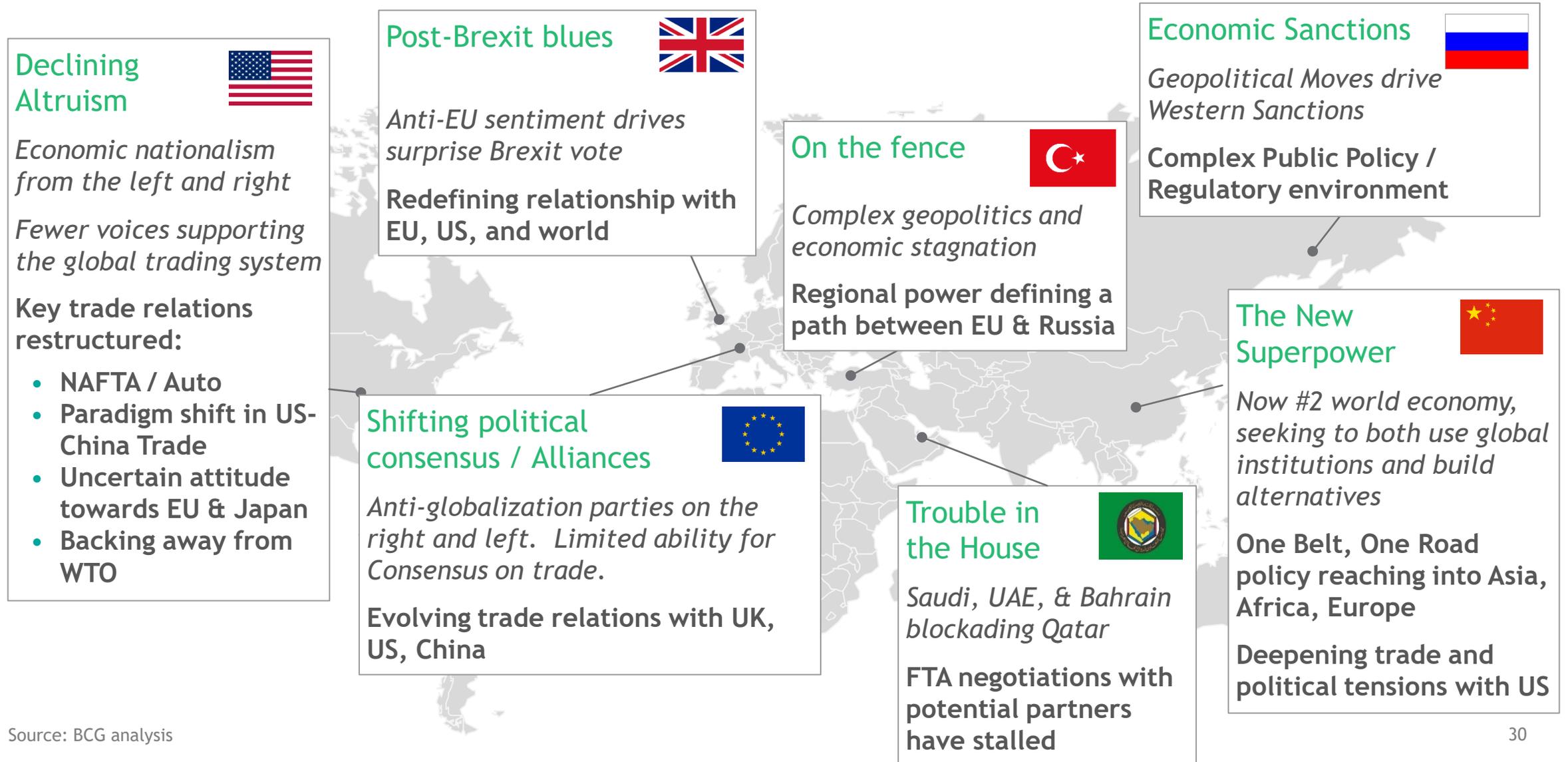


- Out of top 50 from Fortune 500 there are 22 state owned enterprises, of which the **majority are Chinese**
- Chinese state puts **less pressure on short-term profits** than shareholders of other Fortune 500 companies
- This way Chinese companies can focus on **long term investments and growth in global market share**

Note: (1) State owned enterprise with minimum of 50% government ownership. (2) Profit margin is calculated by dividing net profit by revenue. (3) 5.2% excluding Saudi Aramco. Chinese SOEs for Industrial: SAIC Motor, China Resources, Dongfeng Motor Group, FAW Group. Energy: Sinopec Group, China National Petroleum, State Grid Corporation, China National Offshore Oil. Building and constructions: China State Construction engineering, China Railway Engineering, China Railway Construction, China Communications Construction. Source: Fortune Global 500 (2019), Orbis, Financial Statements; DenkWerk analysis.



Different economic and political dynamics affecting global trade





As US-China tensions increase, American firms have a much higher exposure to potential "decoupling"

Market access

Direct sales of each country's firms in their reciprocal domestic market

Supply chain

Reliance on each other's manufacturing capacity and critical components/inputs



For US industries



Of which 7-11 face medium to high difficulty to replace China as supplier in the medium term



For Chinese industries



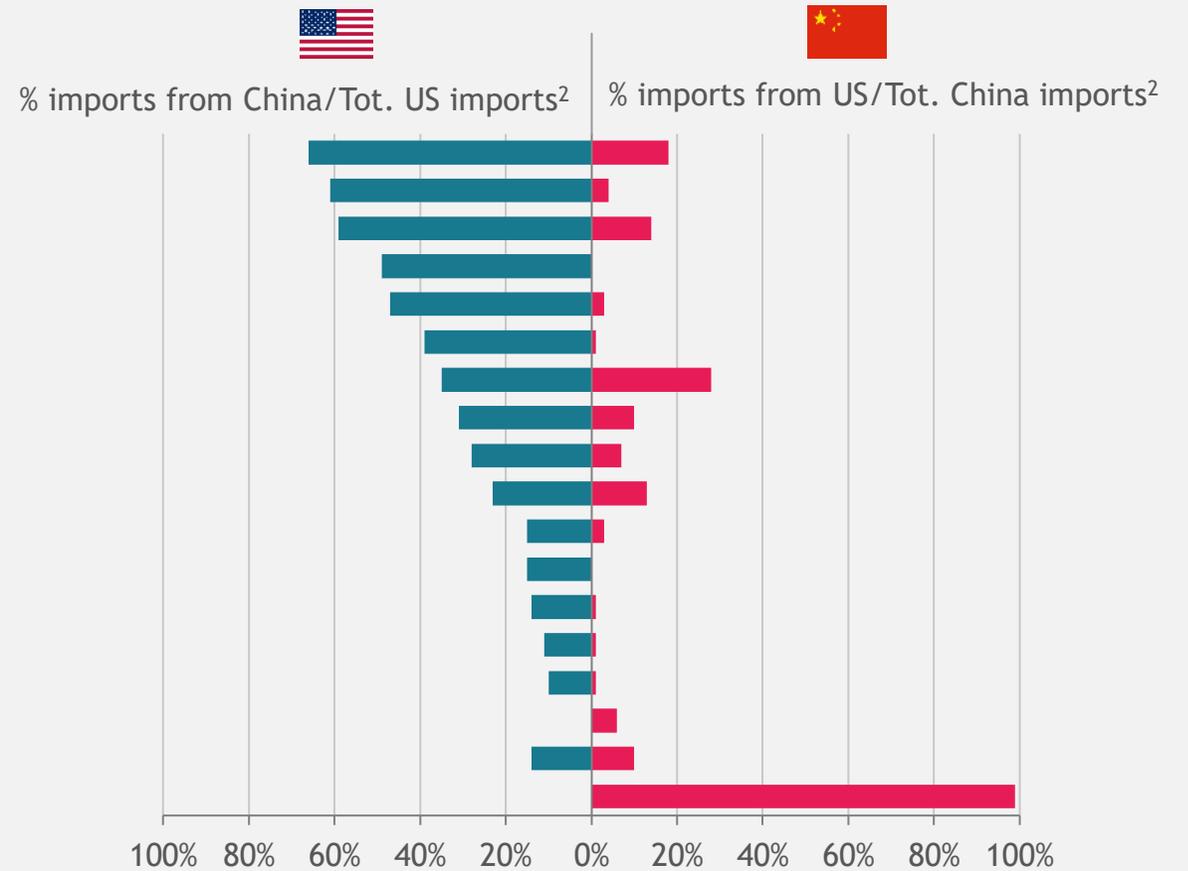
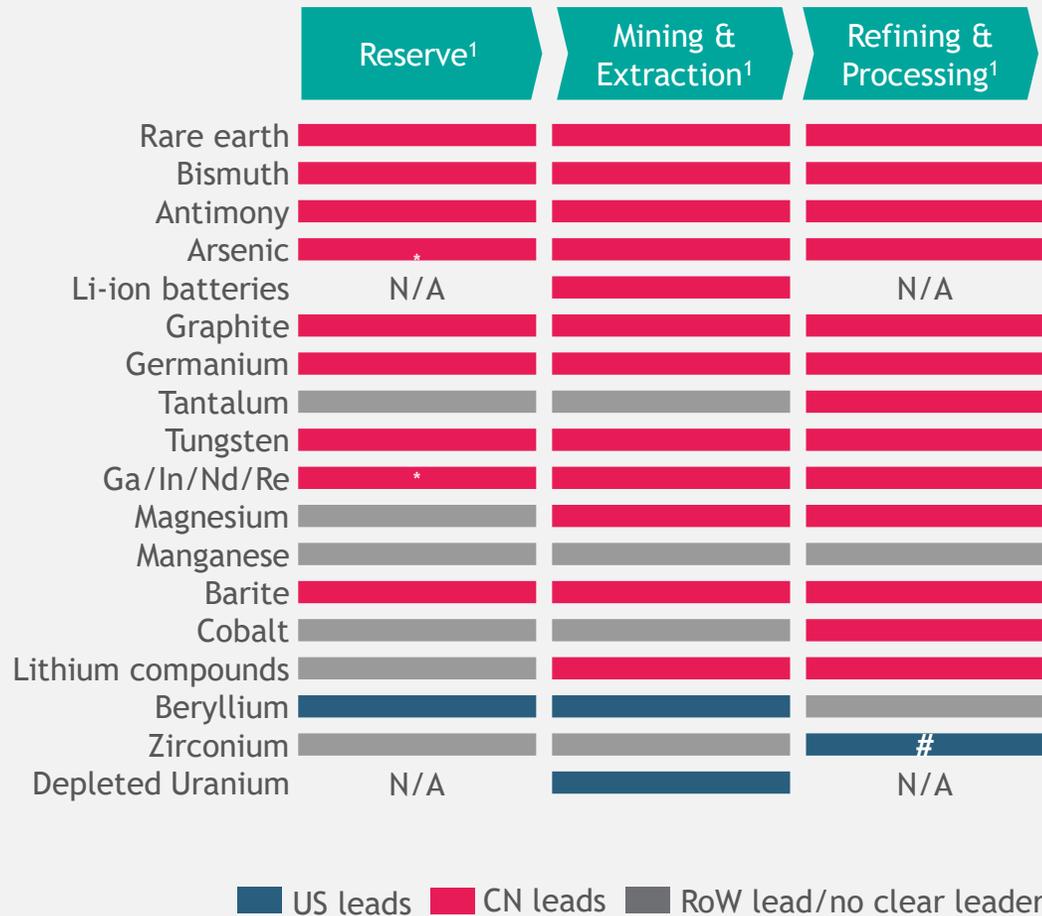
Of which 2 face medium to high difficulty to replace US as supplier in the medium term

Losing ~5% of revenue for US firms could translate into around 15% of their market capitalization, or about \$2.5 trillion in value¹

1. The estimate of market capitalization risk is calculated on the basis of the average 2019 profit margin structure (49% gross margin) for S&P 500 companies and EV/EBIDTA valuation multiples that historically range from 11 to 14.



China is also a key supplier of critical resources such as rare earths



1. The box is highlighted if US or China is in top 3 reserve/production countries or major processing countries. 2. The import percentage is calculated as a weighted average of imports of ores, oxides, and finished metal. * No reported reserve data, assume reserve is the same as production. # US dominates Zirconium products for nuclear application whereas China dominates production of Zirconium oxides.

Source: GTA; USGS; Gartner; News reports; Market reports; BCG analysis



US-China decoupling already taking shape in "Tech Stack"

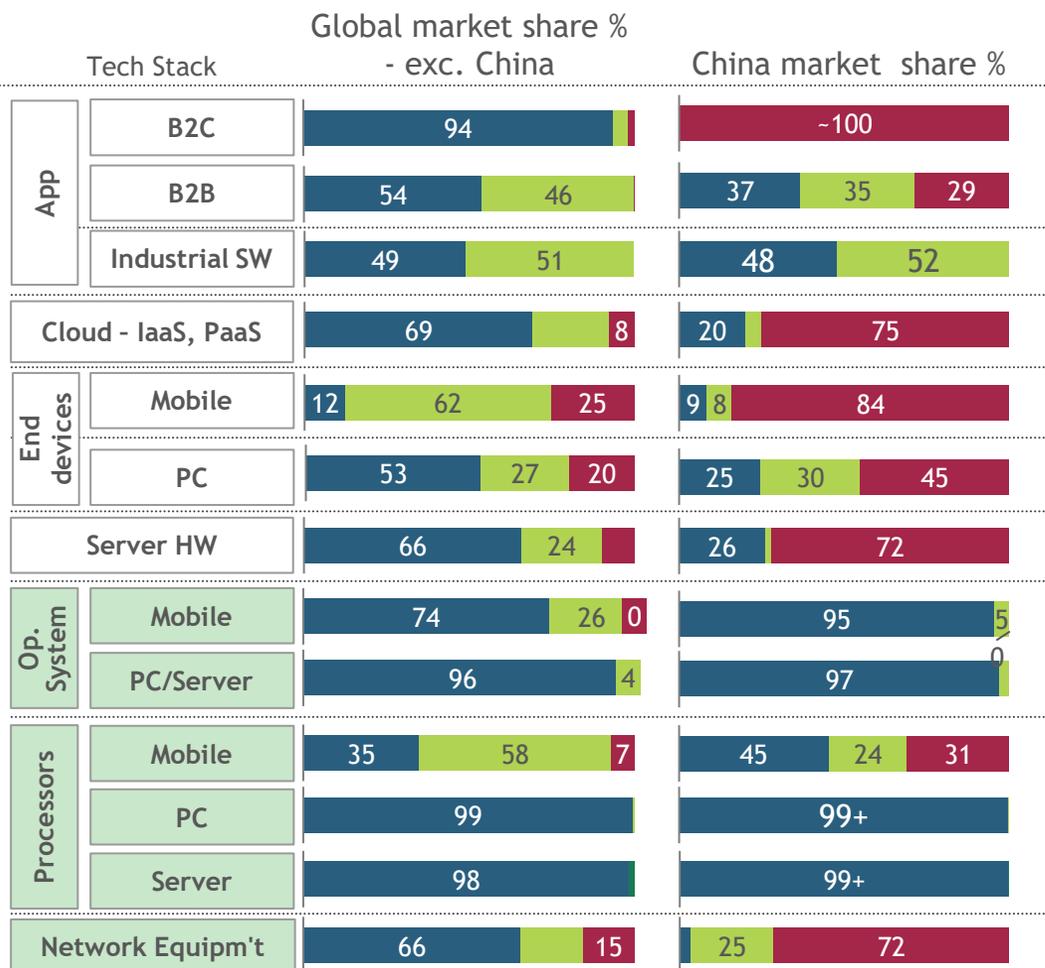
Various degrees of Decoupling today

As reflected in market share by vendor headquarter country (%)

Two Internets
E.g. FAANG (US) vs. BAT (China)

Tech Globalization
E.g. Significant market share of US tech suppliers in China

Greatest Decoupling risk at foundational layers
Two Stacks with separate suppliers
Standards are bifurcated and suppliers are also divided with limited interoperability



■ US ■ RoW ■ China

Source: IDC, Gartner, BCG Analysis

Future Decoupling scenarios

Tech Globalization

Standards are global and interoperable

Two Internets

Providers of internet service and applications are separated

Tech Forking

Standards bifurcated but interoperability achieved

Two Stacks with global Suppliers

Standards bifurcated, global suppliers w/ separate stacks

Two Stacks with separate suppliers

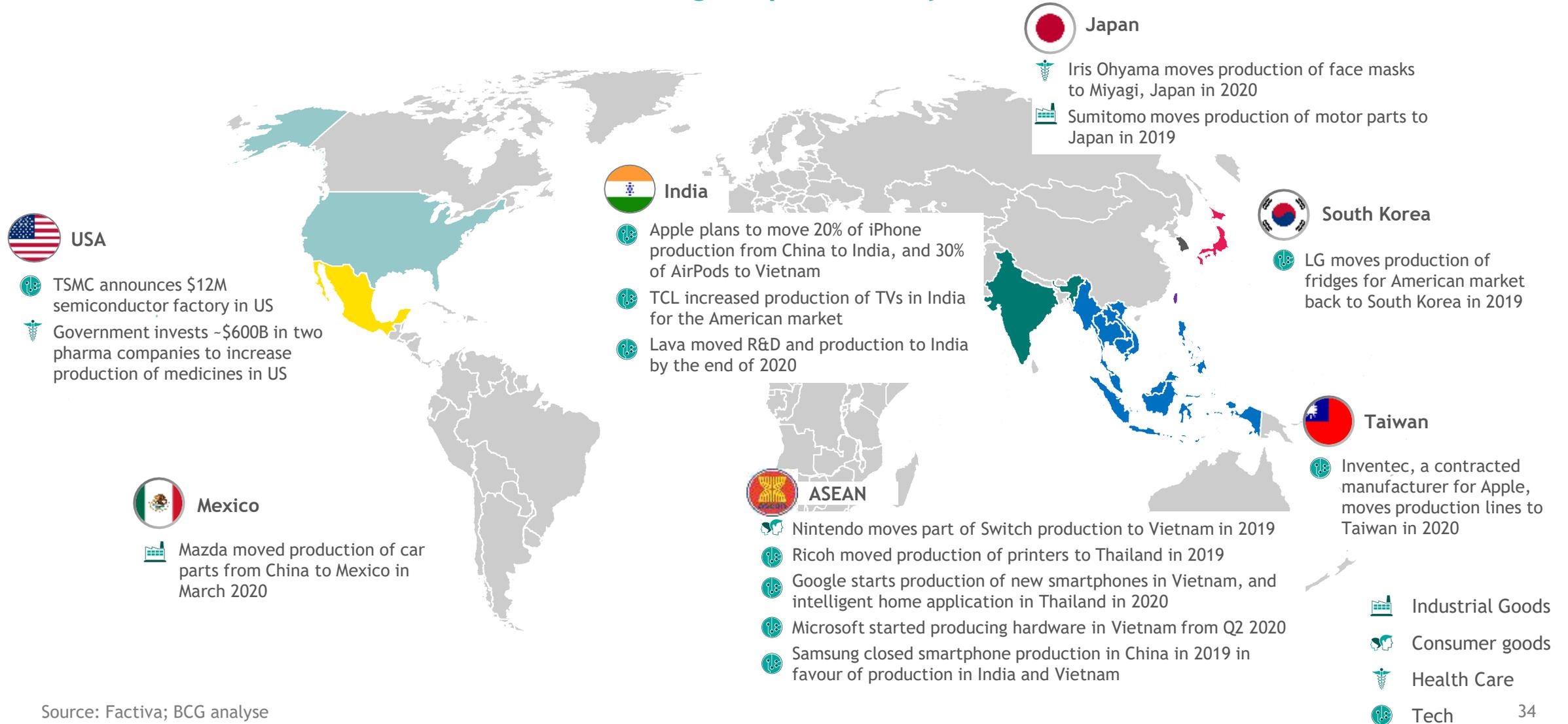
Standards bifurcated and suppliers also divided with limited interoperability

