



Executive
Perspectives

Perspective on the Future of Trade

BCG Global Advantage and Energy Practice Area

Prepared: 3 Nov 2022

Introduction to this document

The war continues to be first and foremost a humanitarian crisis, and the top priority for all continues to be the safety and security of people

Moreover, the continuity of the war has resulted in profound economic impact, not only within Ukraine but globally — as supply chains face disruption, commodity prices rise, and unprecedented levels of sanctions take hold

We continue to examine the most pressing issues and questions on the minds of our clients and teams

This edition shares the latest update on the **global economic impact** of the war, as well the **future of global trade** based on the conflict and other factors. The document outlines our perspective on the future of trade, key sector impacts (particularly to energy), and implications for business leaders

War in Ukraine: Global Update & Perspective on the Future of Trade

AGENDA

Perspective on Future of Trade

- Context and current situation
- Focus on energy
- Implications for leaders
- Appendix

Summary | Future of Trade affected by Ukraine crisis, other geopolitical forces

Future of trade

Future of Trade (FoT) perspective grounded in global geopolitical scenarios for 2030

Three major drivers underlie shifting trade flows:

- 1 **Russia-West fall-out:** EU-Russia trade sees massive decline as Western allies place sanctions on Russia; trade moves from Russia-EU to Russia-East (China, India), with most disruptive impacts in Energy
- 2 **China trade dynamics:** Slower US / EU trade with China, as increased focus on trade resilience in face of geopolitical risk drives trade growth with ASEAN, India, Mexico, and increasing "near-shoring" and "friend-shoring"
- 3 **ASEAN trade growth:** Region to benefit from strong growth with China, US, and EU; push (e.g., geopolitical tensions, higher cost structure in China) and pull (e.g., trade connectivity) factors drive growth

Impacts on energy

Energy trade changes **drive near-term price increases**; high prices to persist into 2023-24, particularly in EU. Reduced economic growth requires measures (e.g., subsidies) to **manage immediate energy shocks**

Longer-term policies to sustainably support EU phase-out of Russian energy could have **significant trade implications** (e.g., reoriented energy supply chains, accelerated shift to renewable energy build)

Implications

In short-term, businesses need to understand trade flow risks across value chain, prioritize no-regrets moves, and intensify contingency planning

In long-term, businesses must build capabilities to manage volatility and apply scenario planning for resilience

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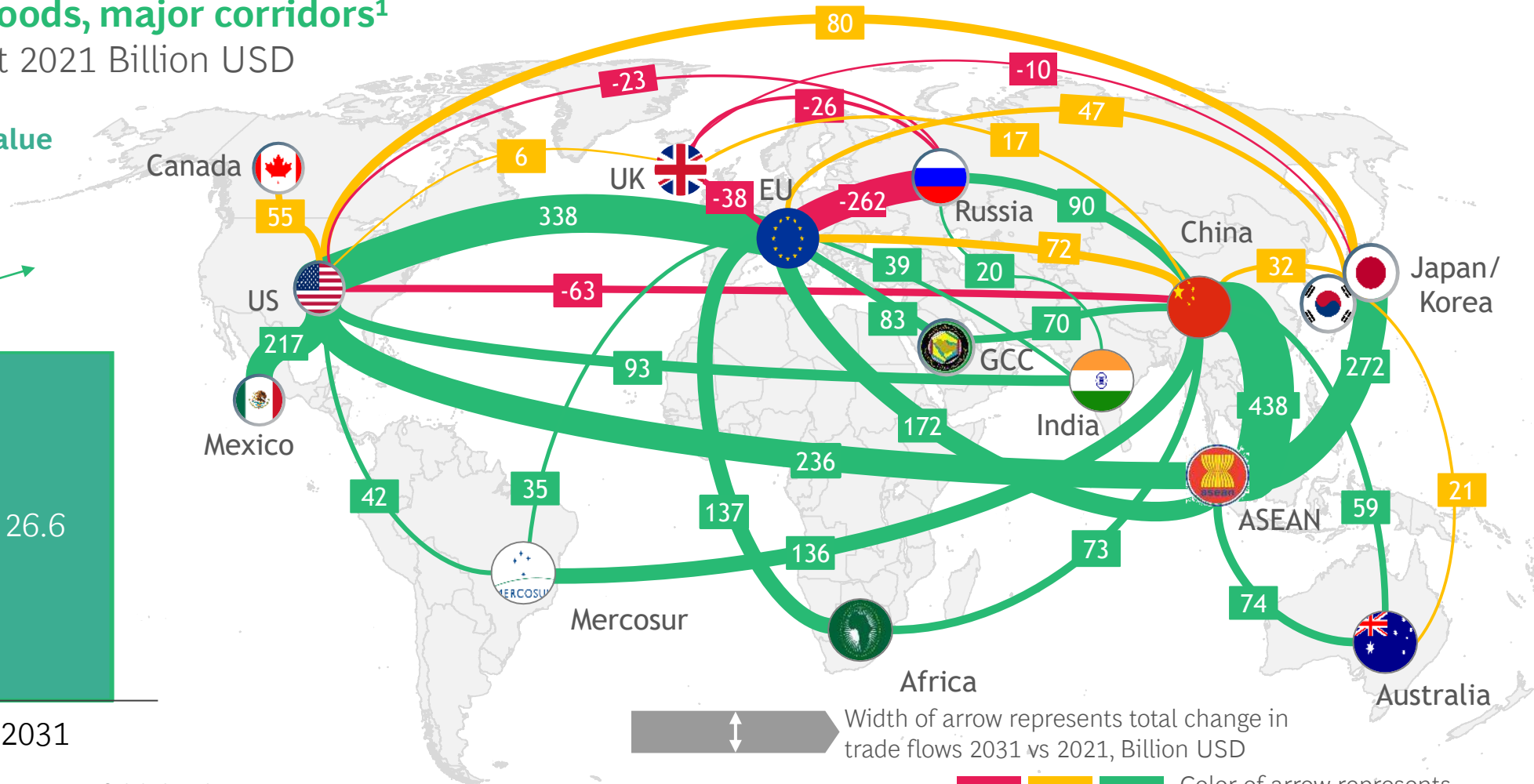
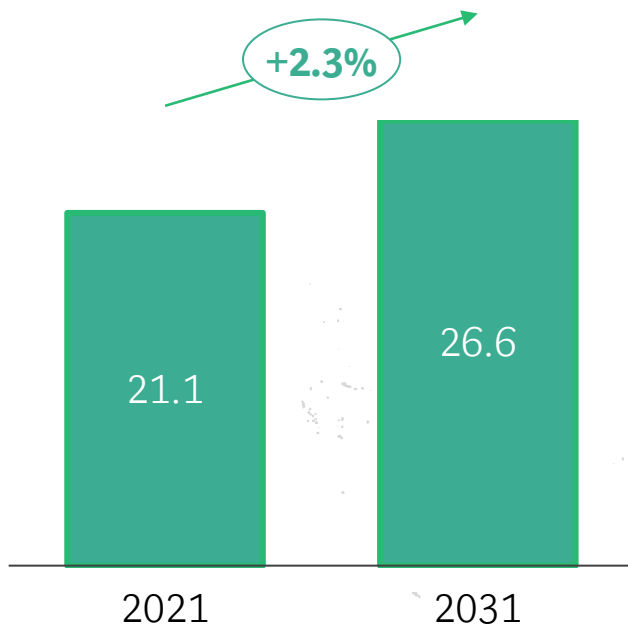
FoT 2031 outlook | Geopolitical tensions contribute to reshaping of trade flows

