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Trade Conflicts, Technological Change and the Future of World Trade

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Roadmap of the talk…

- Quick update on global trade developments
- Reminder of drivers of trade growth and trade's contribution to growth
- Some GVC developments – particularly with respect to Central and Eastern Europe
- Some basic numbers and rising uncertainty
- WTO Global Trade Model baseline development
- Trade policy scenarios
- China 2030 rebalancing
- Concluding remarks

Real time indicator…slower trade growth..

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World Trade Outlook Indicator

mardi 19 février 2019

World Trade Outlook Indicator 96.3

(Index, trend = 100)

Drivers of trade

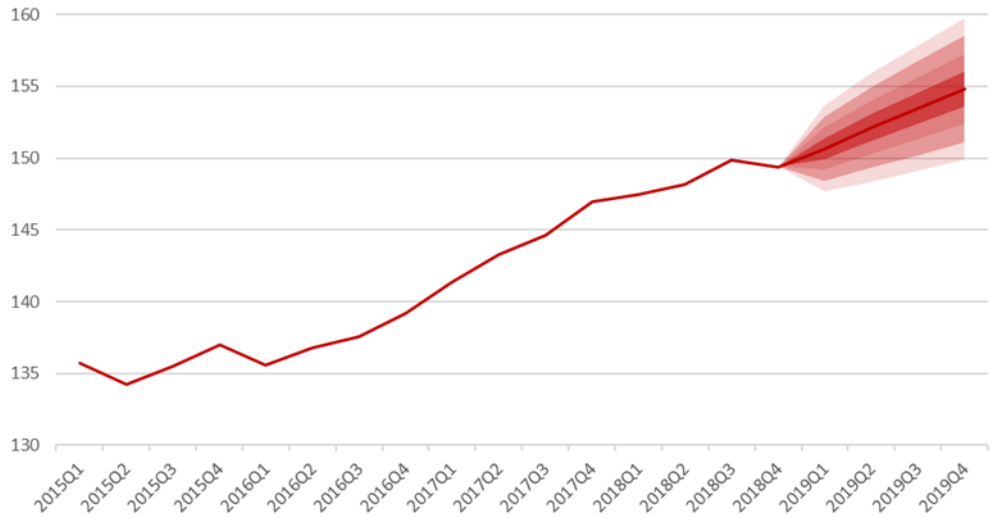
	Level of Index	Direction of change
Merchandise trade volume (Q3)	101.9	↑
Export orders	95.3	↓
International air freight (IATA)	96.8	↓
Container port throughput	100.3	→
Automobile production and sales	92.5	↓
Electronic components	88.7	↓
Agricultural raw materials	94.3	↓

WTOI points to slower trade growth into first quarter of 2019

WTO Trade Forecast Spring 2019 -

- World trade will continue to face strong headwinds in 2019 and 2020 after growing more slowly than expected in 2018 amid rising trade tensions and increased economic uncertainty.
- WTO economists expect merchandise trade volume growth to fall to 2.6% in 2019 — down from 3.0% in 2018 (our estimate range for 2018 in April 2018 was 3.1 – 5.5%) . Trade growth could then rebound to 3.0% in 2020, however this is dependent on an easing of trade tensions.
- **Trade-related indicators have turned negative**, signalling continued trade weakness in the first half of 2019.
- **Trade tensions still pose the greatest risk to the forecast**, but a relaxation could provide some upside potential.
- Recent academic research examining trade flows has results largely confirming IO simulation assessments of the current trade conflict (Fajgelbaun, Goldberg, Kennedy, Khandelwal (2019) and Amiti, Redding, Weinstein (2019))

- **Weak import demand in Europe and Asia dampened global trade volume growth in 2018** due to the large share of these regions in world trade.
- **The value of merchandise trade was up 10% to US$ 19.48 trillion in 2018,** partly due to higher energy prices.
- **The value of commercial services trade rose 8% to $5.80 trillion in 2018**, driven by strong import growth in Asia.
- Volume of world merchandise trade, 2015Q1-2019Q4 Seasonally-adjusted volume index, 2005=100