De-escalation

Escalation



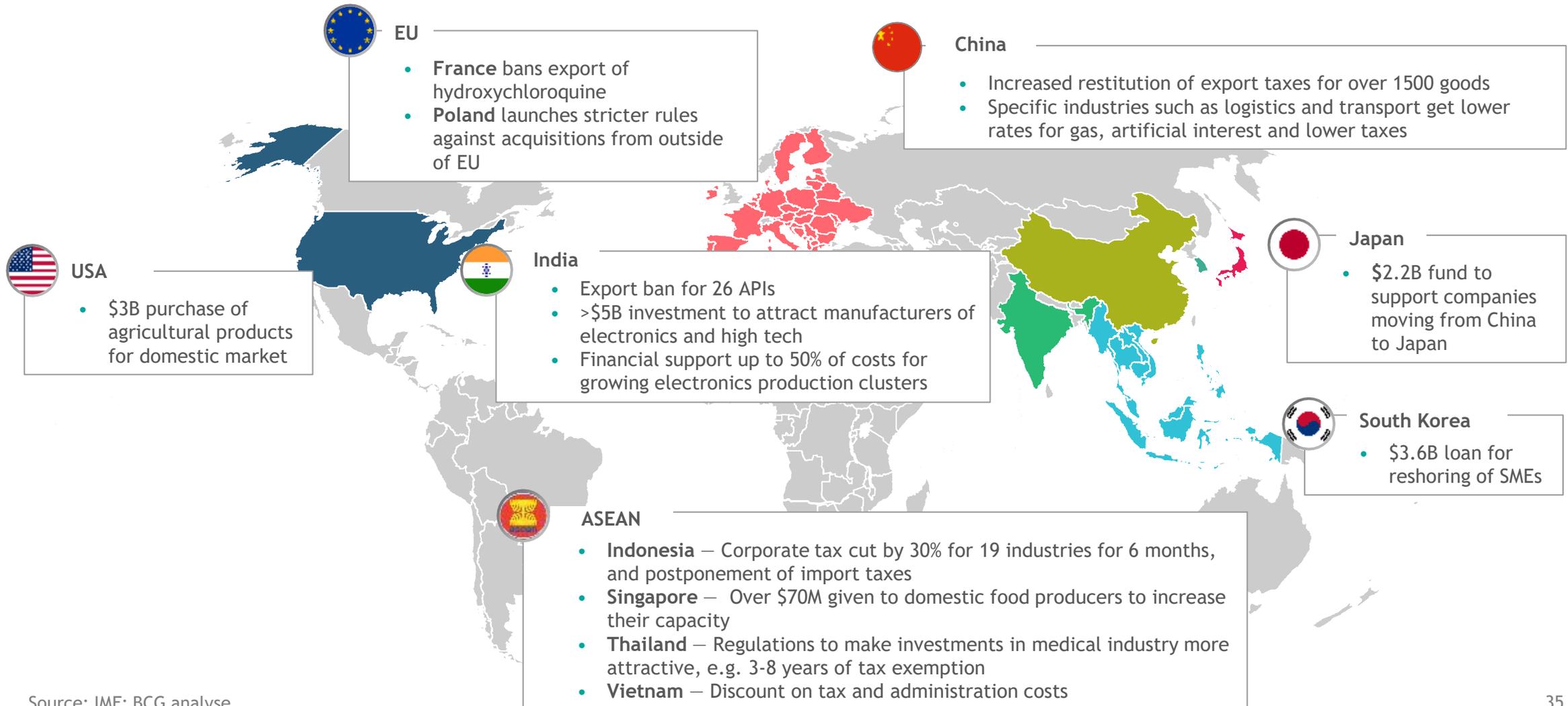
Many businesses are already changing their supply chains, staying closer to their domestic market and avoiding dependency on China



Source: Factiva; BCG analyse



Covid-19 has caused governments to protect their own economies, leading to more local supply chains





Migrated and regional supply chain models will emerge, driven by climate action, Industry 4.0 and geopolitical risk

Illustrative example for a firm traditionally manufacturing in China and selling globally

Global supply chains

Global supply chains with added redundancy, but limited footprint changes due to cost & access

Migrated supply chains

Global supply chains shifting certain steps new geographies to reduce geopolitical risk

Multi-local (regional) supply chains

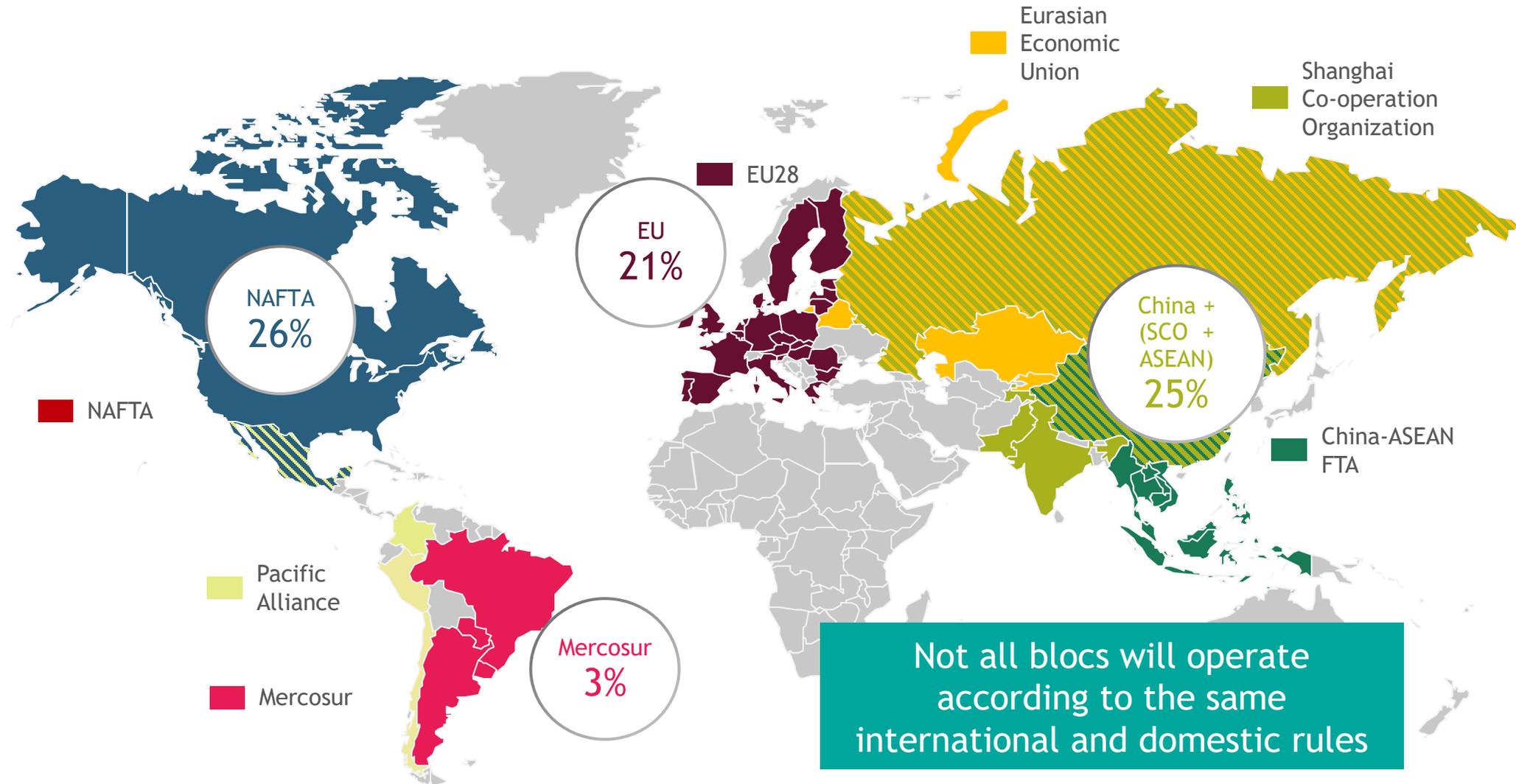
Closer to end-markets, enabled by technology, and naturally hedged against exogenous shocks



Degree of change for typical multinational corporation



3/4 of World GDP is already aligned in 3 large trade blocs



Notes: (1) 2019 nominal GDP data; (2) EU includes UK
Source: World Bank, BCG Research and Analysis



Post Covid-19 value chains | Final effect of drivers will differ per industry, however geopolitical reordering will play a large role

Table 1: Assessing the potential of economic, technological and political factors upon the spatial configuration of GVCs

Driver	Effects on spatial reconfiguration of GVCs
Economic factors I (cost differentials, sunk investment costs)	-
Economic factors II (quality issues, transport costs, proximity of market, Made-in effects etc.)	+
Digitalisation – ICTs	-
Digitalisation – Automation/Industry 4.0	+/-
Digitalisation – Additive Manufacturing	+
Exogenous shocks (pandemics, climate events etc.)	+
Geopolitical reordering/long-term change in economic policy outlook	++

Source: own elaboration

Note: '-'...longer GVCs; '+/-'...no clear effect; '+/'+'+'...shorter/very short GVCs

- European Parliament's Committee on International Trade requested a study in which **geopolitics** was assessed as the largest effect in **shortening Global Value Chains (GVCs)**
- Economic factors and digitalization were concluded to have mixed effects on GVCs - **varying largely per industry**



4. Significant growth in trade of services

Significant growth in international trade of digital services



Growth of trade in digital services

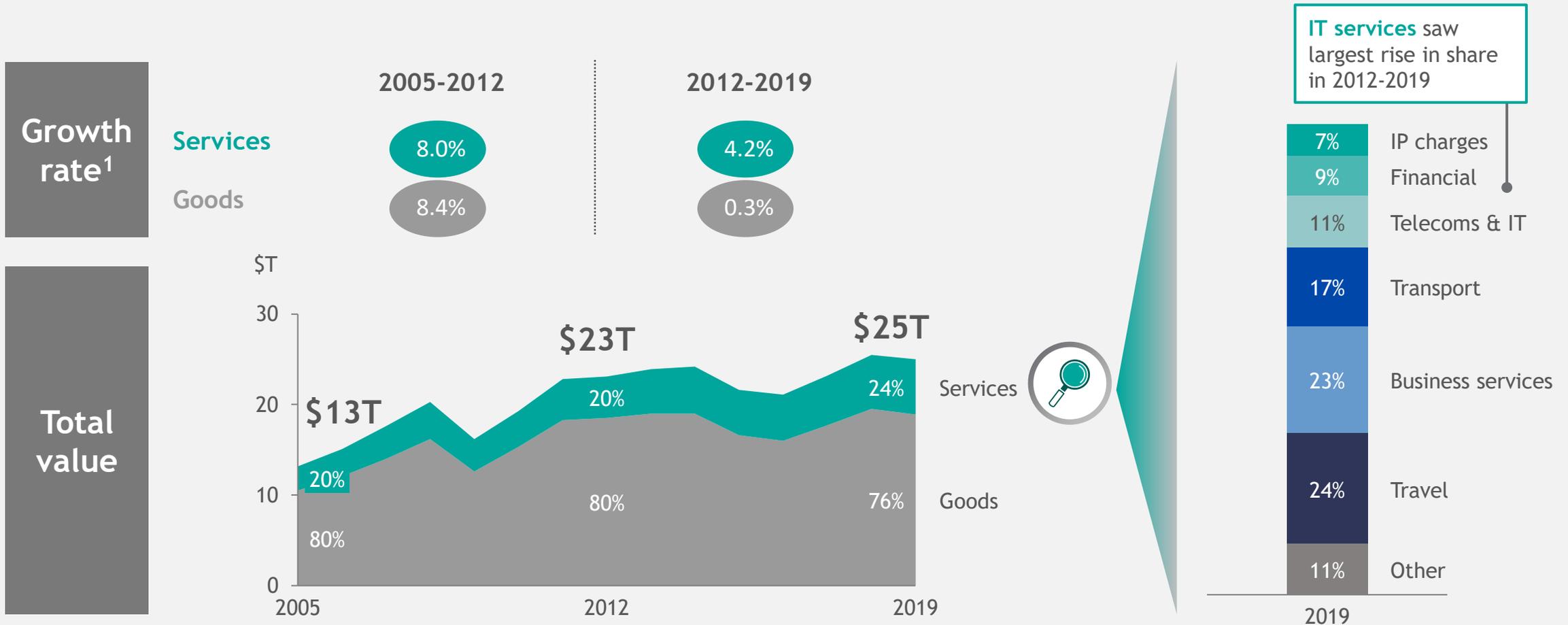


Future of teleworking and service trade



As world trade slows, services are outpacing goods

Total global trade, goods & services, 2005-2019

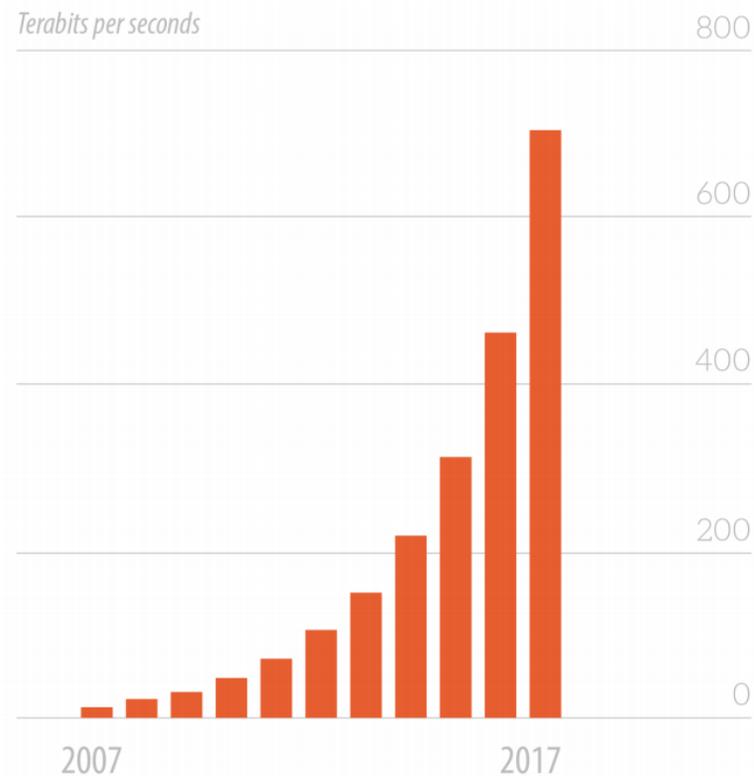


1. Compound annual growth rate
Source: WTO; BCG analysis



Digital services grow thanks to the increasing availability and mobility of data; Cross-border bandwidth rose 64 times between 2004 and 2019

Figure 10 – Growing cross-border bandwidth



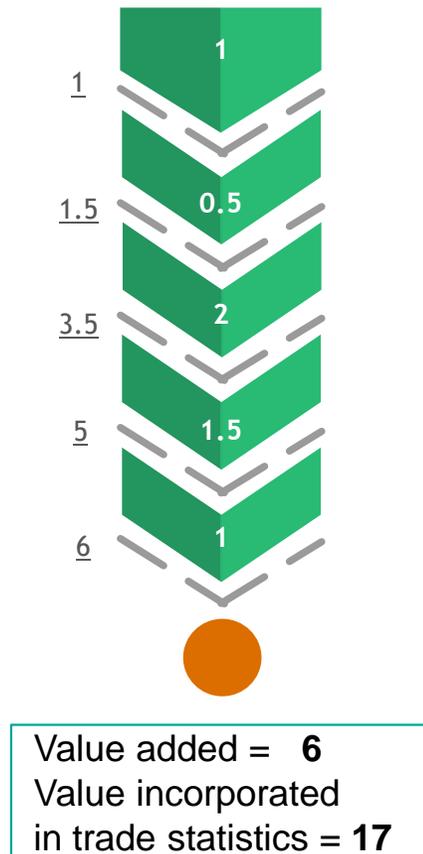
Source: The Economist, [Globalisation has faltered](#), 2019.