Change in trade of goods, major corridors¹

2031 vs. 2021, constant 2021 Billion USD

Total global goods trade value

Trillion USD



1. Corridors in the map above represent ~46% of global trade.

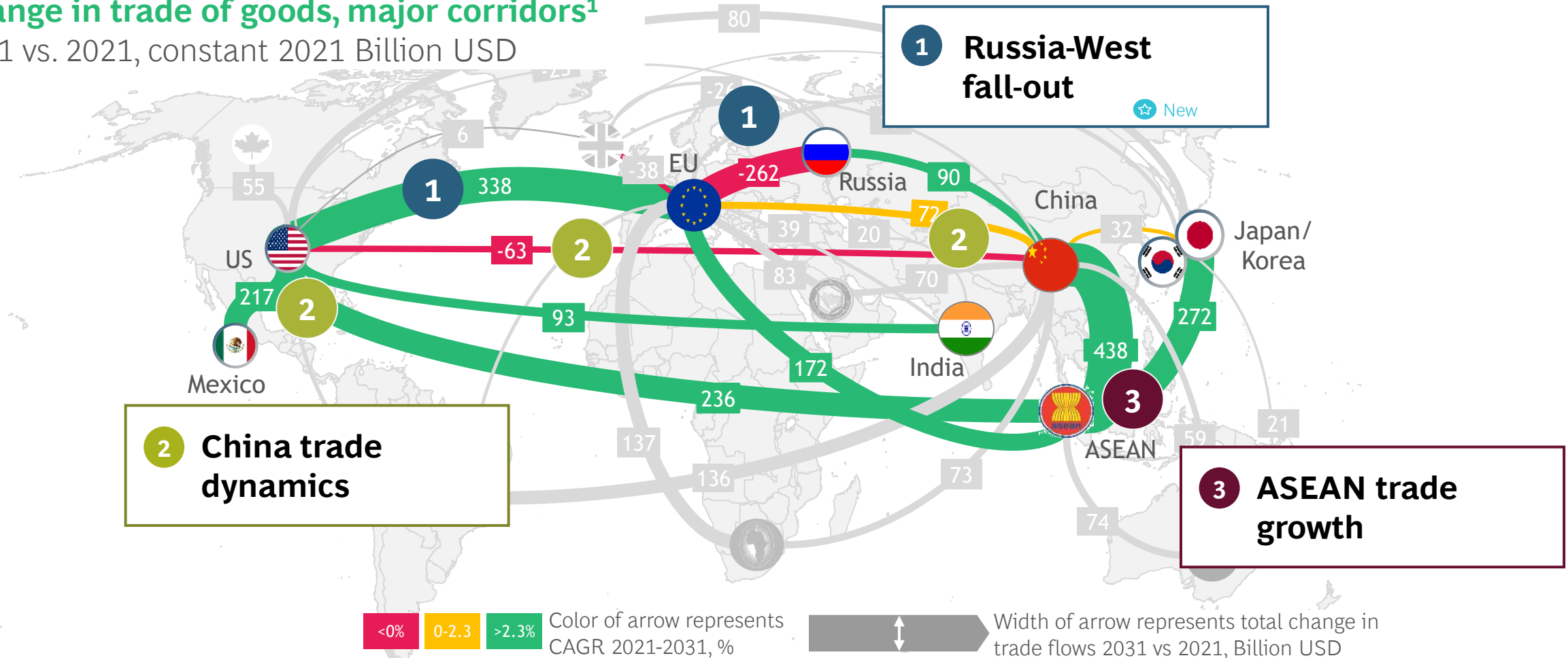
Note: EU Intra-trade estimated to grow by 1.5T USD by 2031 CAGR 1.8%; inflation adjusted; BCG does not provide legal or regulatory advice.