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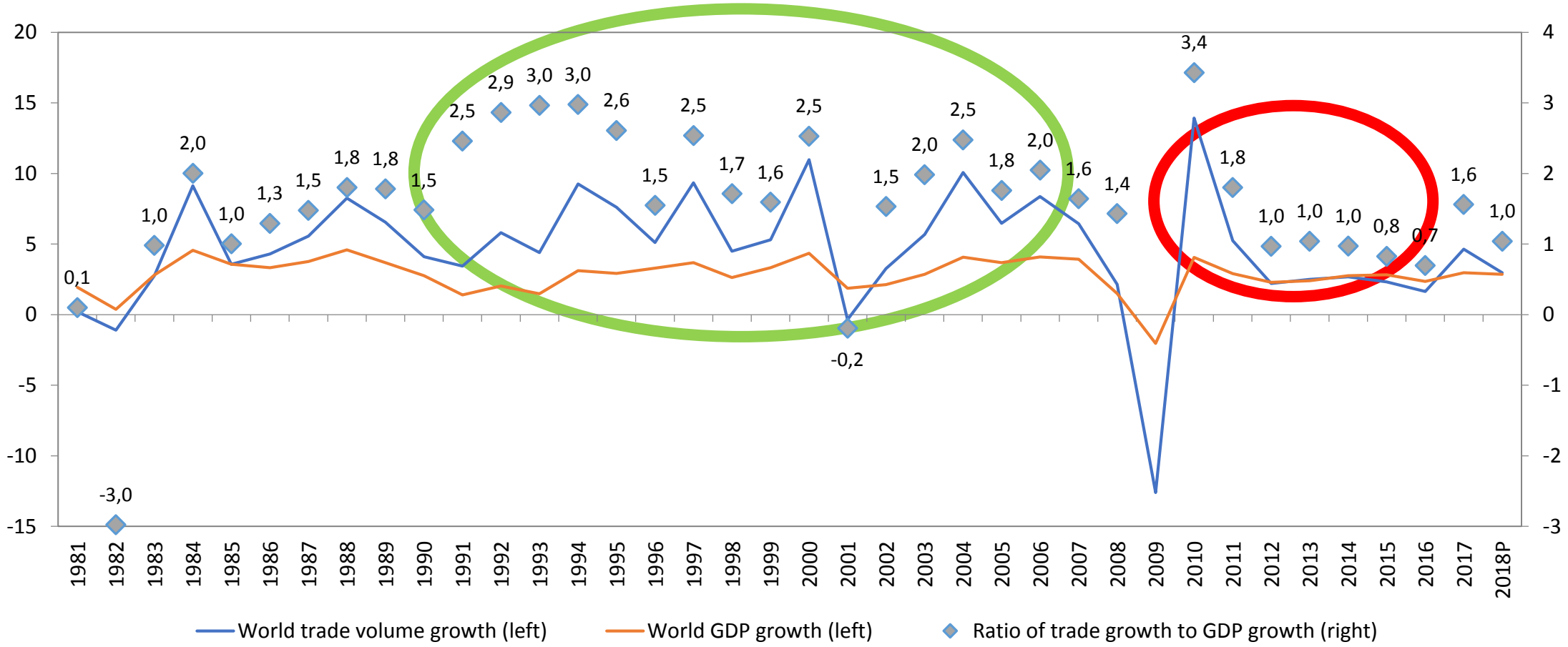
Ratio: merchandise trade volume growth to real GDP growth, world, 1981-2017



Source: WTO (2017), % change and ratio.