- This **exponential trend in online data flows and interactions** for various purposes includes the online purchases of goods, and online email exchanges, social media and video communications. It also includes downloads and streaming of music and videos online, as well as increasing use of sharing economy platforms, personal and work-related use of search engines, and teleworking.
- Digitalisation has potential positive consequences for financial interconnectedness, but also carries risks, due to the **lack of a global governance framework for digital issues, from e-commerce to data flows**

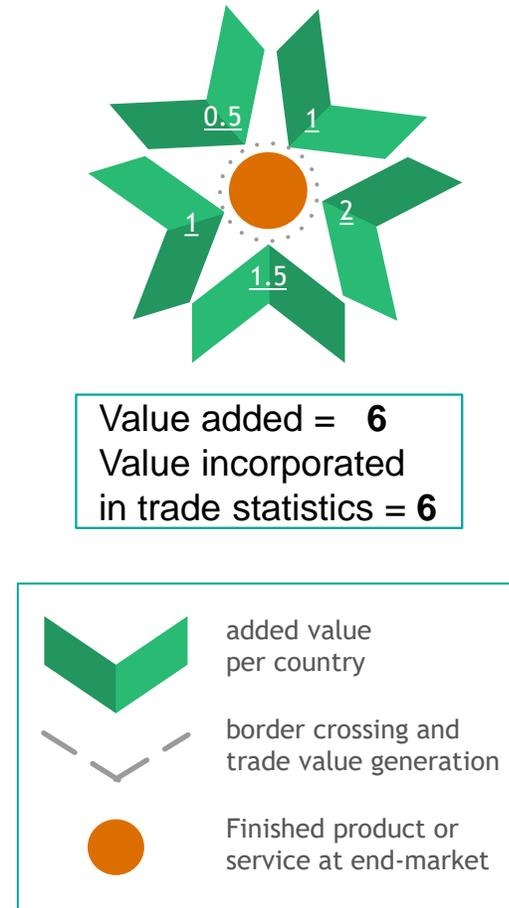


Trade Stats can't see value chain configuration, so they are systematically overestimating goods trade vs services trade

Sequential value chain



Simultaneous value chain



- In a **sequential value chain**, such as for most manufactured goods the combined value of previous production steps is added to trade statistics at every border crossing
- This leads to **double counting in statistics of exported goods**
- In **simultaneous value chains**, such as for most digital services, each component of added value is only counted once



Services will keep growing faster than GDP

Value is moving away from production in the chain

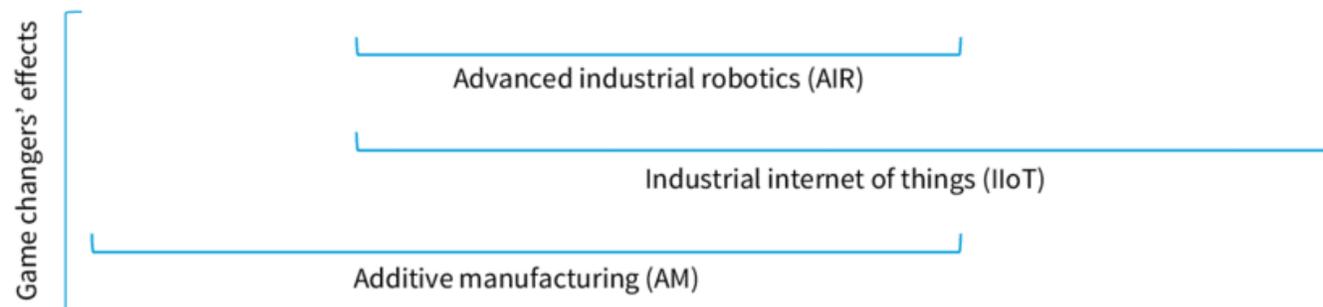
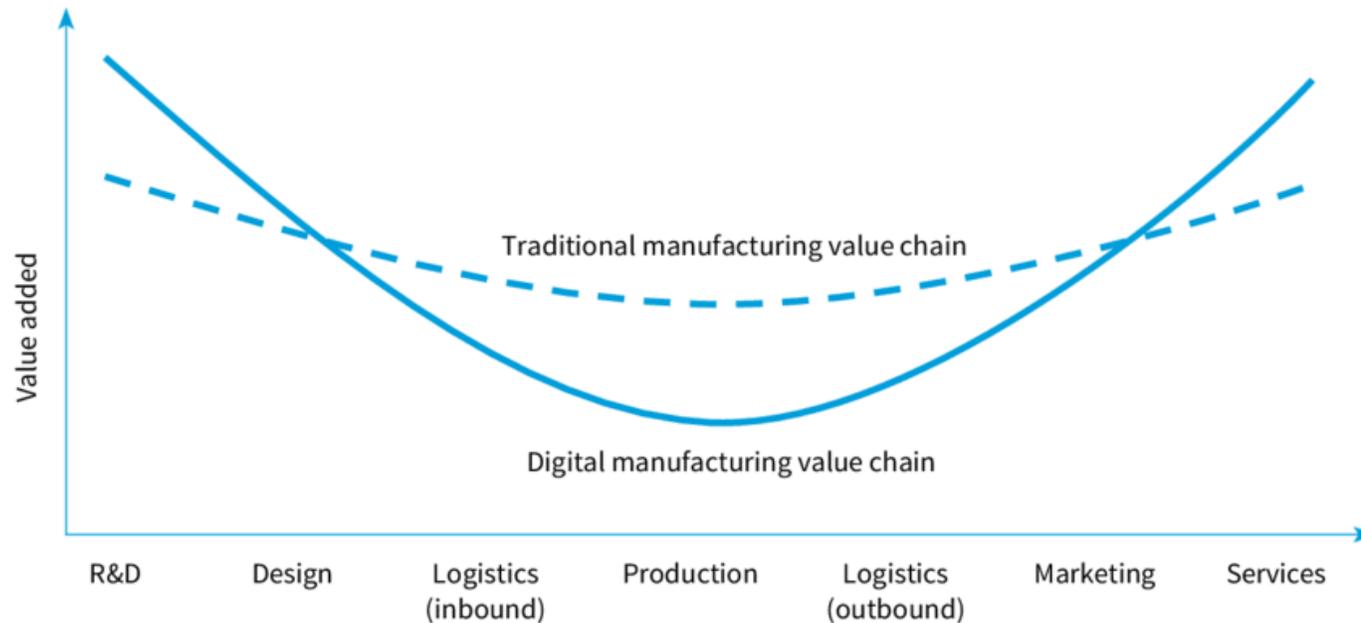
- In the so-called '**Smile curve**', Industry 4.0 is causing added value to move away from production and transportation
- More focus on R&D, design in the front of the value chain, and marketing and sales at the end of it
- This is where services can still grow substantially

Future of telework and international trade in services

- Covid-19 has shown that that many white-collar jobs can be carried out remotely
- This shines light on a huge potential for international trade in services



Industry 4.0 will move most value to the sides of the Smile Curve, away from production and logistics



Example of future knee implant

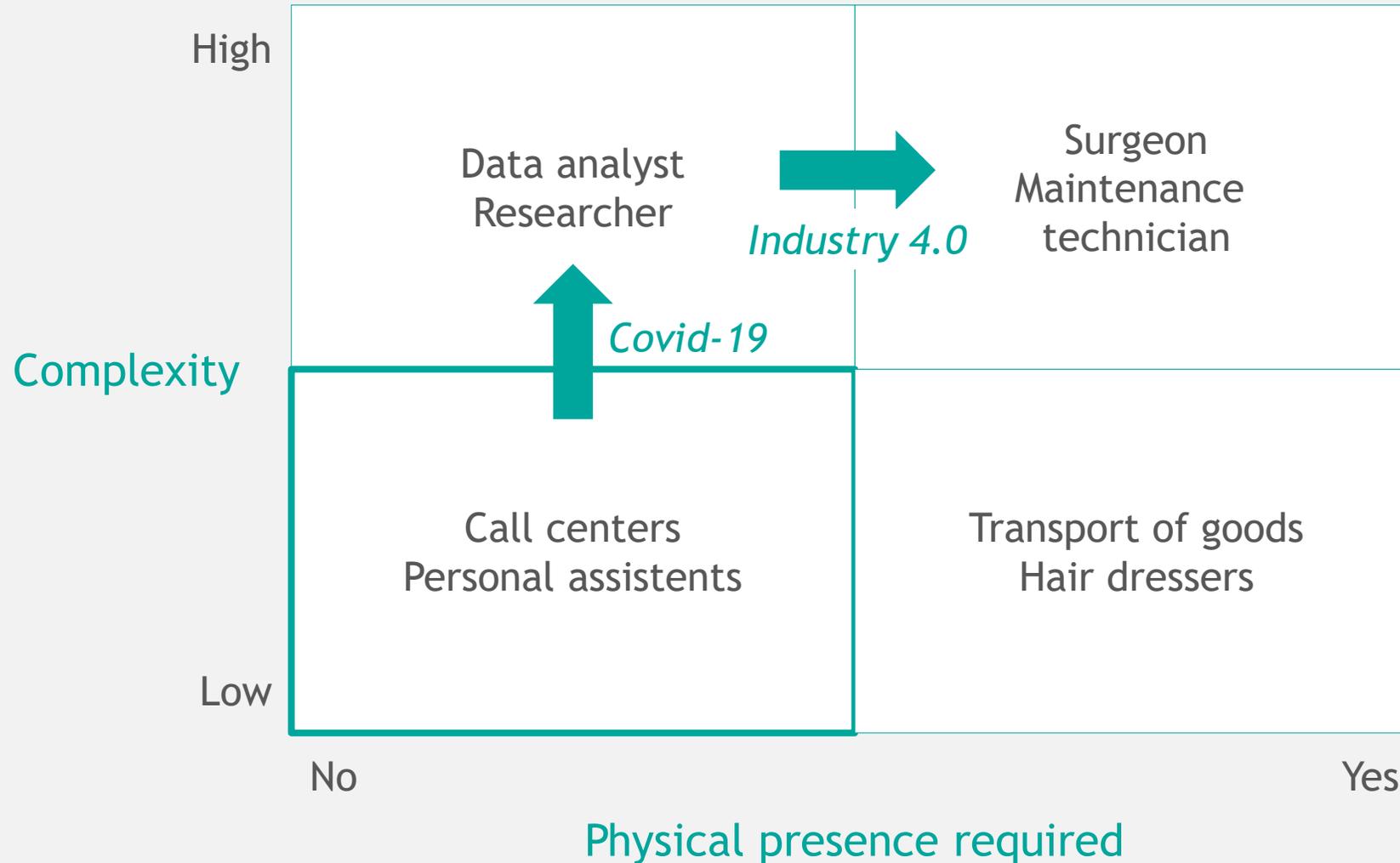
- Patients comes to a hospital for a scan of his knee
- Scan results are sent abroad to be analysed
- Design for implant is made by engineering team
- Design is sent to hospital and the knee implant can be printed by a nearby 3D printer

Conclusion

Role and value of production and transport will become much smaller



Extend to which white collar jobs are outsourcable is rapidly expanding



- Covid-19 has shown that many more office tasks and white collar jobs can be **carried out remotely**
- Industry 4.0 can result in the automation of certain tasks, making other **parts of a complex job outsourcable**



Future scenario depends on complexity and if physical presence is required

Complexity	High	<p><i>Data analyst</i> <i>Researcher</i></p> <p>International competition at job level</p>	<p><i>Surgeon</i> <i>Technical mechanic</i></p> <p>Tasks being outsourced, part of jobs remains present</p>
	Low	<p><i>Administrative employee</i> <i>Management assistant</i></p> <p>International competition at job level</p>	<p><i>Waiter</i> <i>Hairdresser</i></p> <p>Jobs stay as they are, little incentive for international competition</p>
		No	Yes

Physical presence required

- **42% of the American workforce** has worked from home fulltime due to Covid-19¹
 - This group stands for over 50% of the earned incomes in the US
- Competition in complex jobs and tasks focussed on quality, however **lower complexity jobs will compete mostly on price**



5. Impact on the Dutch economy

Impact on the Dutch economy



Current position of the Netherlands as exporter of goods and services



Contribution of exports to Dutch economy

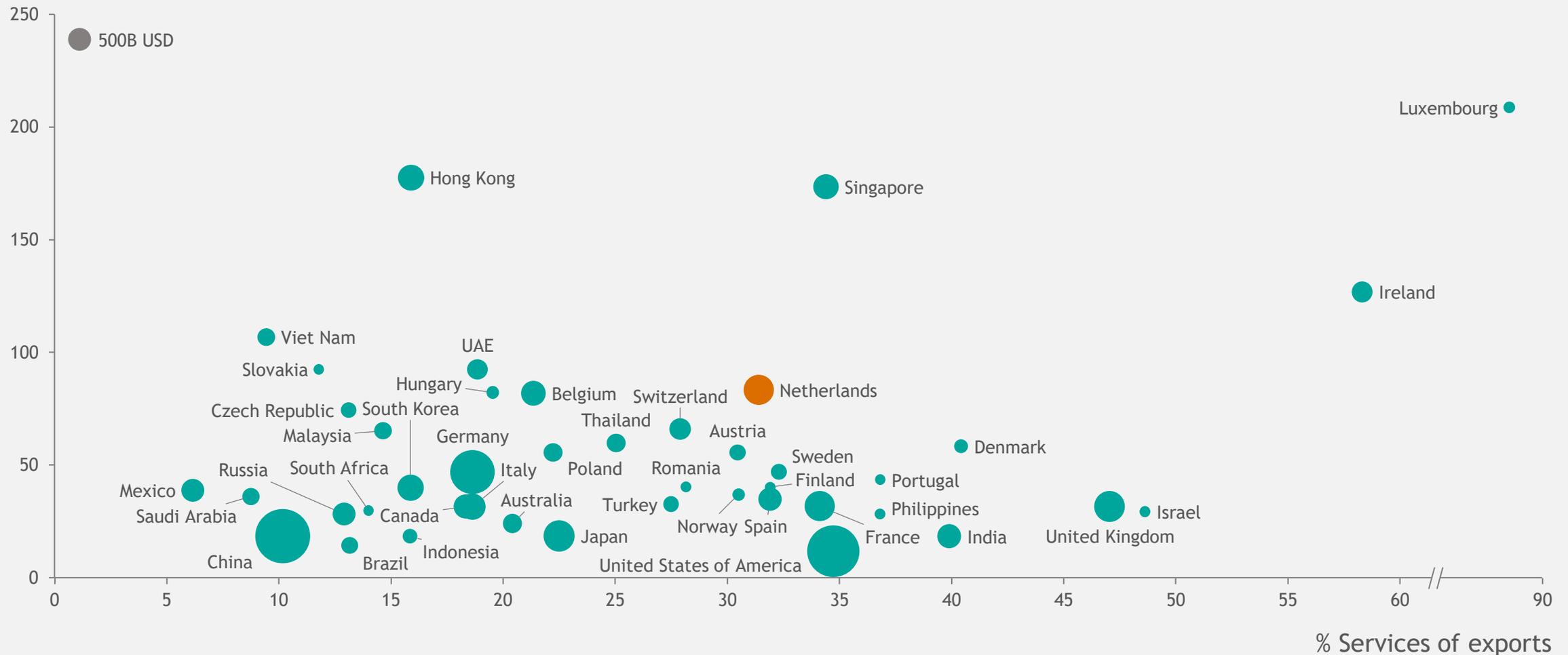


Future of GDP growth for the Netherlands



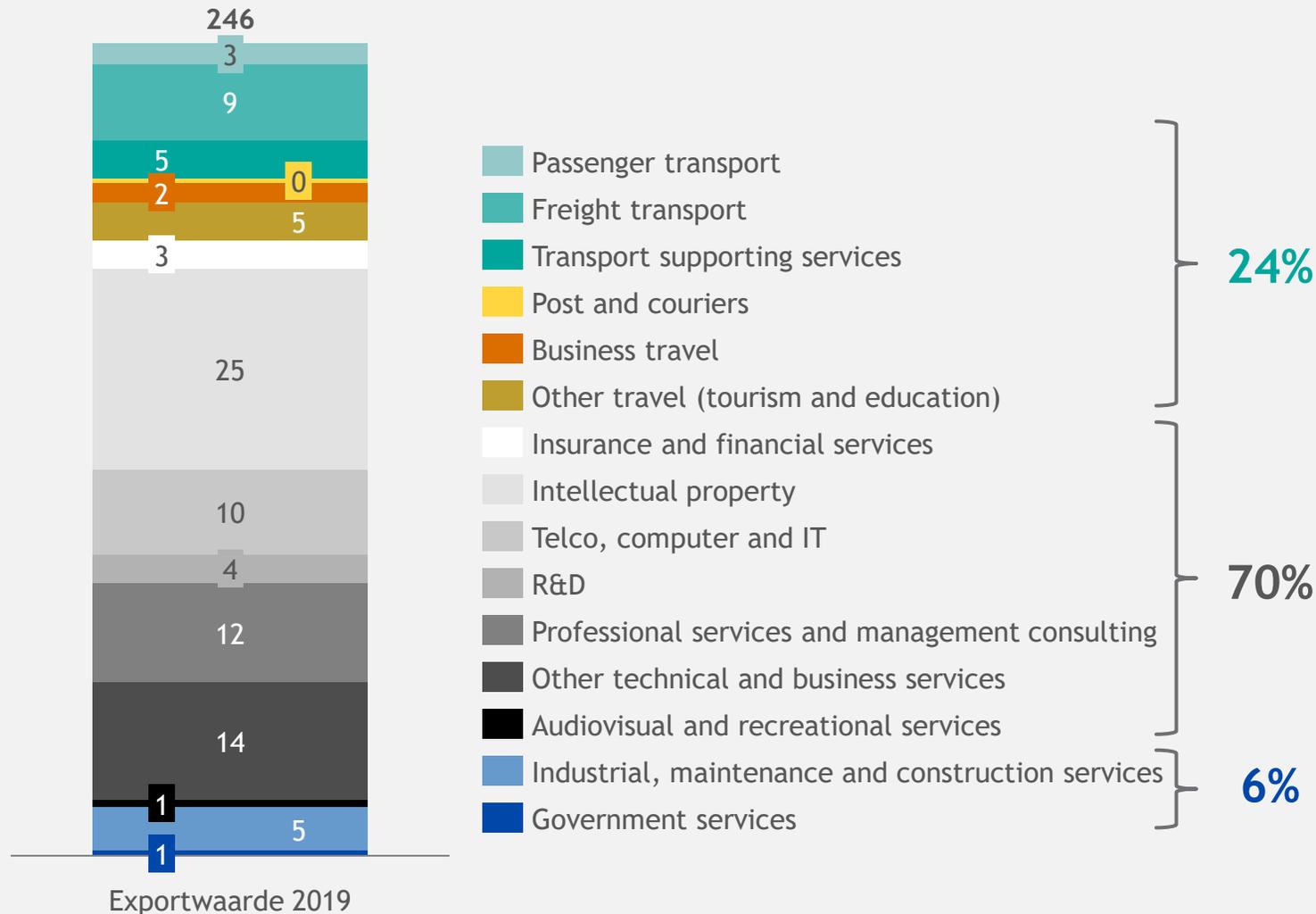
The Netherlands is exporter 7 of the world, exporting 83% of its GDP with over 30% of the export value delivered by services

Exports as % of GDP





Dutch service exports are 24% related to transport and travel, and another 70% to professional services that lend themselves for telework and digital services

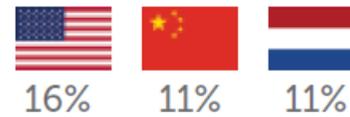


Source: CBS, values in billion euros.