Source: UN Comtrade, Oxford Economics, IHS, WTO, BCG Global Trade Model 2022, BCG analysis

Three significant corridor shifts; one new, other two are trend accelerations

Change in trade of goods, major corridors¹

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Source: UN Comtrade, Oxford Economics, IHS, WTO, BCG Global Trade Model 2022, BCG analysis

Ukraine crisis directly led to Russia-West fall-out & accelerated other trends

Immediate impact (new) →



1 | Russia-West fall-out

Significant Russia & West (primarily EU) trade decline

Russian exports to shift from West to East (e.g., China, India)

Key impact

2-way trade flow shifts



2031 trade value
Δ vs. 2021 trade



Accelerated trend →

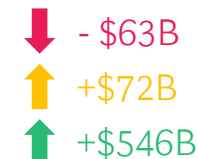
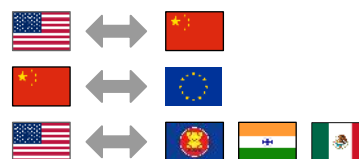


2 | China trade dynamics

Uncertainty of geopolitical outcomes drive friend-shoring of supply chains

Relative decline US/EU-China trade, nuanced impact on sectors driven by policy action choices

2031 trade value
Δ vs. 2021 trade

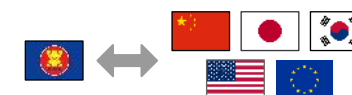


3 | ASEAN trade growth

ASEAN trade increases; region gains from geopolitical tensions, low-cost structure & good trade connectivity

ASEAN exports continue to increase

2031 trade value
Δ vs. 2021 trade



1. Russia-Japan trade flows not included 2. Figure includes ASEAN-US trade (+\$236B) that is also counted under China Trade Dynamics

Note: Above figures quoted in constant 2021 USD; country trade flows utilized in above calculations include RU-EU (-\$262B), RU-UK (-\$26B), RU-US (-\$23B), RU-CN (+\$90B), RU-IN (+\$20B), US-EU (+\$338B), US-CN (-\$63B), US-ASEAN (+\$236B), US-IN (+\$93B), ASEAN-CN (+\$438B), ASEAN-JP & KR (+\$272B), ASEAN-EU (+\$172B)

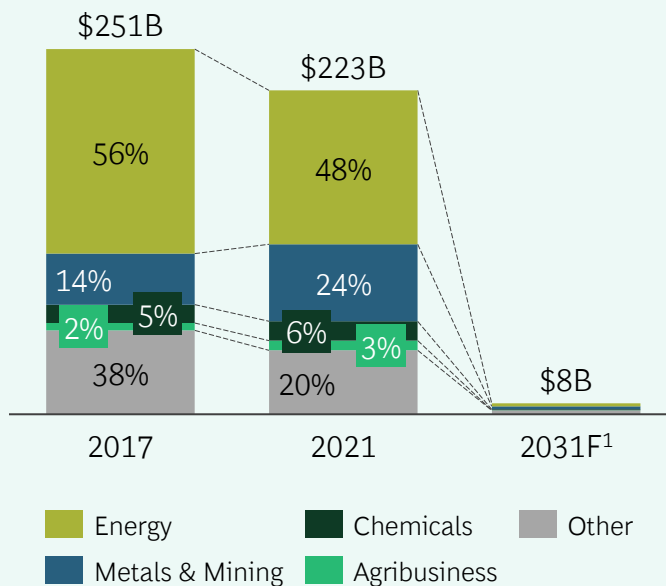
Russia → West | Most disruptive impacts in energy given sector's export share

Russia-West



Russian exports to Western allies could shift East to China & India

Russian exports to West, by sector (constant 2021 billion USD)



Key sectors



Energy

Focus of following section



Metals & mining

Future of trade

- **Decreased trade flows** given Russian energy sanctions and EU's drive to energy independence
- **Reallocation to other energy sources and producing nations**



- **Early shocks** from material shortage, **mostly short-term** as firms finding alternative supply
- **Diversification of key suppliers**, though **limited for some rare materials** (e.g., palladium)



Example



EU expediting energy imports (e.g., LNG, low-carbon ammonia) from **Western Allies, Middle East**



Development of **new smelters and mines** (e.g., nickel in Indonesia, Philippines)

1. Breakdown is as follows: Energy (28%), Metals & Mining (26%), Chemicals (8%), Agribusiness (2%), Other (35%)

Note: 2017 chosen as base year as year when trade tensions began (e.g., Trump came into office, Brexit negotiations began)

Source: UN FAO Information Note, SP Global, UN Comtrade, BCG Global Trade Model, BCG analysis

Russia → West | EU aiming to end dependency on Russian energy by 2030



Two main EU plans to reduce import dependence...

6th Sanctions Package focuses on oil, petroleum

92%

Target reduction in Russian oil imports
by end of 2022

Further sanctions enacted by the EU in June '22 focus on oil and petroleum

The EU's aim is to minimize seaborne crude oil imports and cut other refined petroleum products over next 6-8 months

RePowerEU aims to reduce import of Russian gas

66%

Target reduction in Russian natural gas supply
by end of 2022

Requires strong coordination to realize, given risks (e.g., intense competition for LNG from Asia, pace of Net-Zero transition)

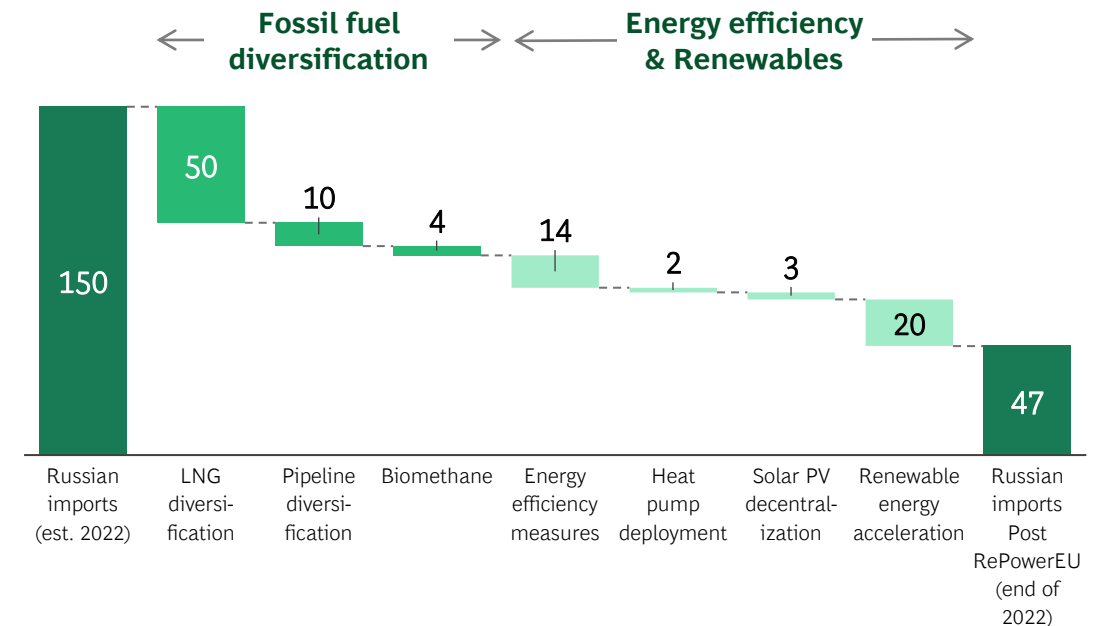
95%

Long-term (~2030) reduction target of gas consumption requires front-loading of already aggressive plans

...plan to reduce gas dependence requires fossil fuel diversification & renewables

Target levers for reduction of Russian gas dependence

Billion cubic meters equivalent, for year 2022

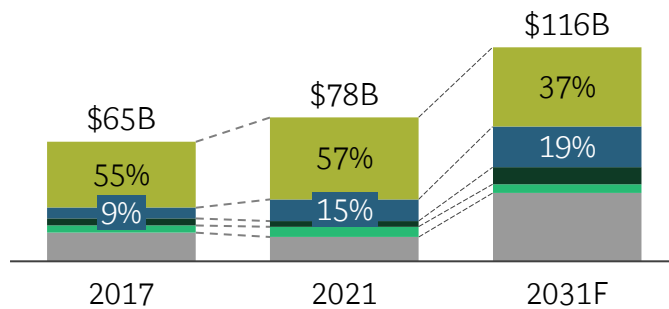


Russia → Others | China & India set to benefit most from trade fallout

Russia-China & India



*Russian exports to China & India, by sector
(constant 2021 billion USD)*



Key sectors



Energy

Future of trade

- **Given sanctions**, potential for China & India to continue buying **discounted Russian energy**
- **China & India well-positioned** to capture decline in Russian sales to West; however, value offset by lower forecasted prices



Example

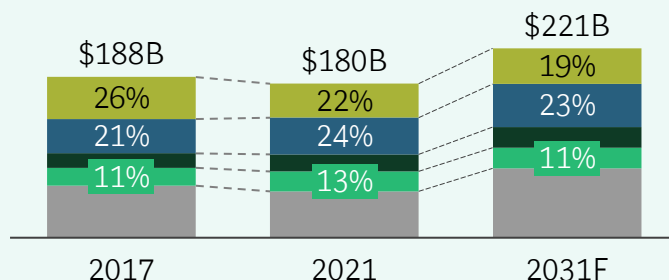


Russia & China discussing potential **major gas pipeline project**, the Power of Siberia 2

Russia-RoW



*Russian exports to RoW, by sector
(constant 2021 billion USD)*



Key sectors



Agribusiness

Future of trade

- **Emerging countries susceptible to food pricing shocks**, especially where Russia has outsized market share (e.g., Wheat)
- **Uncertain current & long-term impacts** for grain & fertilizer exports; need for countries with high dependence on RU to **seek alternate suppliers**



Example



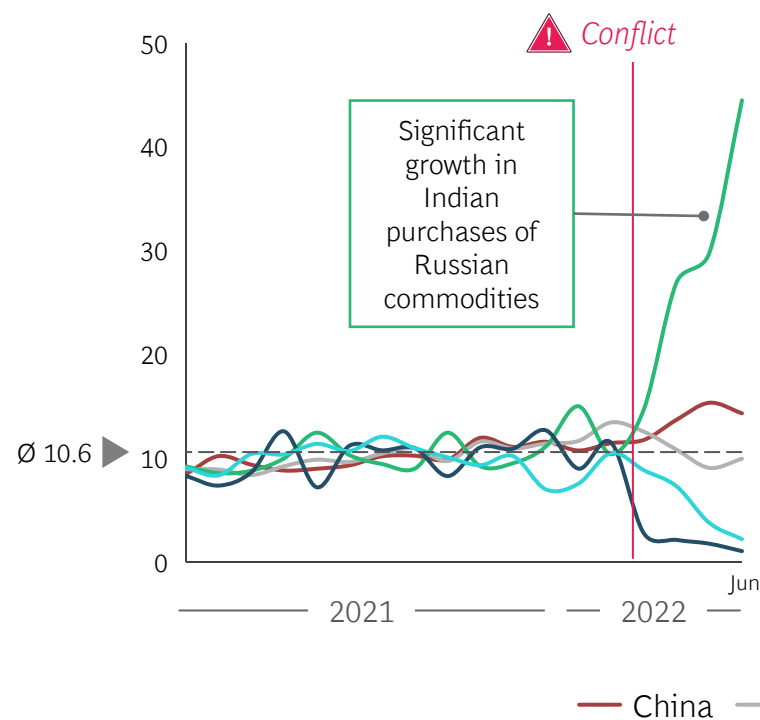
India, Canada & Australia emerging as **alternatives to Russian wheat (IN) & rapeseeds (CA, AUS)**

Energy Metals & Mining Chemicals Agribusiness Other

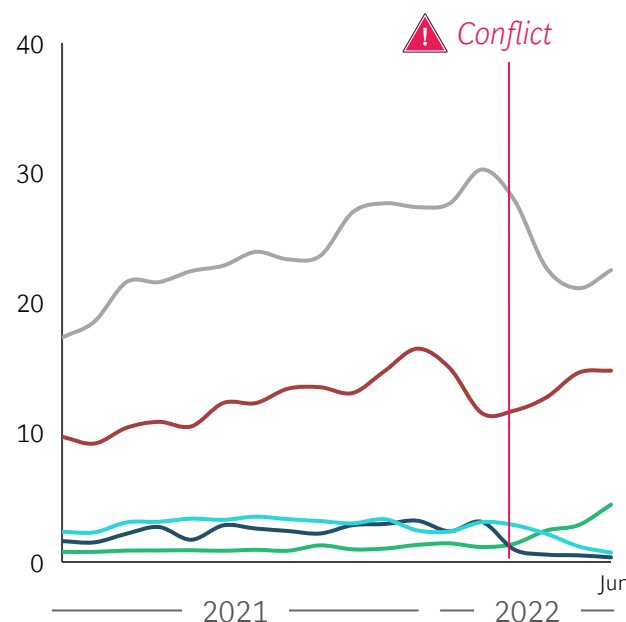
Russia → Others | Post-conflict trend in trade from West to East to continue