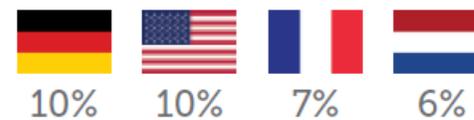


Internationally, the Netherlands is a strong player in trade of services

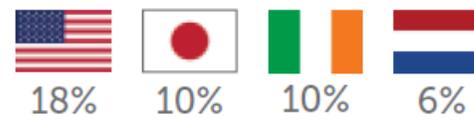
Administrative, technical and scientific business services and management consulting



Transport and storage services



Information and communication services



Financial services and insurance



Production services



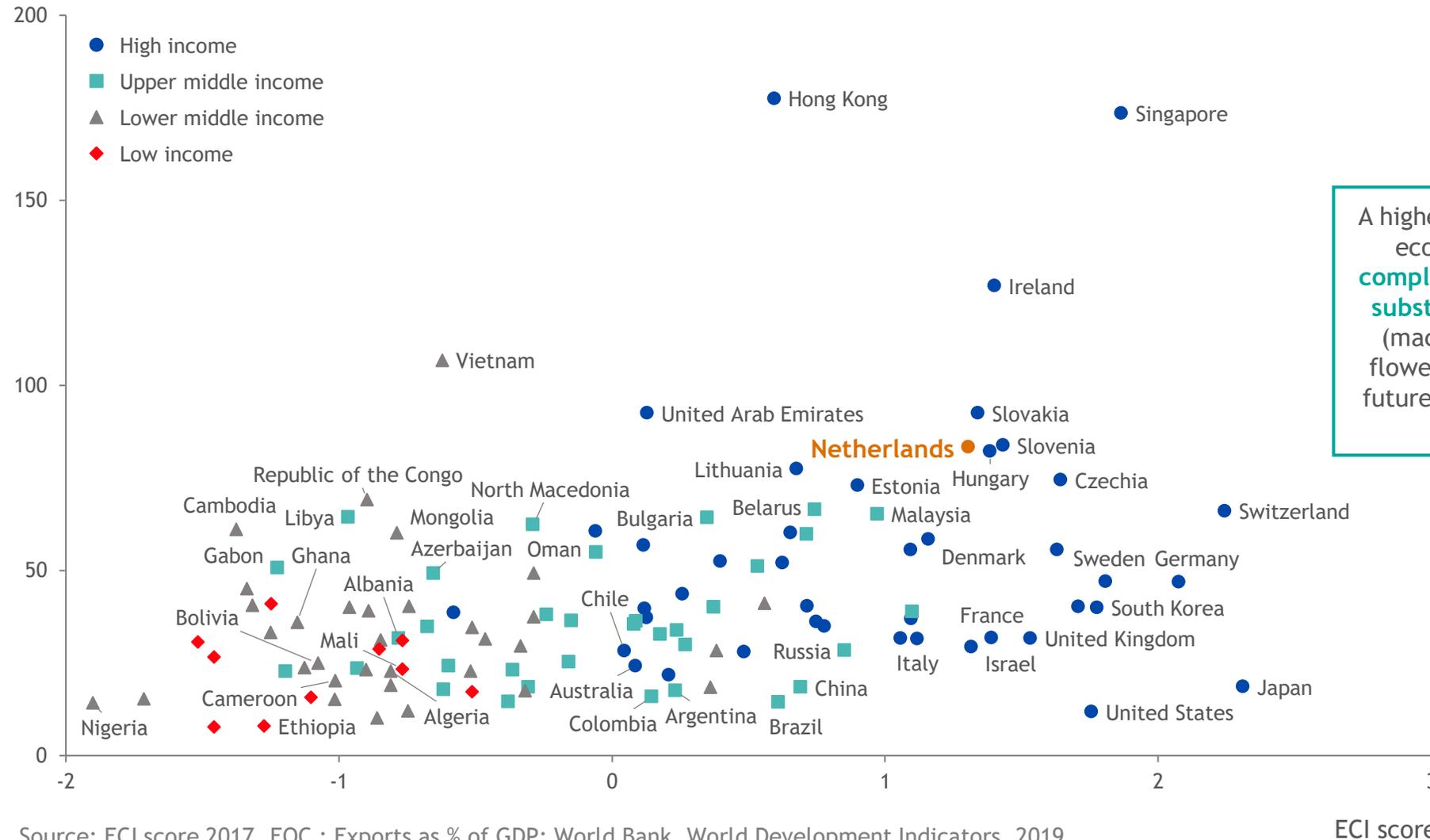
Construction services





Wealthy countries score higher on Economic Complexity Index

Exports as % of GDP



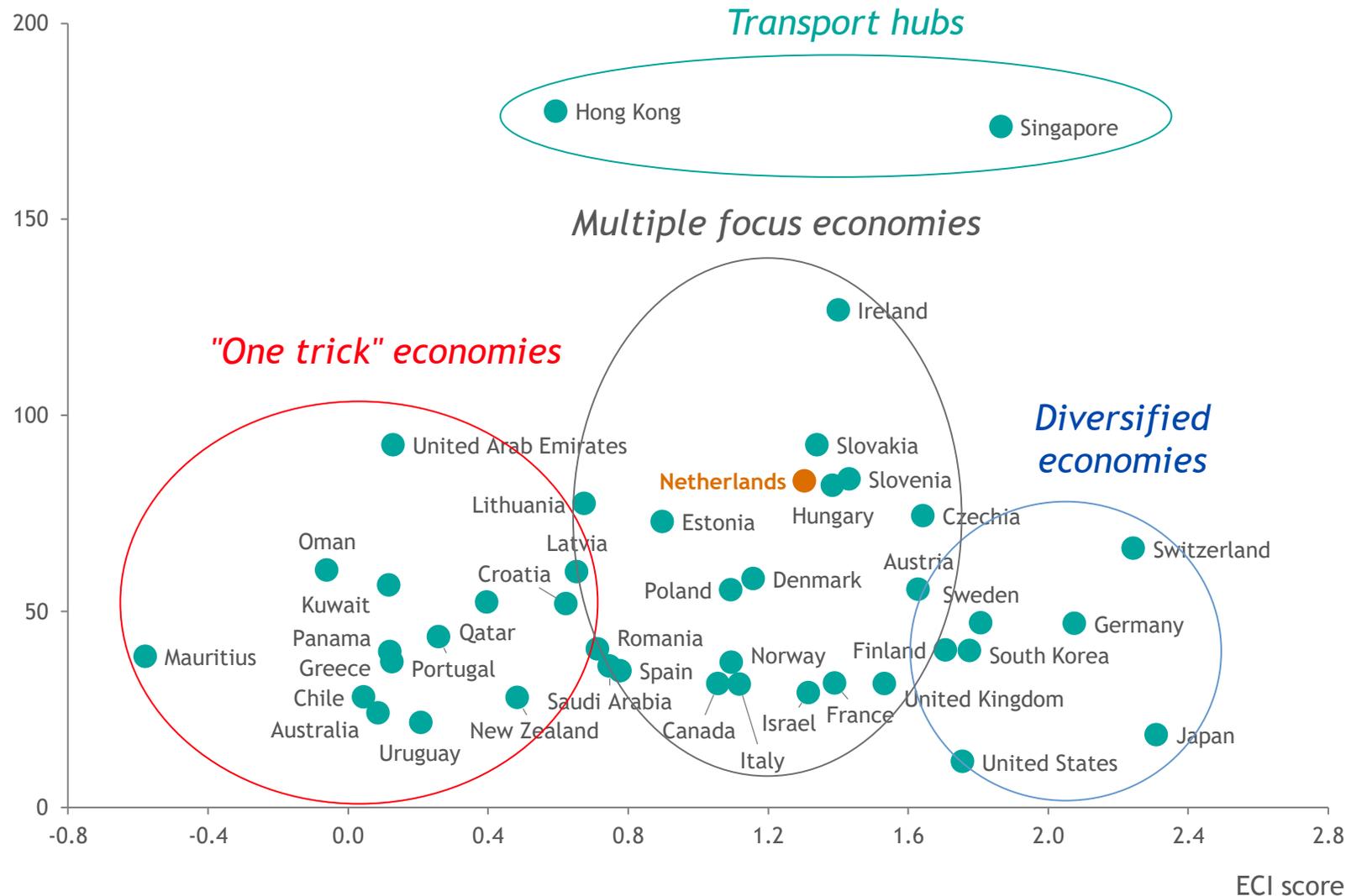
A higher ECI score strengthens the Dutch economy, since **more diverse and complex products are more difficult to substitute**. Growth in complex goods (machines and electronics instead of flowers and processed foods) is for the future growth model of the Netherlands [Growth ventures, 2013].

Source: ECI score 2017, EOC ; Exports as % of GDP: World Bank, World Development Indicators, 2019, if not available 2018 or 2017 was taken.



The Netherlands could diversify its products and services further

Exports as % of GDP - only high income countries



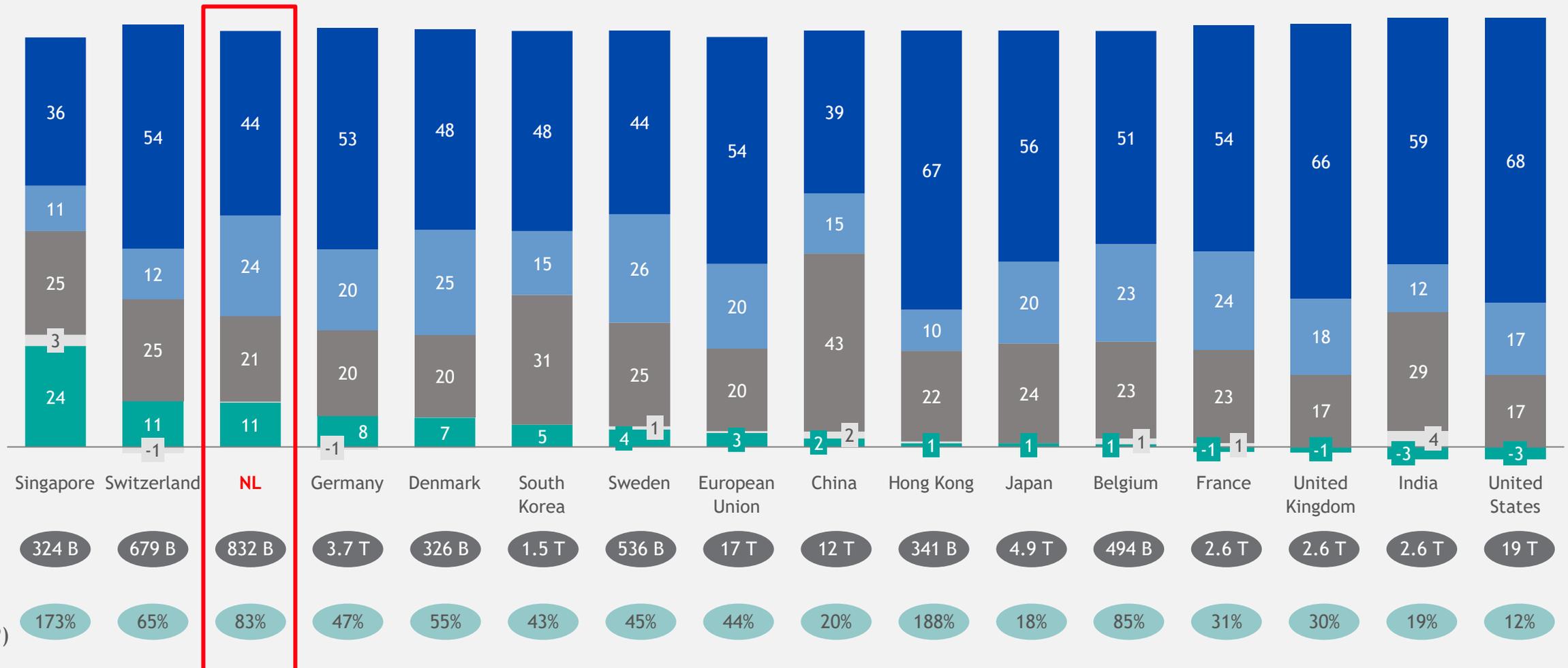
Combinations of neighbouring countries would move towards the bottom right
 For example: if the states within the USA would be separate counties, they would score lower on ECI, and higher on export. The EU would be placed in the right bottom, since intra-European trade is the majority of their trade.

Source: ECI score 2017, EOC ; Exports as % of GDP: World Bank, World Development Indicators, 2019, if not available 2018 or 2017 was taken. Only high-income countries are shown.



Dutch GDP leaning heavily on exports and less on household consumption

Household consumption Government consumption Investment in fixed capital Investment in inventories Trade balance

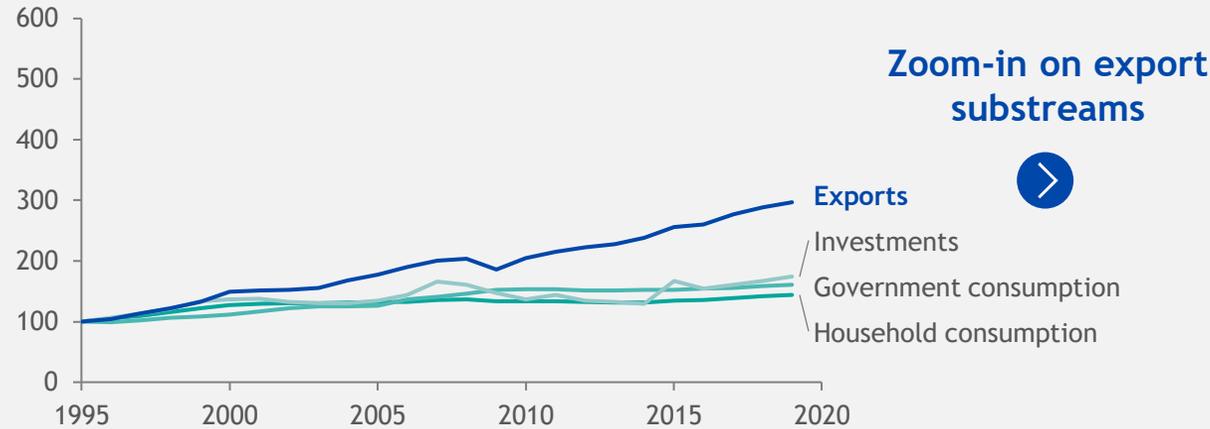


Source: CIA Factbook 2020. Gross components of GDP, not added value.

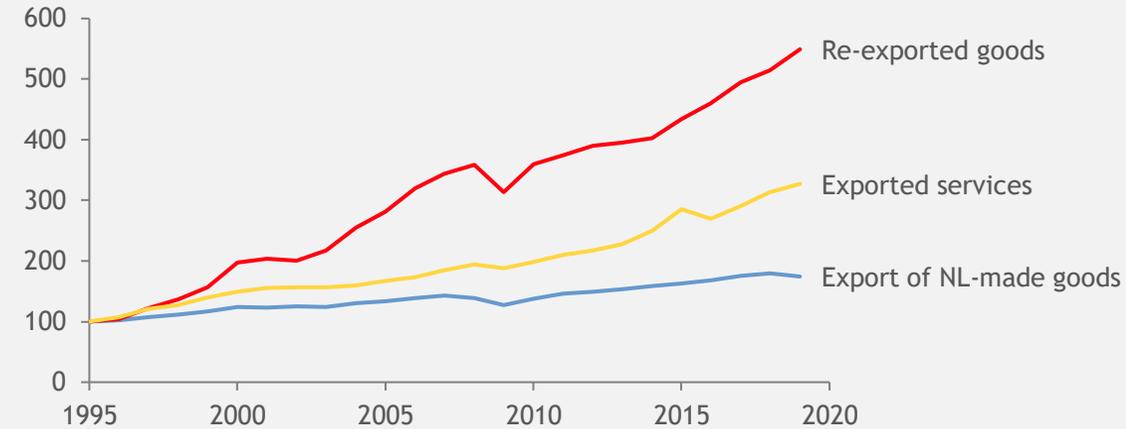


Contribution of export to real GDP growth is enormous, but price development for exports is much slower than for consumption and investments

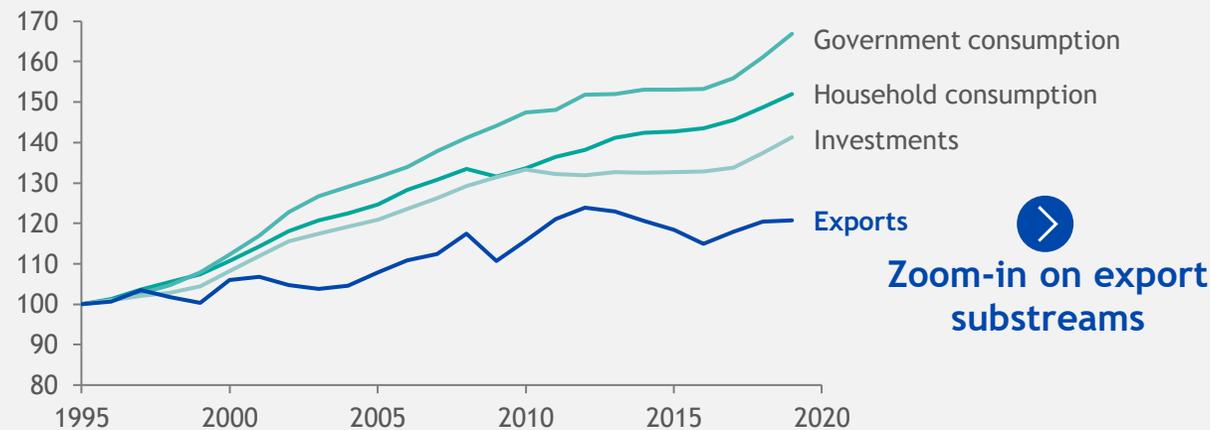
Real growth in final expenditures of GDP (1995=100)