Russia's monthly total trade by partners

Relative to 2021 monthly average
(‘21 – ‘22 Jun, 10 = 2021 monthly average)

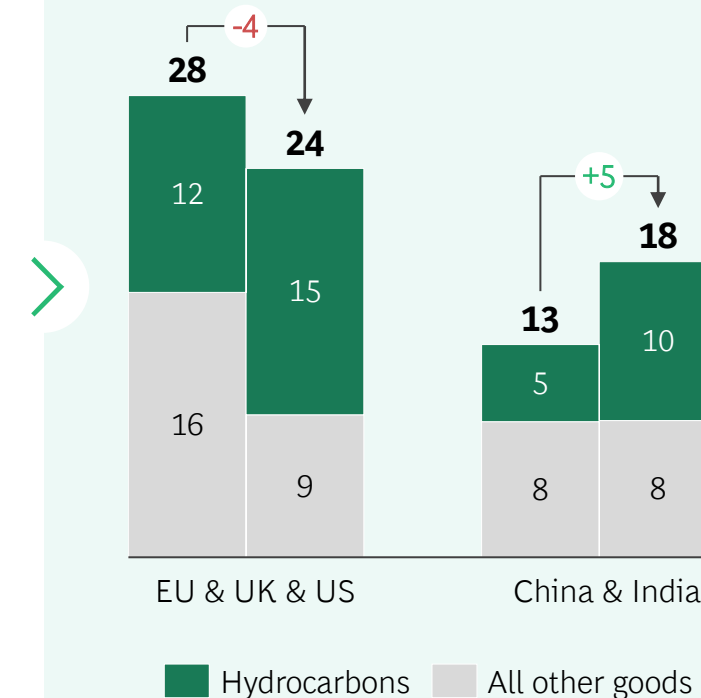


Absolute basis
(‘21 – ‘22 Jun, USD B)



Shifts from West to East

Monthly average Russia trade value by trade groups ('21 vs '22 post-conflict to Aug '22, USD B)



Note: Trade data based on China, EU, India, UK and US's reported trade with Russia from Jan 2021 to June 2022; The inflation is not captured in the analysis
Source: IHS Markit; BCG analysis

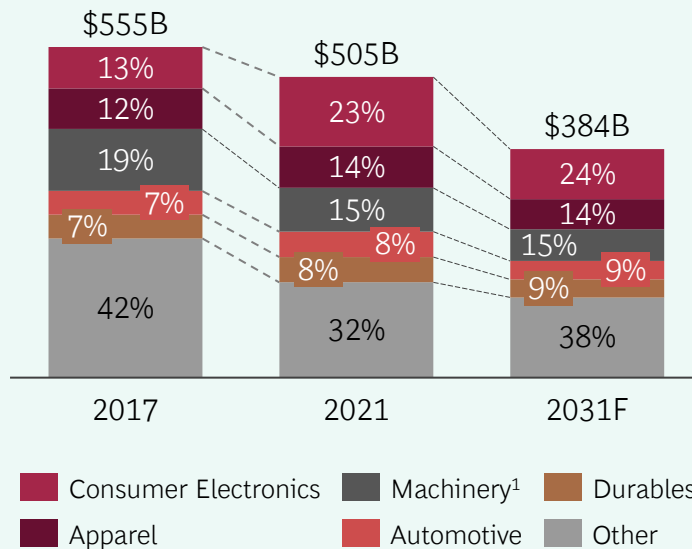
China → US | China still core partner, nuanced sectoral impact from tensions

China-US



Sectors exposed to US policy action more vulnerable than others

US imports from China, by sector (constant 2021 billion USD)



Key sectors



Consumer electronics

Future of trade

- **Complex trade impact** as firms diversify from China while retaining China capacity
- So far, most consumer electronics have **not attracted tariff policy action** in US-China



Example



Chinese laptop OEM maintains #3 share in US market



Apparel

- **Trade continues to decrease** driven by rising Chinese costs and trade concerns
- Chinese industrial policy seeking to **exit low value-add manufacturing**



Major sport fashion apparel co. **moving from China to ASEAN**



Automotive & Machinery¹

- **Trade reduction in sectors subject to policy actions** (e.g., Trump-imposed Sect. 301 tariffs)
- **US policy drives near- / friend-shoring** (e.g., US IRA, USMCA tariff preferences)



Major EV manufacturer locating **battery production in Great Lakes Region**

1. Includes electrical and mechanical machinery

Note: 2017 chosen as base year as year when trade tensions began (e.g., Trump came into office, Brexit negotiations began)

Source: SCMP, Area Development, Foreign Policy, UN Comtrade, BCG Global Trade Model, BCG analysis

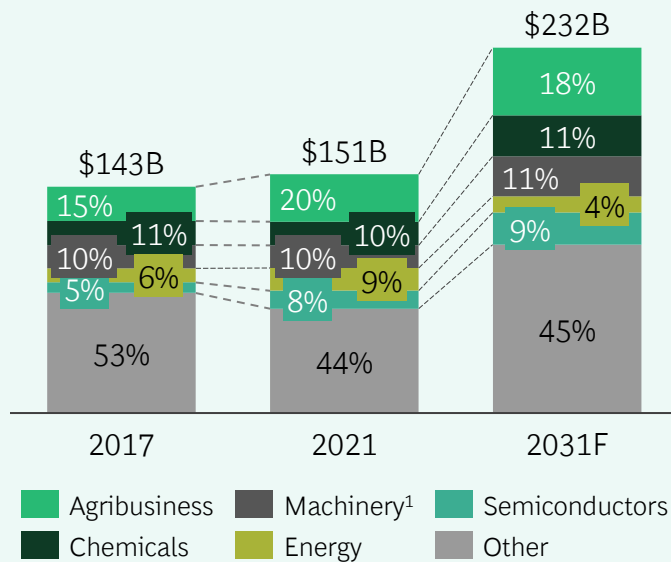
US→China | US exports to China forecast to grow

US-China



Exports to China continue to grow, assuming no further policy action

US exports to China, by sector (constant 2021 billion USD)



Key sectors



Agribusiness

Future of trade

- **Uncertain trade impact** given growing Chinese consumption, but subject to policy actions
- Under Jan 2020 **"Phase 1" deal**, China agreed to buy US agricultural goods², leading to 112% inc. vs. 2019; deal expired Dec 31, 2021



Machinery¹

- **Uneven trade impact** by machinery type
- **US aircraft deliveries to China collapsed** in midst of COVID; uncertainty on rebound
- US remains leader in machinery; despite innovation efforts, **China will continue to rely on US**



Semiconductors

- **Uneven trade impact** based on tech sensitivity
- **More sensitive technologies at higher risk** of US government action given national security concerns; could hurt Chinese goals of innovation
- Less sensitive tech **so far unaffected**



Example



High Chinese demand for soybean imports persist, despite Chinese domestic production



~140 unfilled Chinese orders from major US aircraft manufacturer



New US export controls on advanced chips & tech to China

1. Includes electrical and mechanical machinery; 2. However, China only purchased ~58% of agreed-upon US exports (~83% of agricultural goods) in the deal

Note: 2017 chosen as base year as year when trade tensions began (e.g., Trump came into office, Brexit negotiations began)

Source: US Farm Bureau, Reuters, US-China Business Council, SCMP, Leeham, PIIE, UN Comtrade, BCG Global Trade Model BCG analysis

Favorable conditions driving significant growth in ASEAN trade

Push factors are driving some trade growth away from existing partners...



Geopolitics Shifting Trade

Greater concern over geopolitical risk disrupting existing trade routes



China relatively more expensive

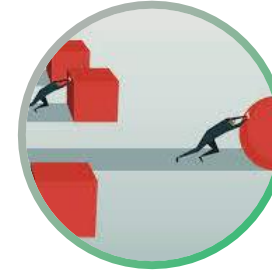
ASEAN labor now priced 10-15% lower than Chinese labor

...while **pull factors** make the ASEAN region attractive to international trade connections



Large Fast- growing Economy

ASEAN will be 4th largest economy by 2030; high economic growth to continue



Sectoral Diversity

Strong manufacturing, tech, consumer, mining, agriculture & construction sectors



Good Trade Connectivity

Strong market access from membership in both RCEP & CP-TPP trade blocs

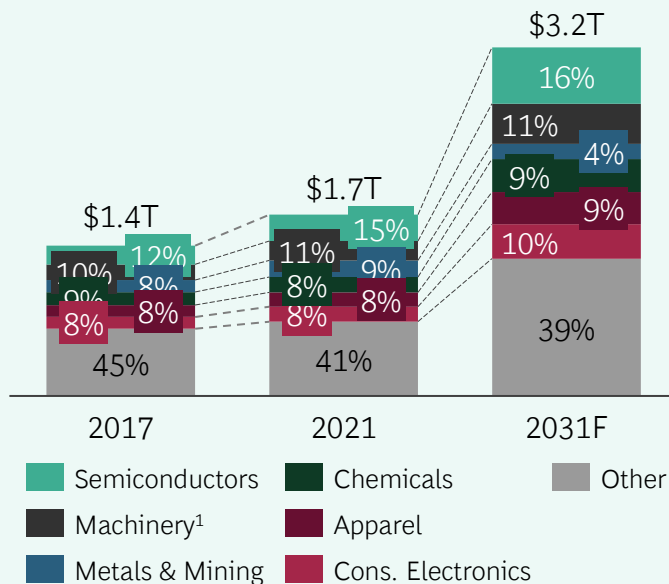
ASEAN → World | ASEAN becoming an attractive trading partner globally

ASEAN-World



ASEAN exports continue to grow, driven by strong push & pull factors

*ASEAN exports¹, by sector
(constant 2021 billion USD)*



Key sectors



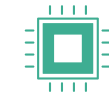
Semiconductors

Future of trade

- **Growing production** due to competitive costs, geopolitical diversification (e.g., relative to China)
- **Diversification** of sourcing **benefits ASEAN producers** incl. Thailand and Malaysia



Example



Leading semiconductor manufacturer considers **Singapore expansion**



Metals & Mining

- **Growing production** with high FDI (e.g., Malaysia, Indonesia, Philippines), **value offset by forecasted decline in commodity prices**
- Given critical mineral reserves, **ASEAN well-positioned to grow** & potentially attract downstream value chains



Automotive giants adding **Indonesian nickel** to battery supply chain



Other sectors

- **Growing, well-diversified economy** (e.g., consumer, manufacturing, agriculture)
- **ASEAN trade to grow** in virtually all sectors with every major trading bloc



Leading consumer electronics firm **partially migrating flagship goods** to Vietnam

1. Intra-ASEAN trade is included in these figures;

Note: 2017 chosen as base year as year when trade tensions began (e.g., Trump came into office, Brexit negotiations began)

Source: Nikkei Asia, UN Comtrade, BCG Global Trade Model, BCG analysis

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Perspective on Future of Trade

➤ Context and current situation

➤ **Focus on energy**

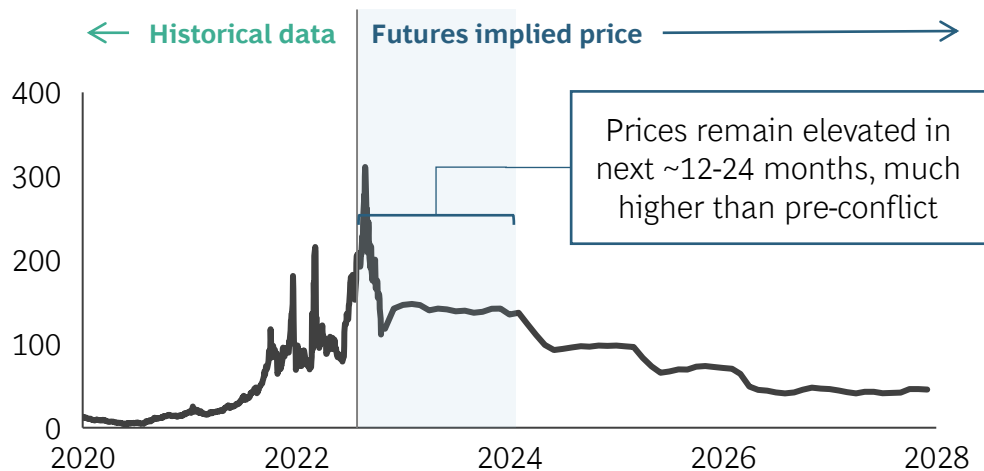
➤ Implications for leaders

➤ Appendix

Risks associated with Russian energy phase-out must be carefully managed

In near-term, high energy prices to persist, leading to inflation & lower economic growth