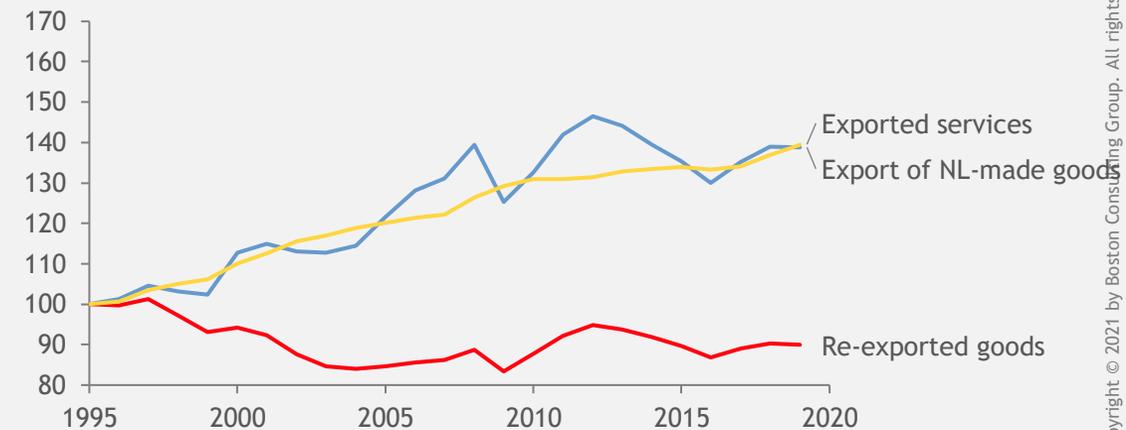
Real growth in export categories (1995=100)



Price development in final expenditures of GDP (1995=100)

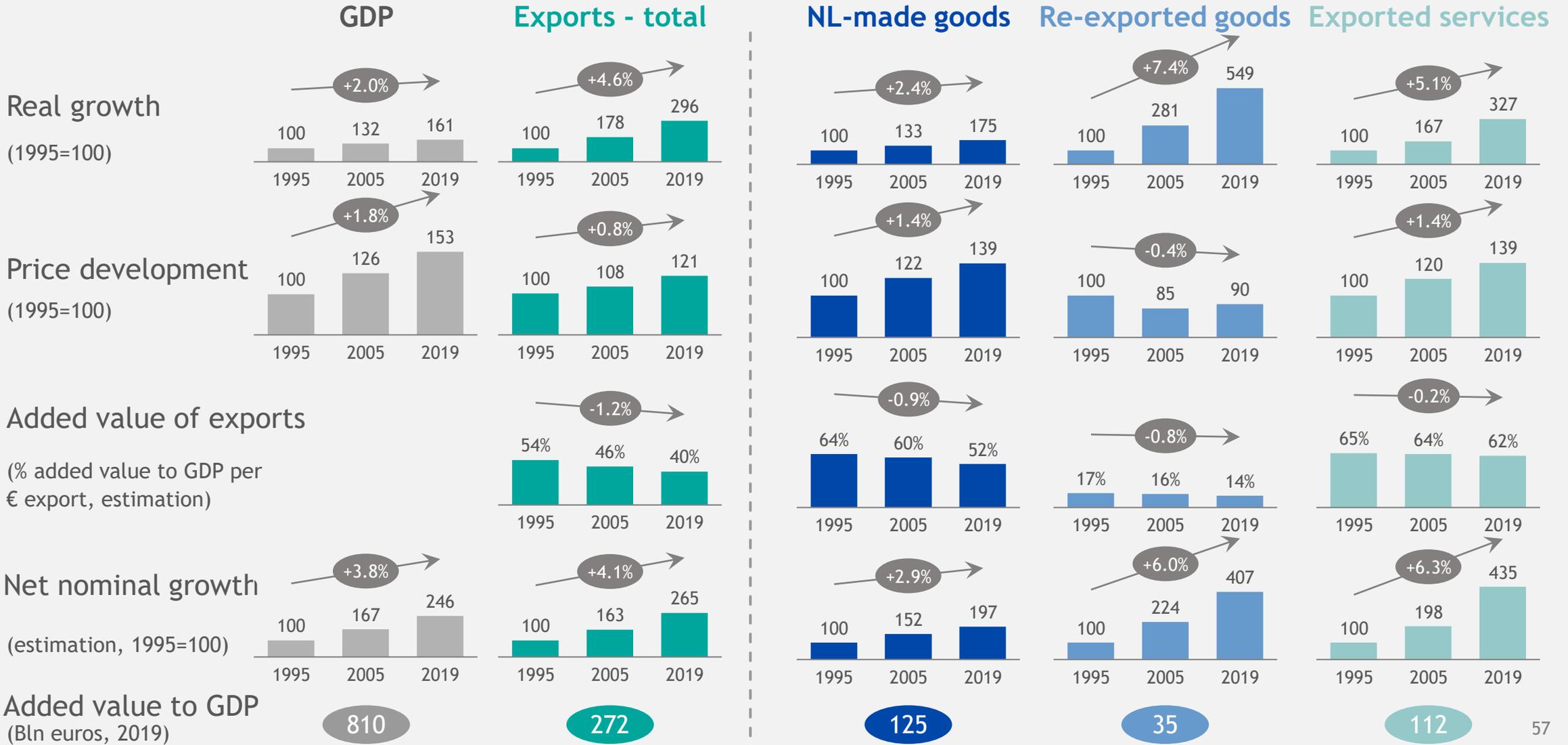


Price development in export categories (1995=100)





Export of services has been the real growth engine for Dutch GDP, with sizeable GDP contribution, high added value and rapid growth



Source: CBS; DenkWerk analysis.



The future of the Dutch economy

Limited impact of regionalization scenarios for domestically produced goods and re-exported goods

- Around 0.4% GDP decline caused by regionalization scenario for re-exported goods
- Around 0.8% GDP decline caused by significant reduction of Dutch product exports to China and the US
- Impact is limited since exports are mainly focused on Europe, and

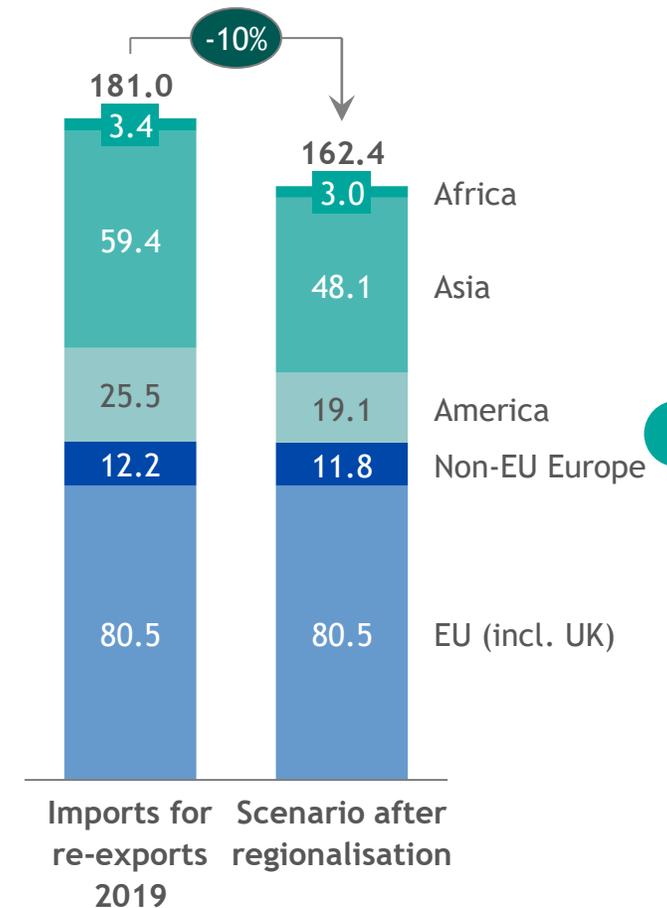
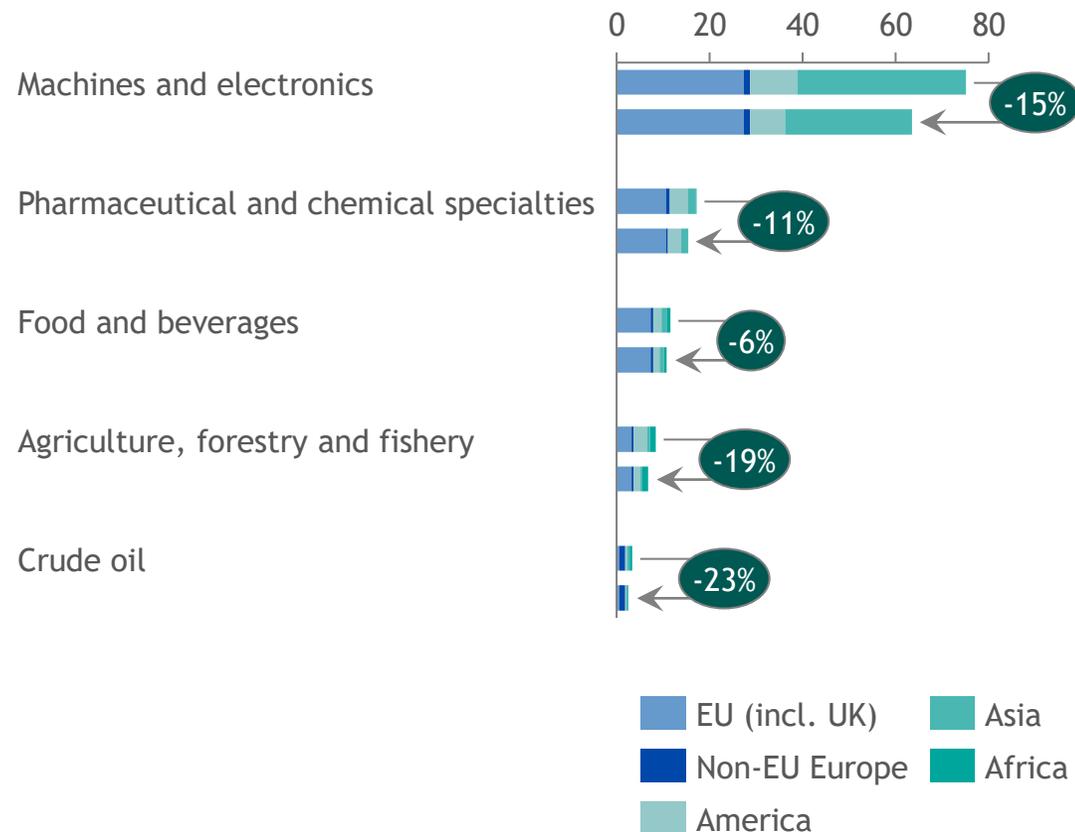
Future economic growth will be mostly determined by trade in services and domestic consumption

- Globalization of services results in reskilling and educational challenge, together with required attention for potential job loss and domestic income inequality
- Apart from that, challenge to further develop domestic investments and household consumption



Relatively limited impact of downside on goods - scenario leads to about 10% decrease in re-exported volumes, resulting in a 0.4% decrease in Dutch GDP

Import for re-exports (B euro)



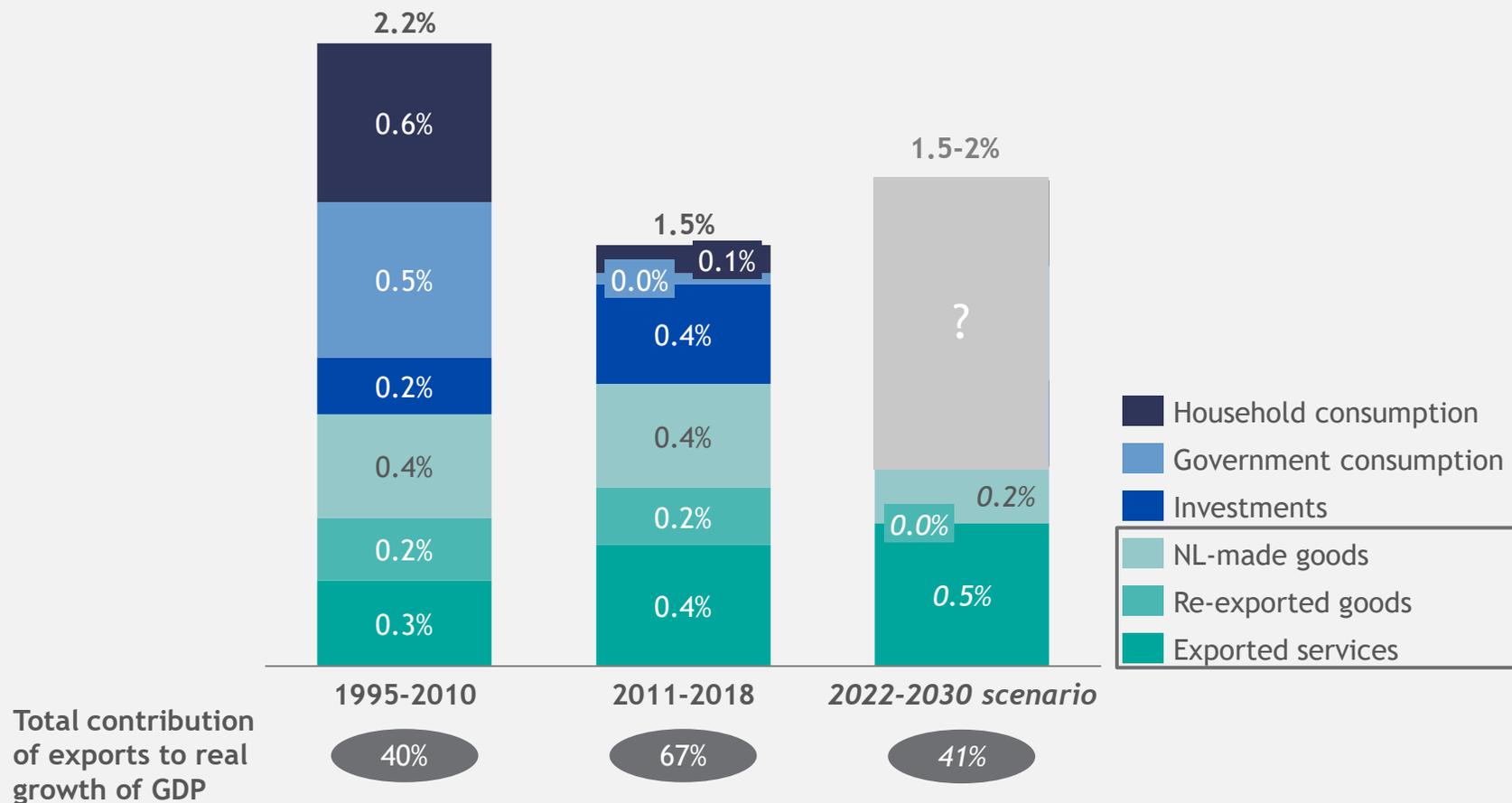
0.4%

decrease in Dutch GDP



If export of goods is stagnating we will have to lean more on export of services and our domestic GDP components such as household consumption

Contributions to average annual real growth of GDP



- How can we further grow our services exports?
 - **Focus of next two slides**
- How can we increase domestic GDP component such as household consumption?
 - **Not a focus of this document**



The Netherlands will have to invest in ecosystems of digital services, focus on reskilling of its workforce and monitor effects of internationalized services

1

Invest in ecosystems of digital services - strengthen position

- The Netherlands should invest in ecosystems of knowledge
- Rather than investing in all different technologies, we should consciously choose for several areas in which we already excel or have strong capabilities to grow

2

Focus on reskilling, upskilling and education for the job market of the future

- Education will be the biggest challenge coming from international competition in services
- Important to reskill the part of white collar workers for jobs that may be outsourced in the future

3

Monitor domestic income inequality and actively guide service transition per sector

- Globalization of services can result in lower wages or lower income insecurity
- The Netherlands should anticipate these effects and support its population by offering reskilling support and financial compensation
- As a last resort, it can also be an option to protect certain sectors from international competition

See Appendix B - on how Singapore is protecting several service sectors



Netherlands will have a big challenge to reskill workforce - currently little appetite for retraining and few people spending multiple weeks per year on it