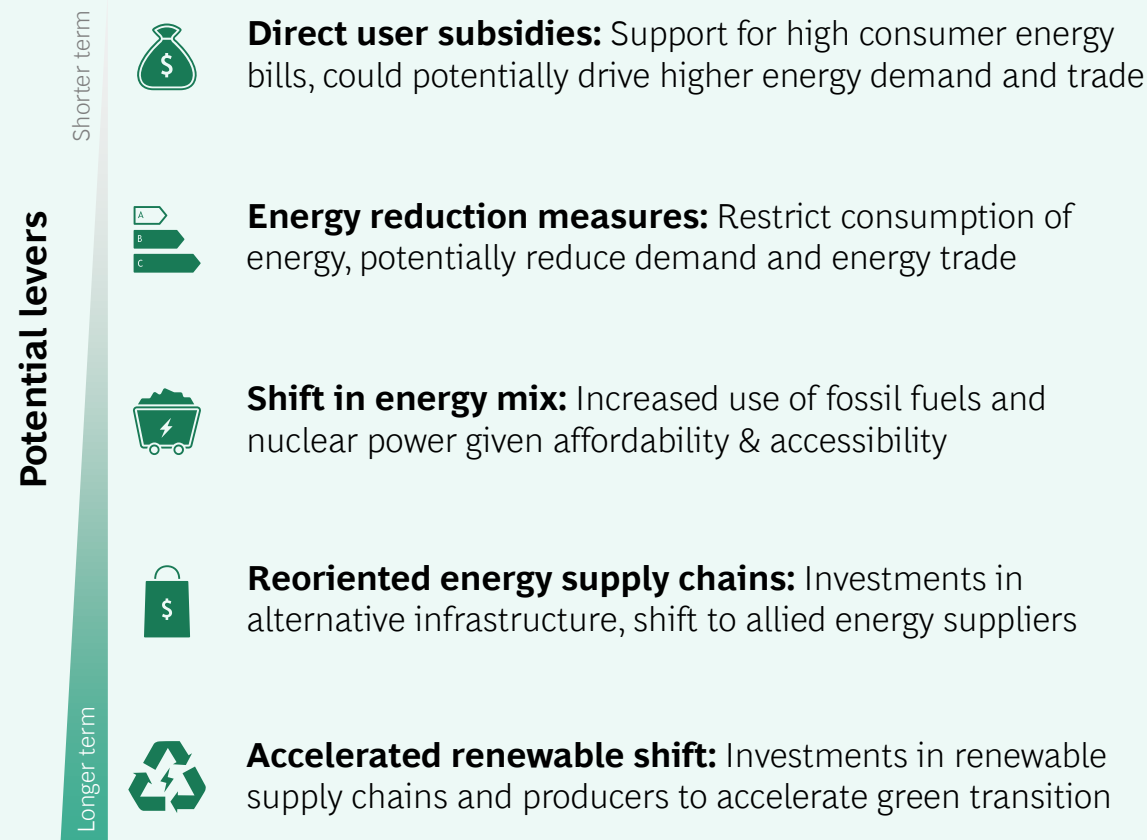
Natural gas TTF, € per MWh



Key drivers of tight energy market:

- **Supply:** Sanctions on Russian energy, OPEC+ cuts
- **Demand:** Impending winter demand

Multiple policy levers in response to Russian energy trade fall-out, with varied trade impact



Tight markets continue to drive high EU energy costs, economic ripple effects

High energy prices
expected to continue...

Restricted supply from
sanctions on Russian energy
and OPEC+ production cuts...

...the impact of **impending**
winter demand...

...and **limited alternative**
supply beyond gas storage
to meet EU energy demand

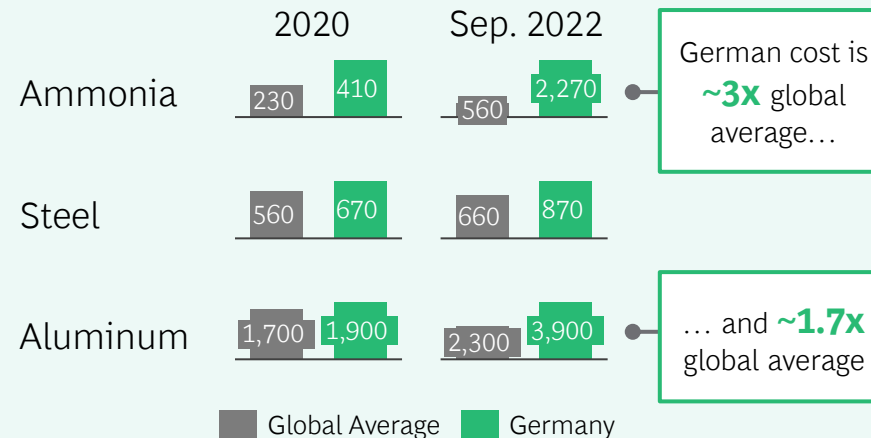
**...reducing competitiveness of energy
intensive industrial production in Europe...**



**Case example: Germany production costs
for industrial goods uncompetitive**

Largest industrial producer within EU
(~27% as of 2021)

Production costs for energy-intensive industrial goods, €/t



**...with long term
economic impacts**



Industrial slowdown from
Europe energy crunch could
**risk long-term damage to
future growth**



Some companies are
redirecting industrial
investment to **more energy-
secure locales**



Consumer wallets
constrained; **decline in
consumer spending could
further slow economic
growth**

Many levers can support phase-out; longer-term ones likely to impact trade

Shorter term policies manage shocks as they occur, mixed trade impact...

...longer-term structural changes support phase-out of Russian energy, could significantly alter trade routes

	 Direct user subsidies	 Energy reduction	 Shift in energy mix	 Reoriented energy supply chains	 Accelerated renewable shift
Policy Intent	Reduce energy costs paid by consumers	Reduce aggregate energy usage	Improve energy accessibility via existing facilities	Improve energy security, accessibility with new infrastructure	Improve energy security, accessibility via sustainable energy
Potential trade impact on EU	<i>Minimal:</i> Increase purchases along existing energy trade networks	<i>Minimal:</i> Decrease purchases along existing energy trade networks	<i>Large:</i> Decreased trade with Russia , replaced with existing sources of coal, nuclear, etc.	<i>Large:</i> "Friend-shoring" & shift in energy imports from friendly countries, high strain on global LNG supplies	<i>Large:</i> Shift from focus on hydrocarbon imports to renewable energy build (e.g., materials, resources)
Examples	 Policies to cap portion of payments for home heating	 Voluntary EU goal of a 15% reduction in energy usage	 Germany extending operating life of coal and nuclear plants	 Poland, Bulgaria using LNG imports from neighboring countries	 REPowerEU efforts to accelerate green transition

At any stage in phase-out, need to ensure sufficient energy flow among countries

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➤ Implications for leaders

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Implications for leaders as Future of Trade continues to evolve under geopolitical tensions and dynamics



Shorter Term

Understand key value chain risks to better respond

E.g., *What* key commodities impact operations, *where* biz-ops take place, and *who* are key/alternative suppliers

Prioritize no-regrets moves to bolster supply chain resilience

E.g., Build up buffer inventory of at-risk key commodities, pre-qualify alternative suppliers

Begin contingency planning for any at-risk key commodities identified in value chains

E.g., Fund R&D for alternatives of rare minerals, develop supplier relationships across multiple continents



Longer Term

Embed scenarios planning into capital allocation and strategic planning processes

E.g., Test against range of scenarios incl. trade, geopolitics and pandemic impact to build contingency plans

Leverage scenario plans to develop a long-term supply chain resilience plan that best fits strategy

E.g., Utilizing more regionally-based or diversified sourcing given geopolitical tensions in key trade corridors

Build control tower capabilities to gain visibility of emerging disruptions or external shocks

E.g., Put in place people and systems with ability to rapidly detect shocks & respond and adjust quickly

Teams across BCG are actively monitoring impact

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Global economic impact of the war in Ukraine

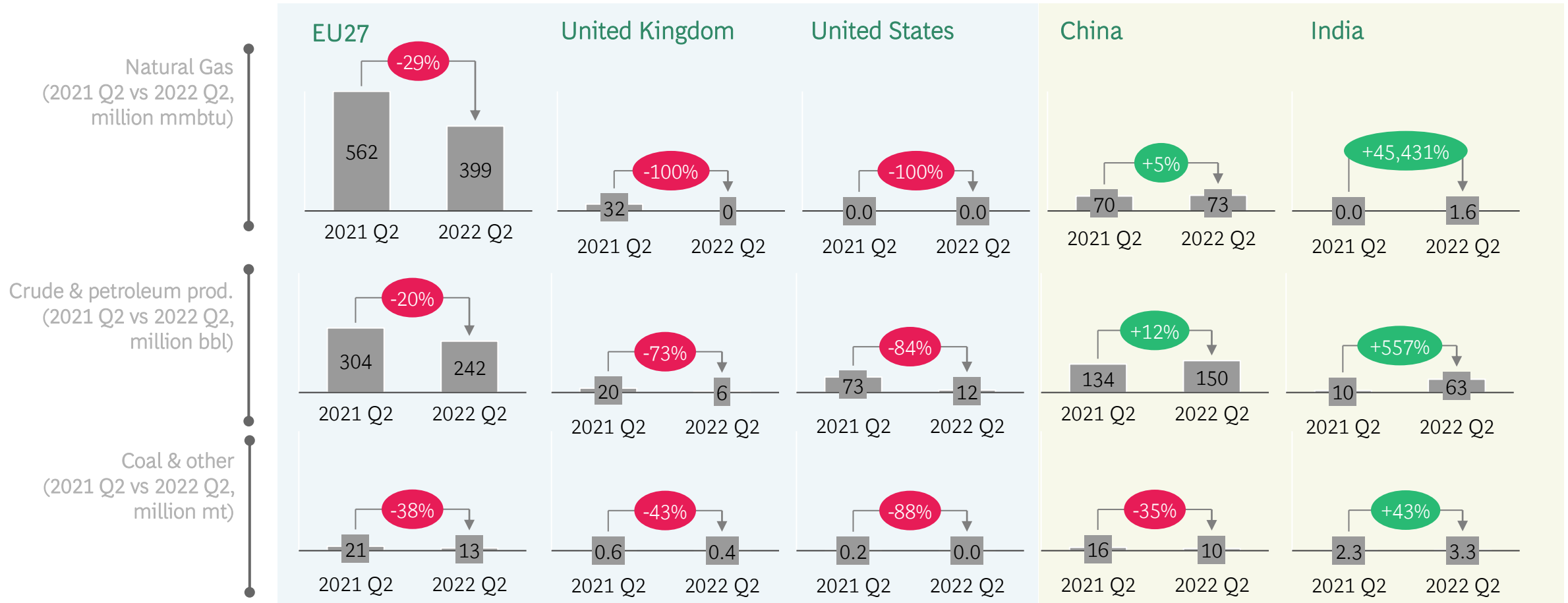
Perspective on Future of Trade

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➤ Appendix

Russian Energy | EU, UK, US decreasing while China & India picking up

Hydrocarbons total trade by estimate volumes¹ and major trade partners



1. Estimate volumes calculated by quarterly average commodity prices reported from World Bank; Note: Hydrocarbons based on HS chapter 27
Source: World Bank, IHS Markit; BCG analysis

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