Exhibit 11 - A Geographical Look at the Appetite for Retraining

Percentage of people who are willing to retrain for a completely new job role

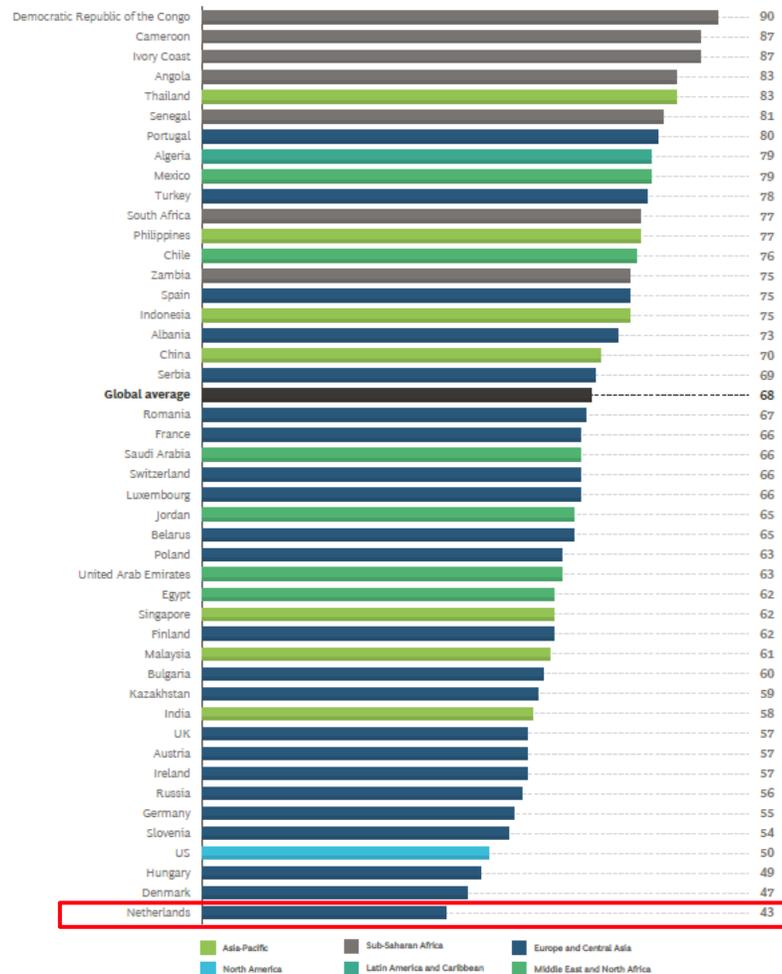


Exhibit 13 - Who Spends the Most (and Least) Time on Learning

Respondents who spend at least a few weeks on training every year

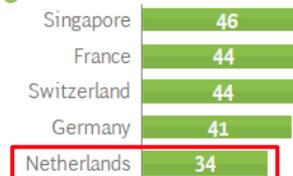


By country
% of respondents

Top 5

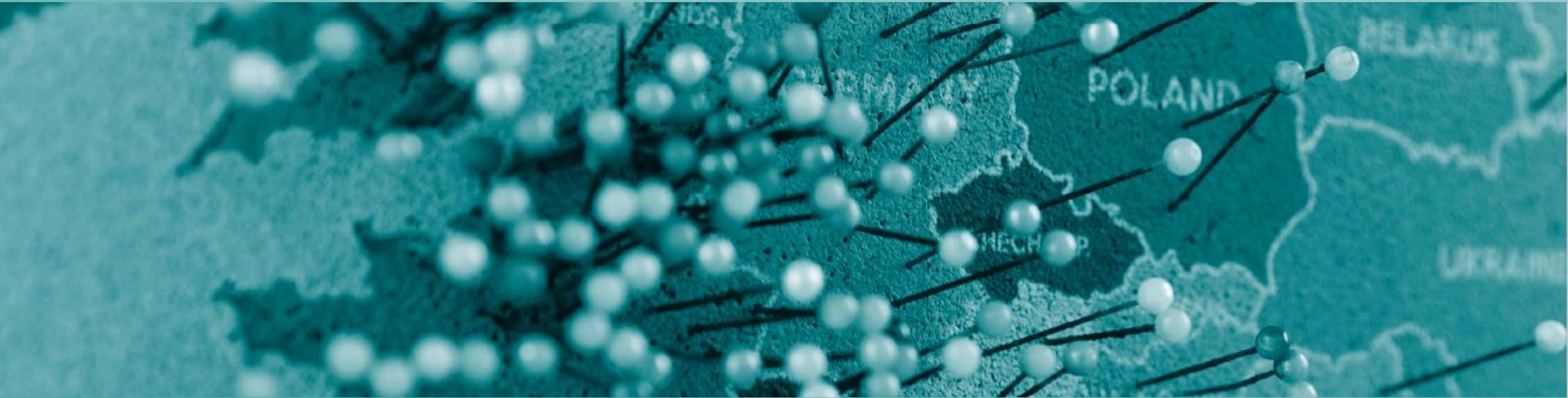


Bottom 5



Source: 2020 BCG/The Network proprietary web survey and analysis.

Note: study of 209,000 respondent with a minimum of 500 per country.
Source: Decoding Global Reskilling and Career Paths, April 2021, BCG.



6. How the EU can deal with geo-economics

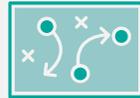
How the EU should deal with geo-economics



EU dependencies on the rest of the world



Position of EU in R&D and technologies

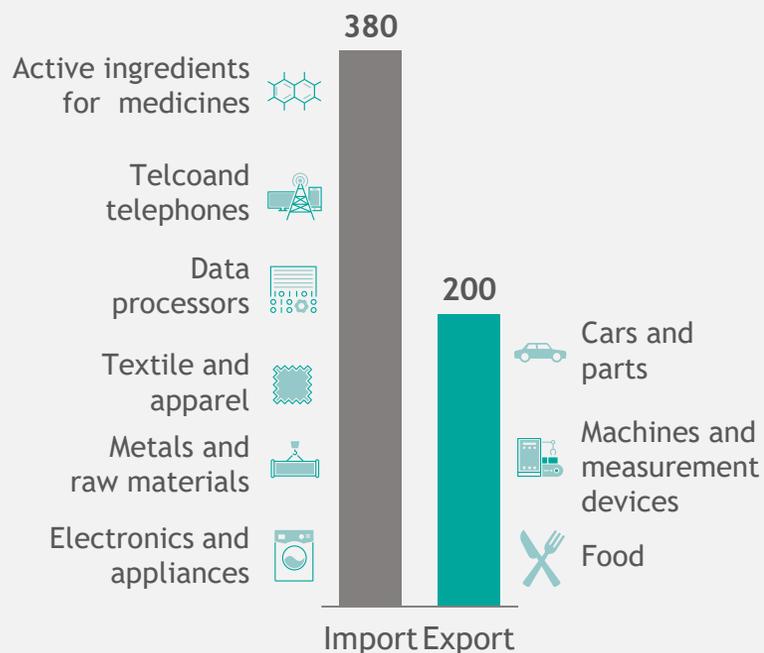


How to think about managing dependencies and strategic autonomy

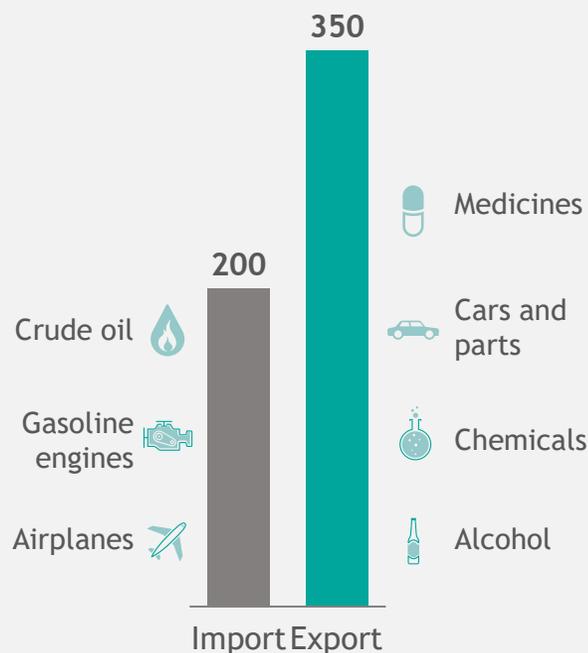


Import and export dependencies for goods of EU vs China, VS and Russia

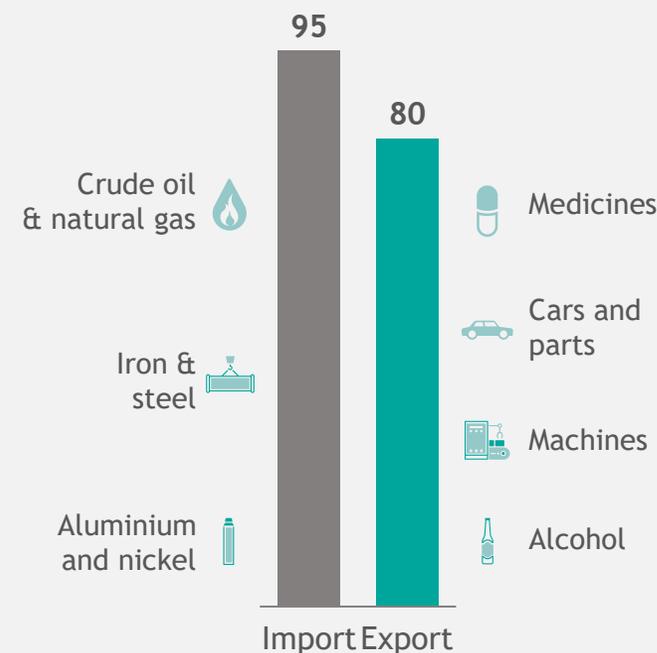
EU - China



EU - VS



EU - Russia



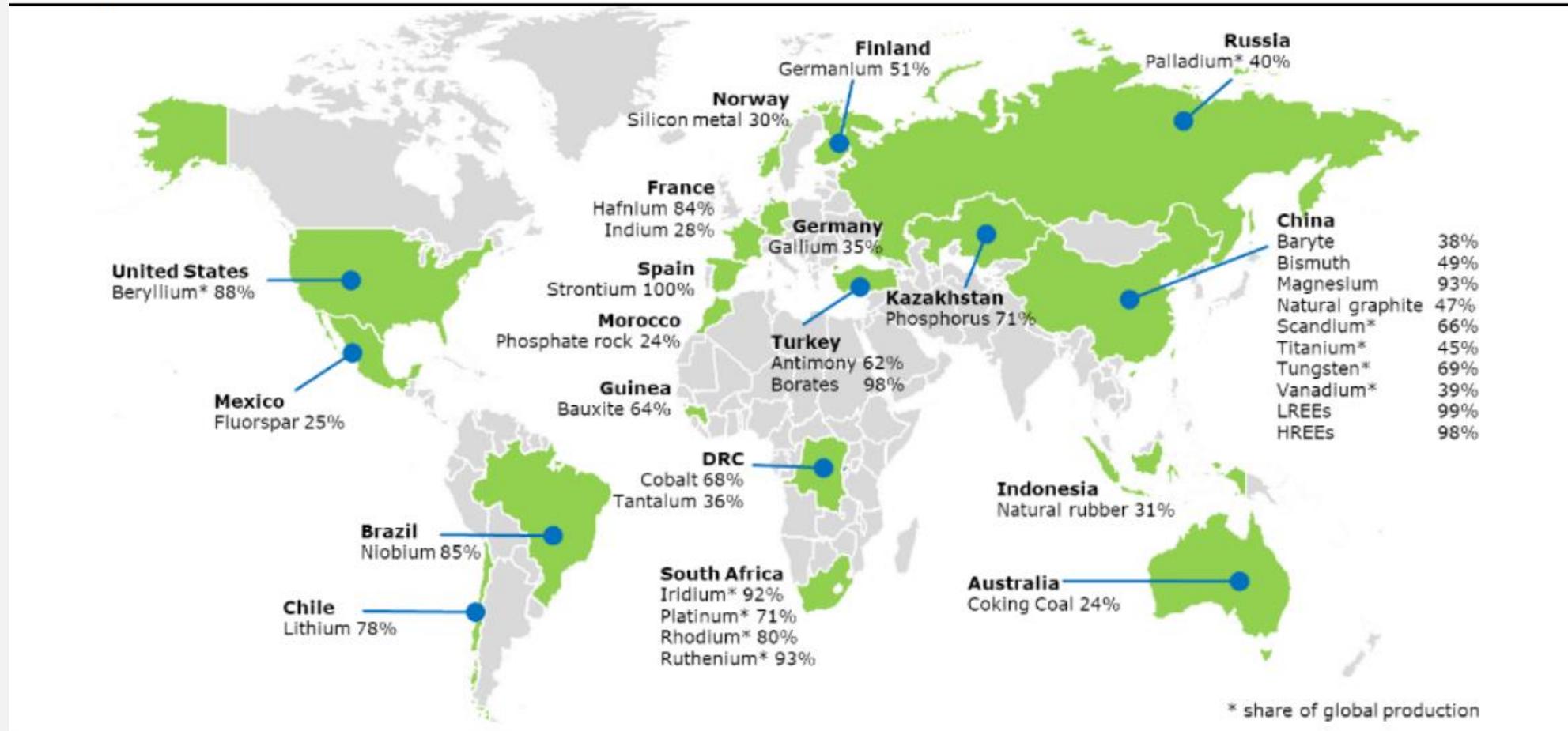
Note: values in billion euro. The total export or import value of goods is on top of the bars, and next to that you can see the product categories in which the surplus in export- en import are largest. Product categorieën with a lot of bidirectional trade but a smaller net trade value are not shown.

Source: Eurostat, 2020.



EU very dependent for raw material imports, mainly towards China

Graph 22: Biggest supplier countries of critical raw materials to the EU

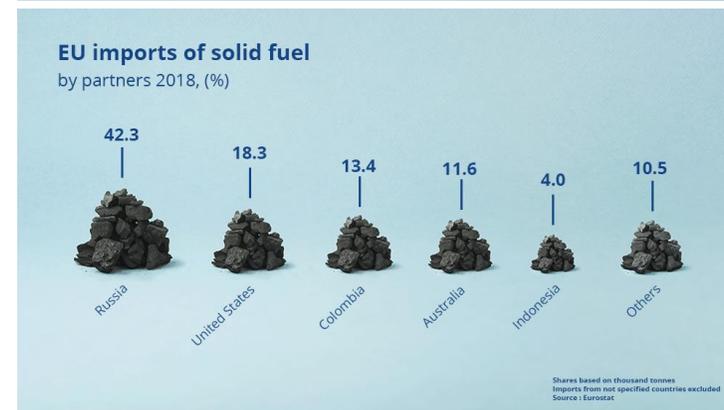
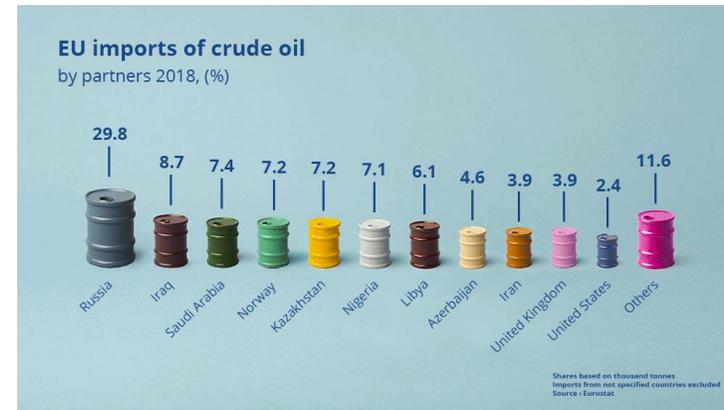
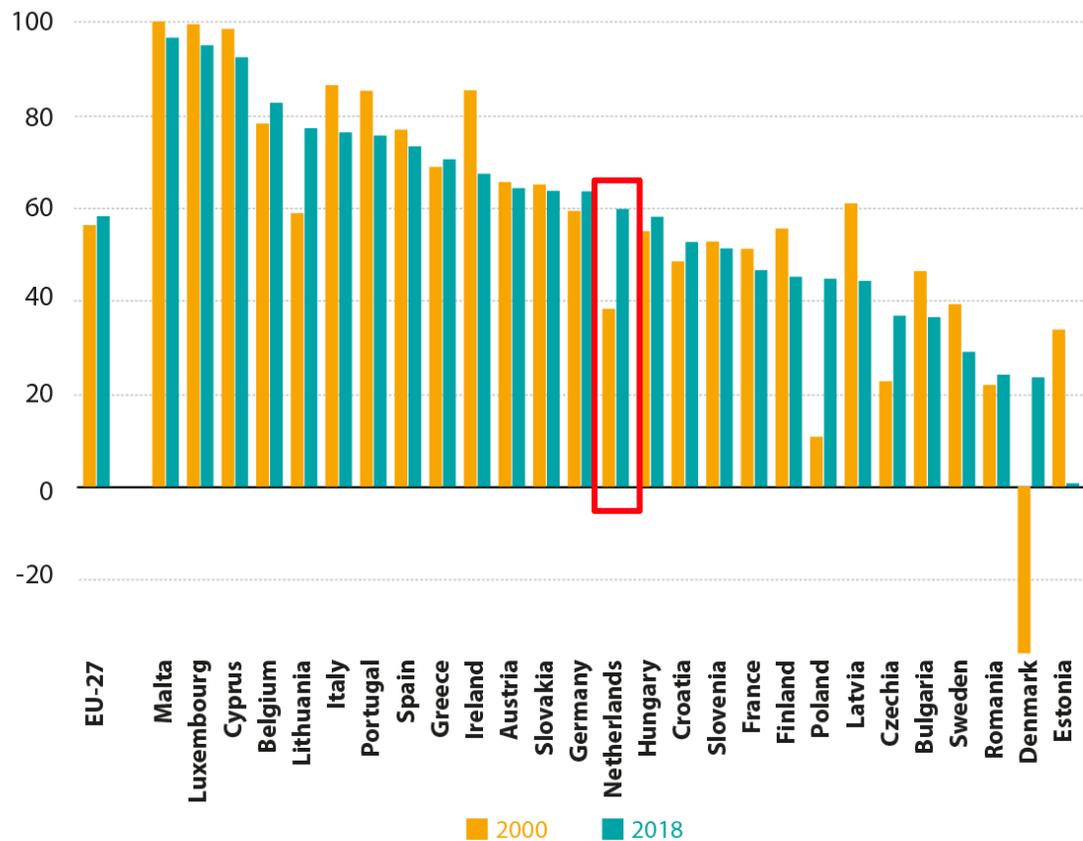


Source: European Commission, Study on the EU's list of Critical Raw Materials (2020)



EU is very dependent on Russia for its fossil fuels

Energy dependency rate (%)



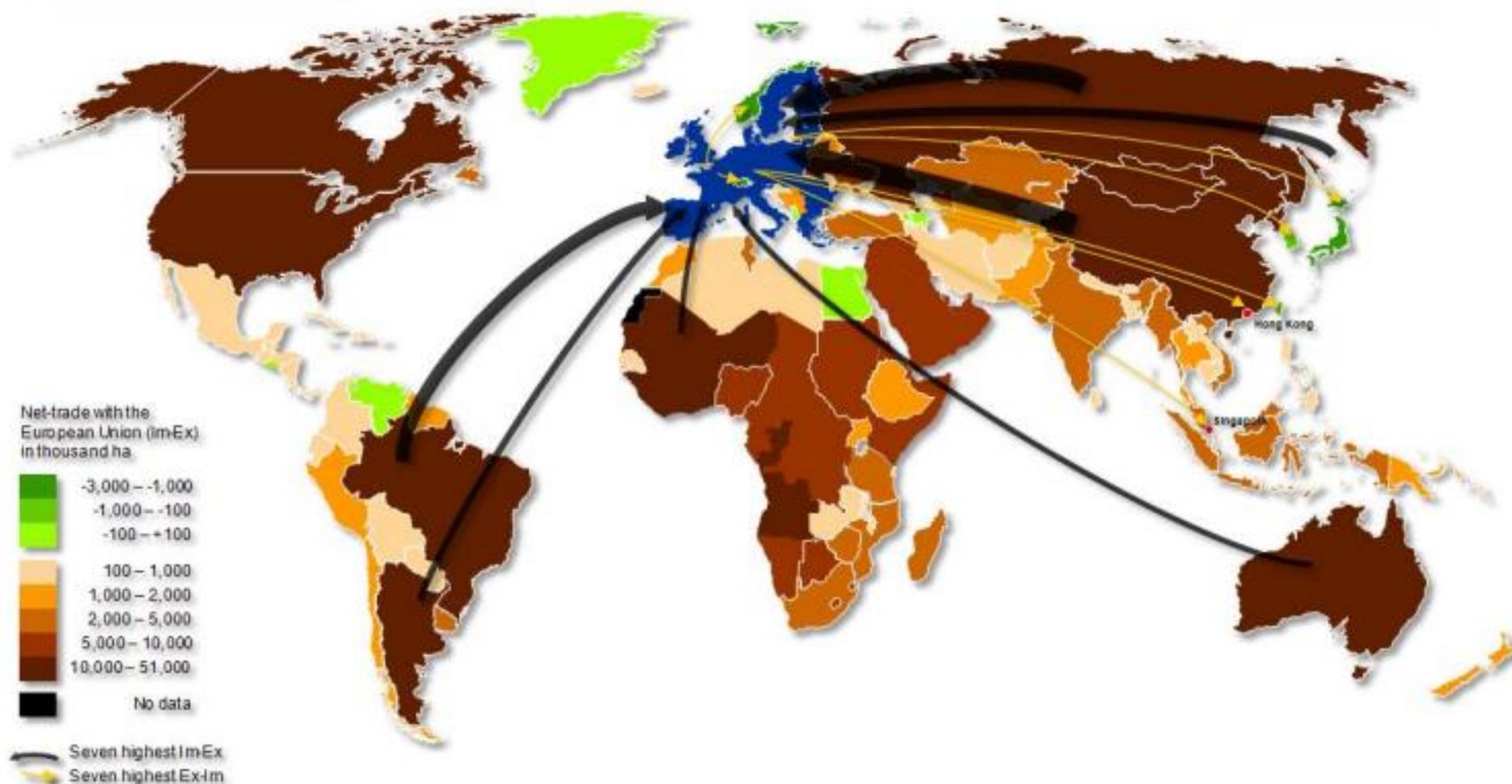
Source: Data from Eurostat, 2018, access to excel from link: <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html>

Source: Eurostat



Apart from goods, EU is also 'importing' land from the rest of the world

Figure 2: The Trade balance of virtual land for the EU 27



Source: October 2011, Friends of the earth Europe, Europe's land import dependency, https://www.foeeurope.org/sites/default/files/resource_use/2015/5_-_briefing_europe_global_land_demand_7_october.pdf



EU performing well in adv. manufacturing, IoT and mobility

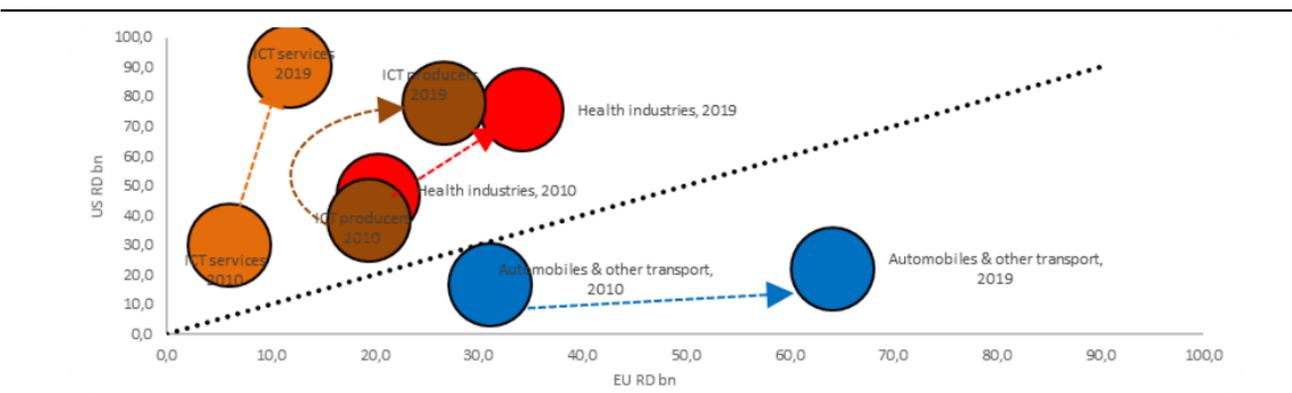
Technology	EU-27	USA	China
Advanced Manufacturing	++	+	-
Internet of Things	++	++	-
Mobility	++	+	--
Cyber Security	+	++	-
Advanced Materials	+	-	--
Industrial Biotech	+	++	--
Photonics	+	-	-
Nanotechnology	+	++	--
Robotics	-	+	++
Artificial Intelligence	-	++	++
Micro and nanoelectronics	--	-	-
Big Data	--	++	+
Total Score	+	++	-

Source: European Commission, May 5 2021, https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy/depth-reviews-strategic-areas-europes-interests_en



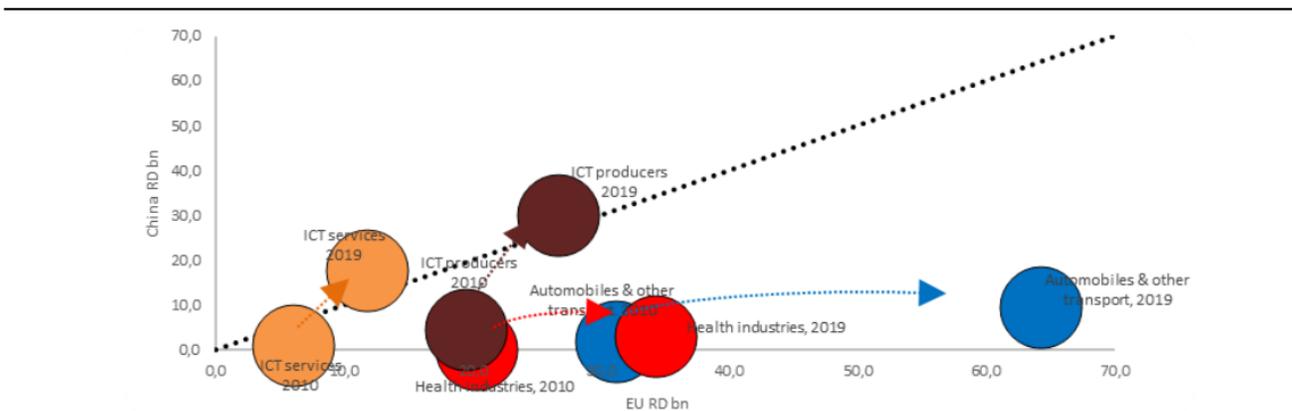
Apart from automotive, EU loosing ground on R&D investments

Graph 17: R&D investment in 2010-2019, comparison of selected sectors in the EU and US⁷⁰



Source: The 2020 EU Industrial R&D Investment Scoreboard, European Commission

Graph 18: R&D investment in 2010-2019, comparison of selected sectors in the EU and China⁷¹

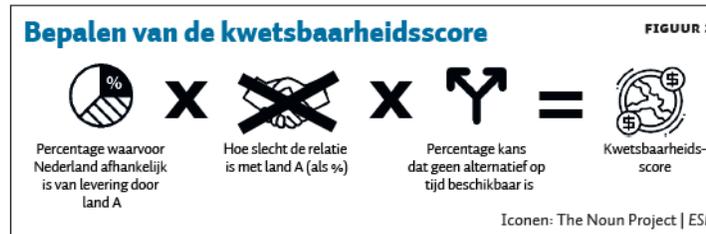
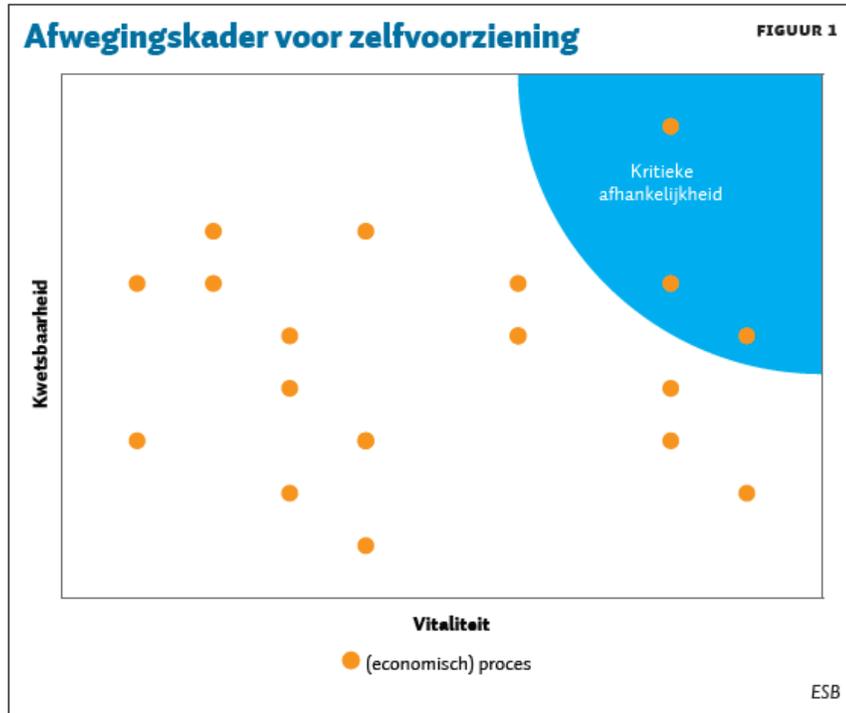


Source: The 2020 EU Industrial R&D Investment Scoreboard, European Commission

Source: European Commission, May 5 2021, https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy/depth-reviews-strategic-areas-europes-interests_en



Framework of vitality vs. vulnerability can support decisions on dependencies

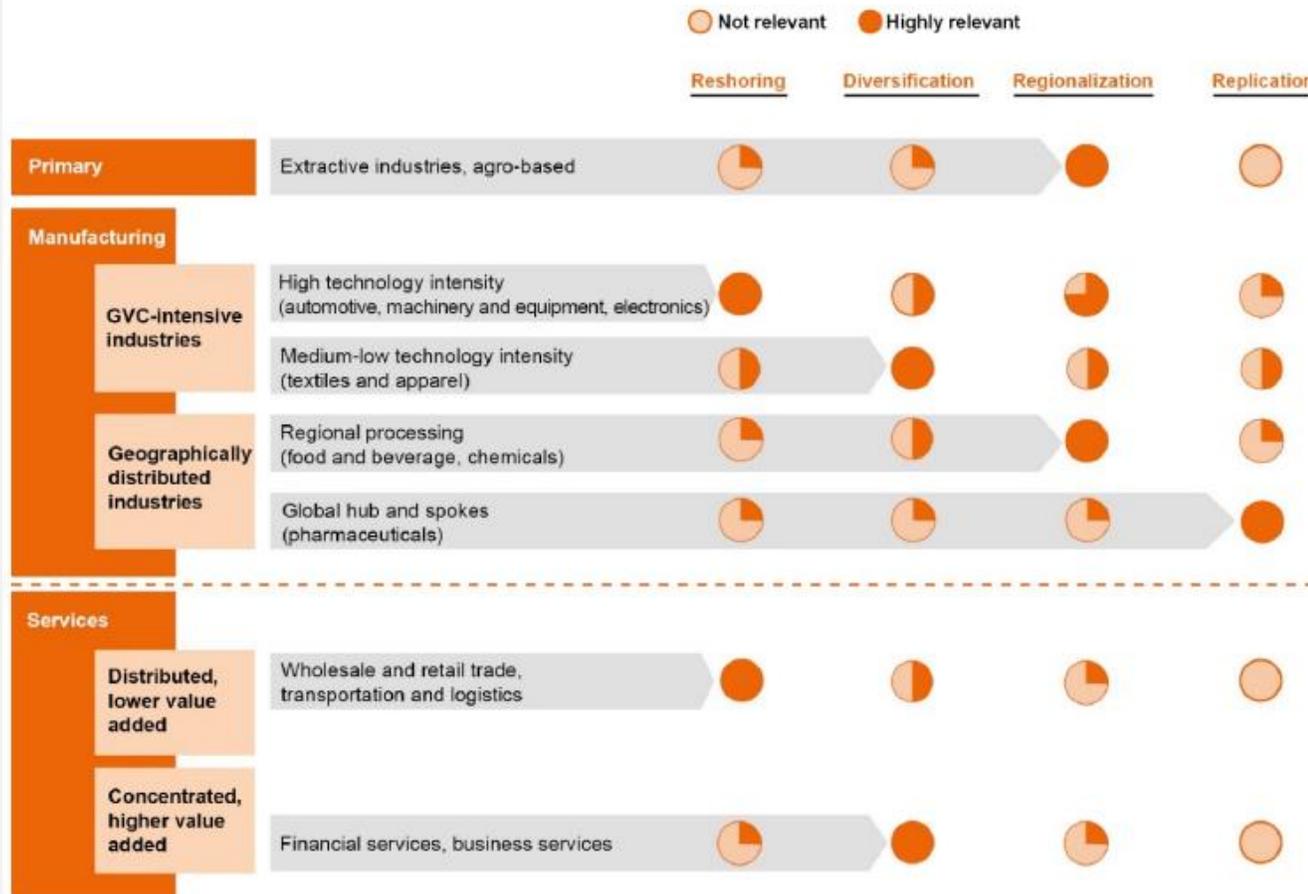


- **Vitality** determined by amount of victims and wounded in case of product/service absence, number of people with survival problems, and economic impact (as % of GDP)
- **Vulnerability** determined by % of product/service that is imported from country A, the 'badness' of the relationship with this country, and the % that no alternative will be available in time
- **Potential solutions:** quantity guarantees, building a reserve, emergency production plans, diversify suppliers, substitute suppliers, produce domestically or consciously do nothing



European commission expects Industry 4.0, geopolitics and sustainability to drive the restructuring of supply chains towards more regional production

Figure 9: Relevance of development trajectory, by industry



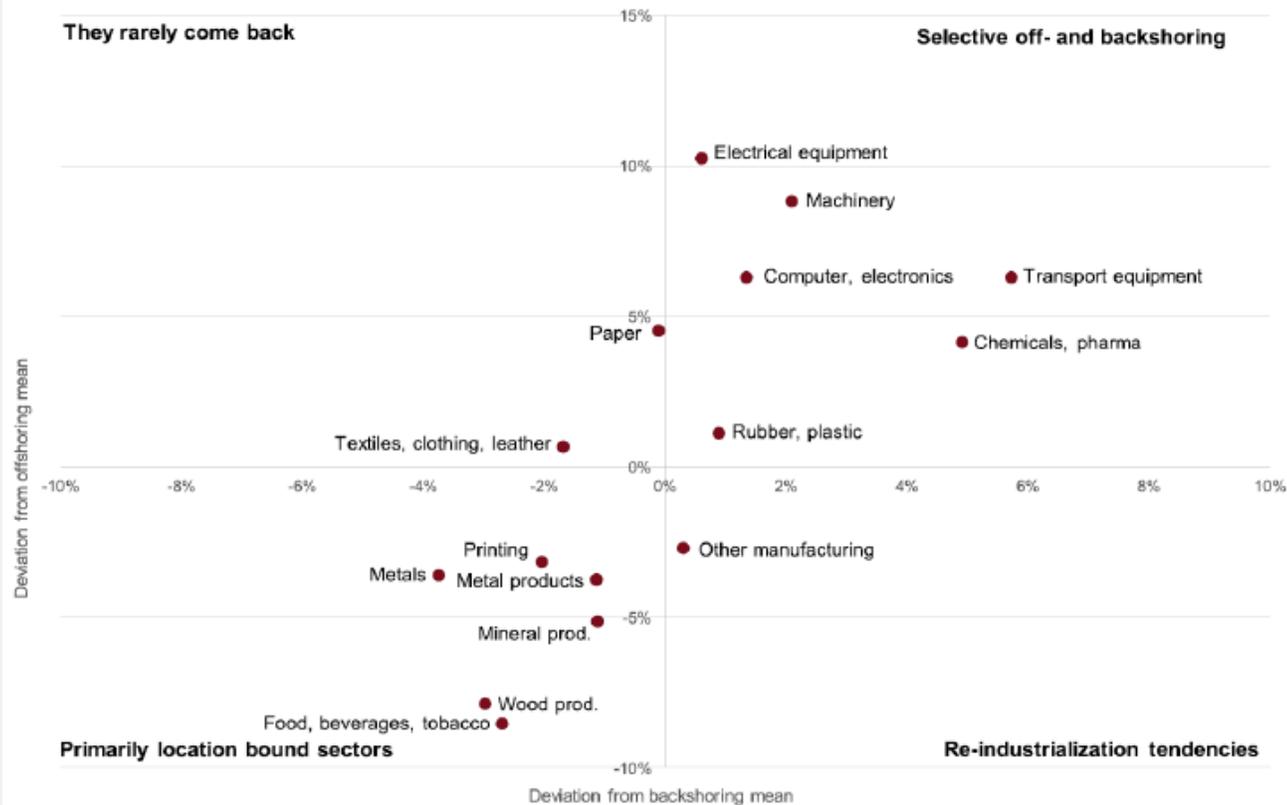
Source: own elaboration based on UNCTAD, 2020b, p. 166

- World Investment Report (UNCTAD, 2020) identifies **three megatrends that will affect today's GVCs**:
 - Technological change and new industrial revolution, shifting global economic governance, and sustainability
- It describes four development trajectories for GVCs:
 - **Reshoring** (shorter and less fragmented GVCs) driven by increasing automation and protectionism
 - **Diversification** (increased fragmentation of GVCs) driven by digitalisation and servicification)
 - **Regionalisation** (shorter but highly fragmented GVCs) driven by sustainability considerations or regional integration
 - **Replication** (shorter and less fragmented 'replicated' GVCs, despite high geographic distribution of activities) driven by distributed manufacturing or technologies such as 3D-printing
- The main drivers for reshoring are **automation processes and robotics** as well as **governmental policies pushing for greater self-reliance**
- This explains why **high-tech and GVC-intensive industries** (automotive, machinery and equipment, electronics) **are most likely to reshore**



Historically, off-shoring and backshoring have happened most in industries with high involvement of technology, IT and electronics

Figure 10: Sector-specific propensity to reshore



Source: Dachs et al., 2019

Note: Data refer to EMS 2015 (2013 to mid-2015), n=2 450

Also confirmed by empirical research, the sectors with the highest propensity to reshore (selective off- and backshoring) include:

- Electrical equipment
- Electronics and computer
- Machinery
- Motor vehicles and transport equipment
- Communication equipment
- Pharmaceuticals

This document has not been subjected to the same level of iterations and layout efforts as the full Dutch report



DENKWERK

Appendix A

China's Belt & Road initiative

Plane vs. train vs. truck vs. ship

	Ability to carry containers (number of TEU containers)	Cost for same distance (\$ per kg)	Emissions (kg CO2eq per tonne-km)
	~20,000	0.01	0.01 - 0.02
	~50	0.02-0.06	0.05 - 0.06
	1-2	0.1-0.2	0.2 - 0.66
	~6	~3	1.13

➤ Pricewise, rail freight on the China-Europe network is positioned between air and ocean, but the land link is **far more competitive with air** than it is for the traditionally cheaper and higher-volume ocean shipments.

Deepdive | Transit time and costs of sea vs rail transport



Deepdive | Trains vs. ships for China-EU route



Advantages of train transport

- Fewer kilometers since connection over road is more direct: **saving up to 50% of distance**
 - Especially for multi-modal transport from mainland production side this makes rail transport more competitive
- About **20 days instead of 40 days** from production in China to consumer in EU
 - **50% less working capital**: difference can be significant for high-value goods

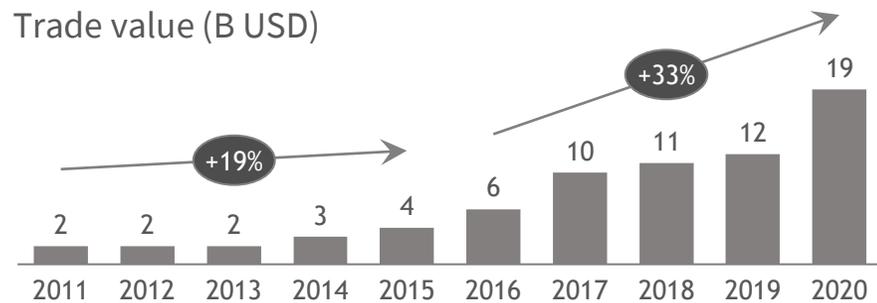
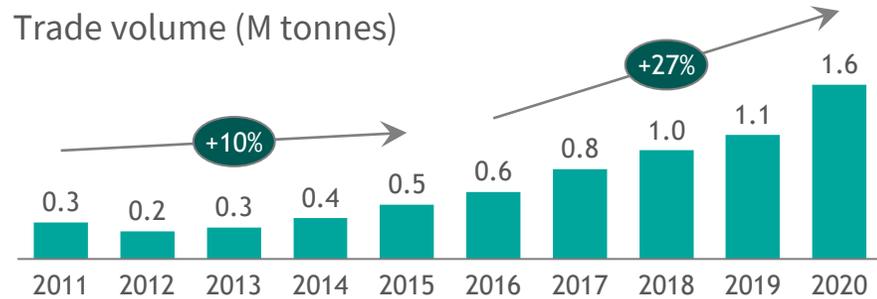


Risks and considerations

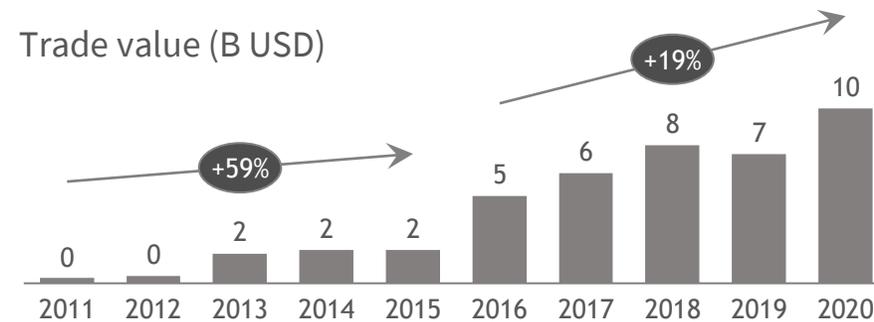
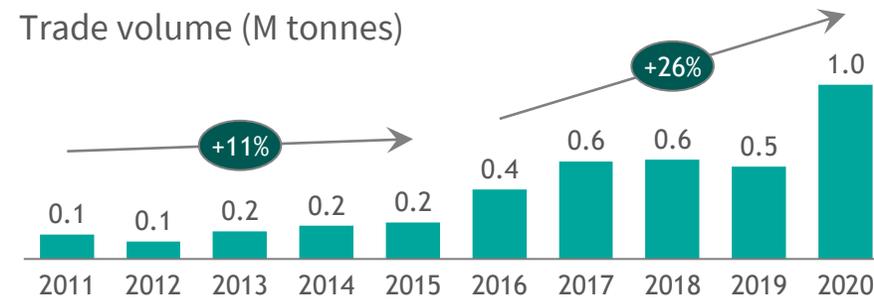
- Train **infrastructure in Russia is aged** and investments are lagging behind China.
- **Crossing of multiple borders** with which there are no trade agreements
 - Documentation needs to be well arranged to prevent delays
- Goods must be able to withstand **large temperature differences in a relatively short time** (e.g. high temperatures in China and well below freezing in Russia)

China-EU trade by train is in a lift, with almost 30% annual growth since 2016

China to EU trade by rail



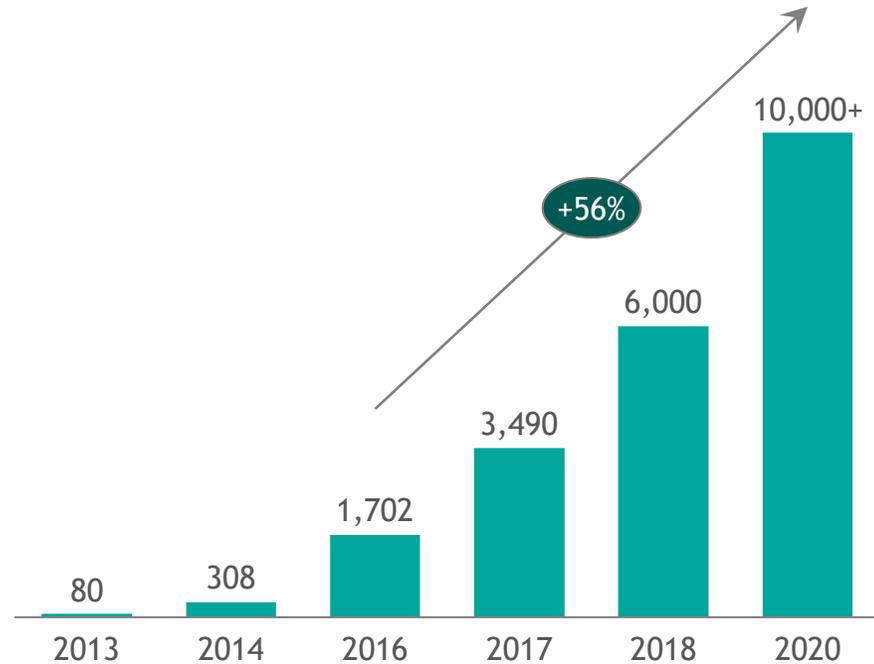
EU to China trade by rail



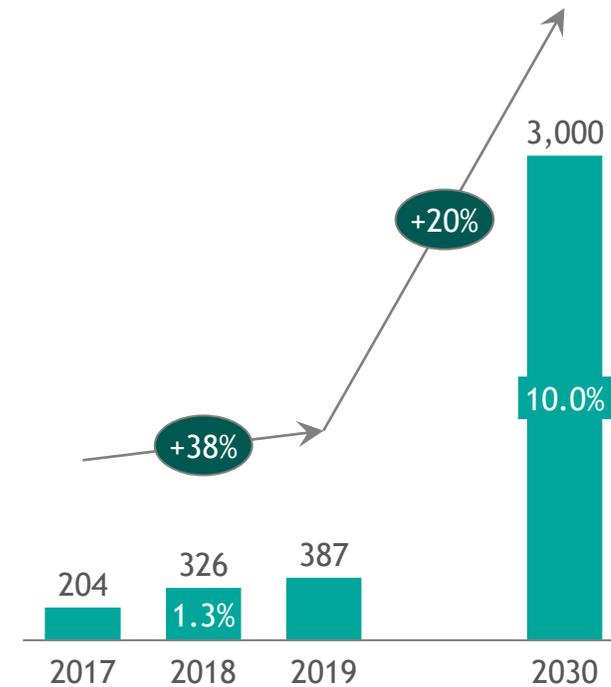
- Since the launch of Express Rail service in 2016, China to EU trade volume has more than doubled, reaching 1,580 thousand tonnes in 2020.
- Trade volumes have spiked during 2020, in part because of shortages in medical supplies within the EU, that were transported from China.

Explosive growth in train trips and load could put railways in charge of 10% of all container transportation between EU and China by 2030

Amount of train trips between China and EU has grown exponentially



Volume of railway transportation could be as high as 3M TEU by 2030, 10% of containers from China-EU

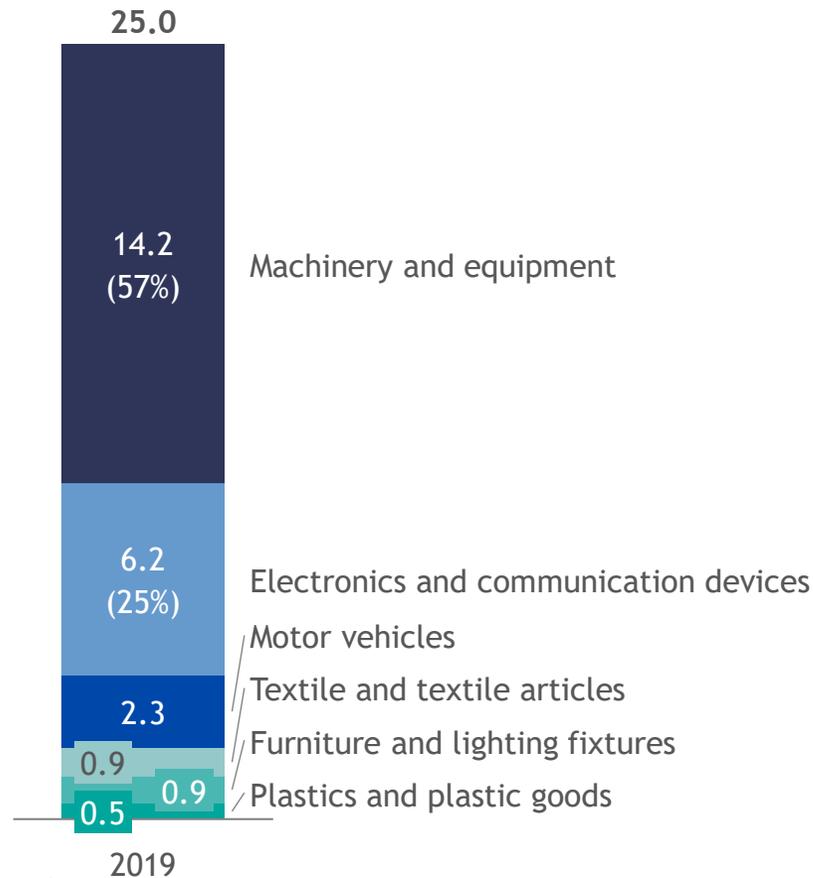


Source: Left: Combined figures found at IHS Markit Global Trade Atlas 2021, DSV website and UTCL website.
Right: Alexey Grom, General Director of UTCL ERA, December 2019. 2017-2019 volumes: UTCL, annual report 2019, assuming 86% MS.
<https://www.utlc.com/en/news/growth-of-container-transportation-via-railways-between-china-and-europe-is-possible-even-without-su/>

China-EU trains are transporting high-value goods for global brands

Categories machinery and equipment or electronics and communication devices jointly make up 81%

Main clients are global brands in automotive, computers, fashion and electronics



Note: Value in B\$.
Source: UTLC (the Eurasian Rail Alliance), annual report 2019.

Appendix B

Service trade protectionism in Singapore

Singapore committed to liberalize (at least partially) only 7 sectors



Business services



Communications services



Construction and related services



Distribution services



Educational services



Environmental services



Financial services



Health and social services



Tourism services



Recreational, cultural and sports services



Transport services



Other services¹

Mostly liberalized Partially liberalized Not liberalized

1. Including: Services of membership organizations, Domestic services, Other services, Services provided by extraterritorial organizations and bodies
Note: GATS = General Agreement on Trade in Services. Other services is the least committed sector. Only 9 countries/custom unions have GATS schedule on it: EU, Gambia, Kenya, Lesotho, Malaysia, Mexico, South Africa, Ukraine, Venezuela
Source: WTO, CPC v2.1

WTO defines four “modes” for services trade



1. Cross-border supply

Services supplied from own territory into another one



Telco customer receives help from a call center abroad



2. Consumption abroad

Services consumed by nationals in a foreign territory



Tourists spend on hotels and food while on holidays abroad



3. Commercial presence

Services supplied via affiliates established abroad



National-owned hotels abroad repatriate profits



4. Presence of individuals

Services supplied via nationals working abroad



Consultants based in Country X work in Country Y

Singapore sets clear priority to employ local/resident staff

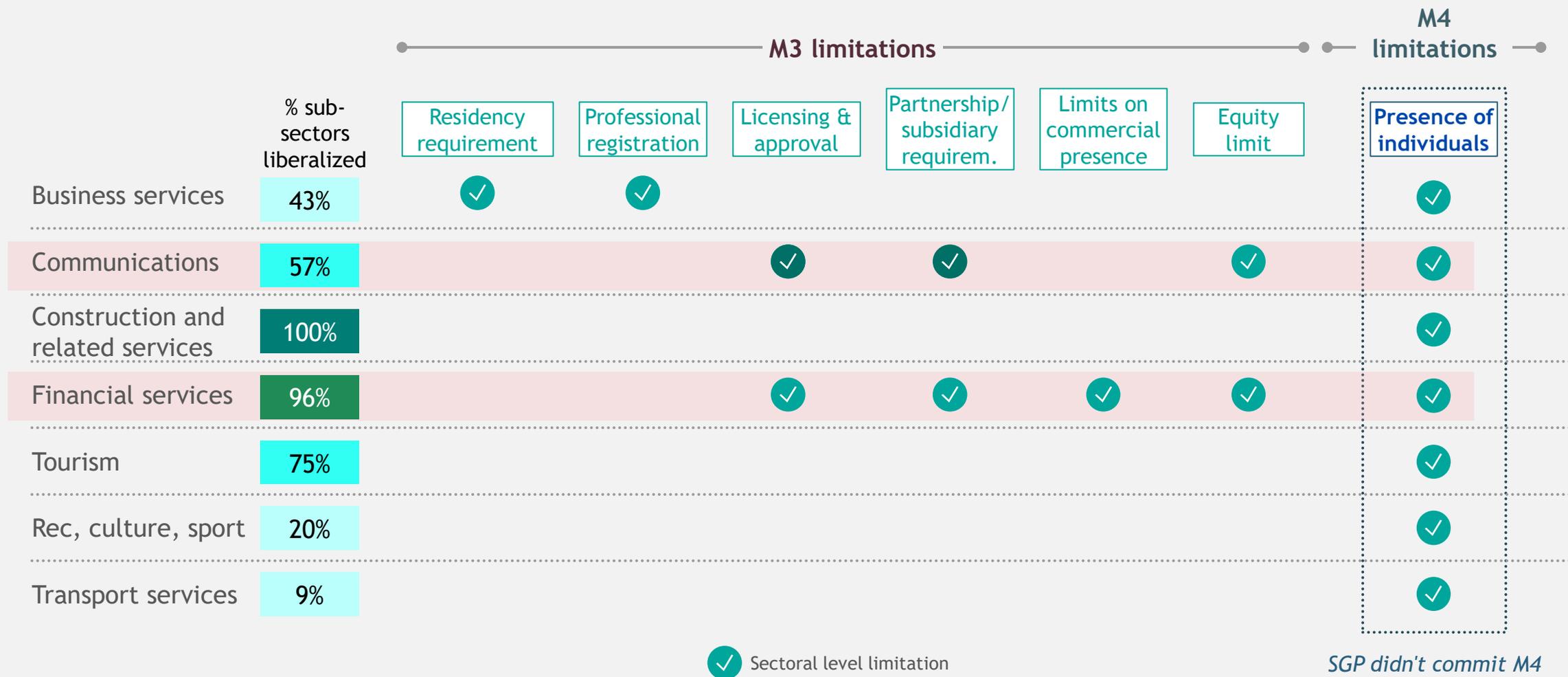
 Mode of service trade	 Limitations to market access/national treatment
 M1. Cross-border trade	 <ul style="list-style-type: none"> No limitations
 M2. Consumption abroad	 <ul style="list-style-type: none"> No limitations
 M3. Commercial presence	 <ul style="list-style-type: none"> Local manager has to be SGP citizen/permanent resident/ employment pass holder At least 1 director of company must be locally resident¹ All foreign company branches registered in SGP must have ≥ 2 locally resident¹ agents
 M4. Presence of individuals	 <ul style="list-style-type: none"> No commitments by Singapore to liberalize this mode, yet entry for managers, executives, and specialists of firms ("intra-corporate transferees") limited to 3y period (extendable to 5y)

1. To be classified as locally resident, individual needs to be meeting one of the following: be SGP citizen, be SGP permanent resident, be SGP employment passport holder

Note: Horizontal section has a specific clause that prohibits any override of financial services limitations

Source: Singapore GATS commitments charter

For each of the 7 sectors committed by Singapore, additional limitations are set especially across Communications and FS¹



1. Financial Services
Source: Singapore GATS commitments charter; BCG analysis