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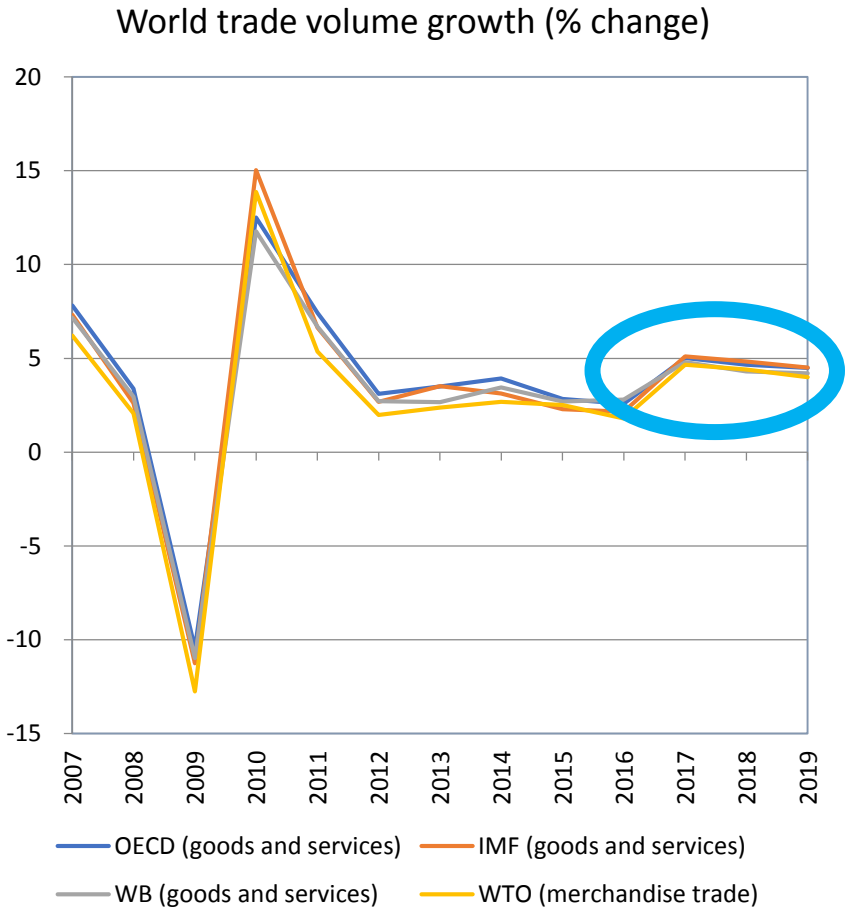
There is broad agreement across international organizations on the short term outlook for world trade



Sources: WTO International Trade Statistics, IMF World Economic Outlook database, OECD Economic Outlook, World Bank Global Economic Prospects.

- Trade volume data are not directly comparable across organizations due to different methodologies (e.g. merchandise vs. goods and services.)
- Despite these differences, there is broad agreement on the short term outlook for trade.
- WTO expects merchandise trade volume growth to moderate from 4.7% in 2017 to 3.0% in 2018 and 2.6% in 2019 (April 2019 press release).
- This is return to the weak trade of 2011-2016 when trade grew 2.8% on average, well below the 4.8% average since 1990.
- ***Rising trade tensions and increased use of trade measures make forecasts for trade and output less certain. Downside risks are substantial.***

Trade and Growth – a lot has happened in the past 35 years

- Integration has slowed compared to rapid pace of “long 1990’s”.
- Multilateral, regional and unilateral liberalization in this period exceptional. Rapid trade growth and integration.
- But best measures of trade growth suggest openness policies accounted for roughly 25% of that growth. Most growth was due to fundamental and reasonably synchronized macro growth, falling trade costs, technology.
- Counts of “protectionist” measures have not yet translated into significant “measured rise” in trade costs.
- Trade growth driven by fundamental macro factors, uncertainty?
- But recovered in 2017, despite all the rhetoric. But 2018 slowed and 2019 shows very worrying signs.
- 2018 saw a number of major trade policy actions between WTO members – they are now “showing up’ in the data.
- What might be the short/medium term impact?
  - As seen above short term not likely overly dramatic on macro indicators unless accompanied by other policy. Lessons from Great Depression and Great Recession.
  - A lot of Sector and Country/Trade shifting.
  - Longer term? Some large countries could slowly fall behind global technology frontier.

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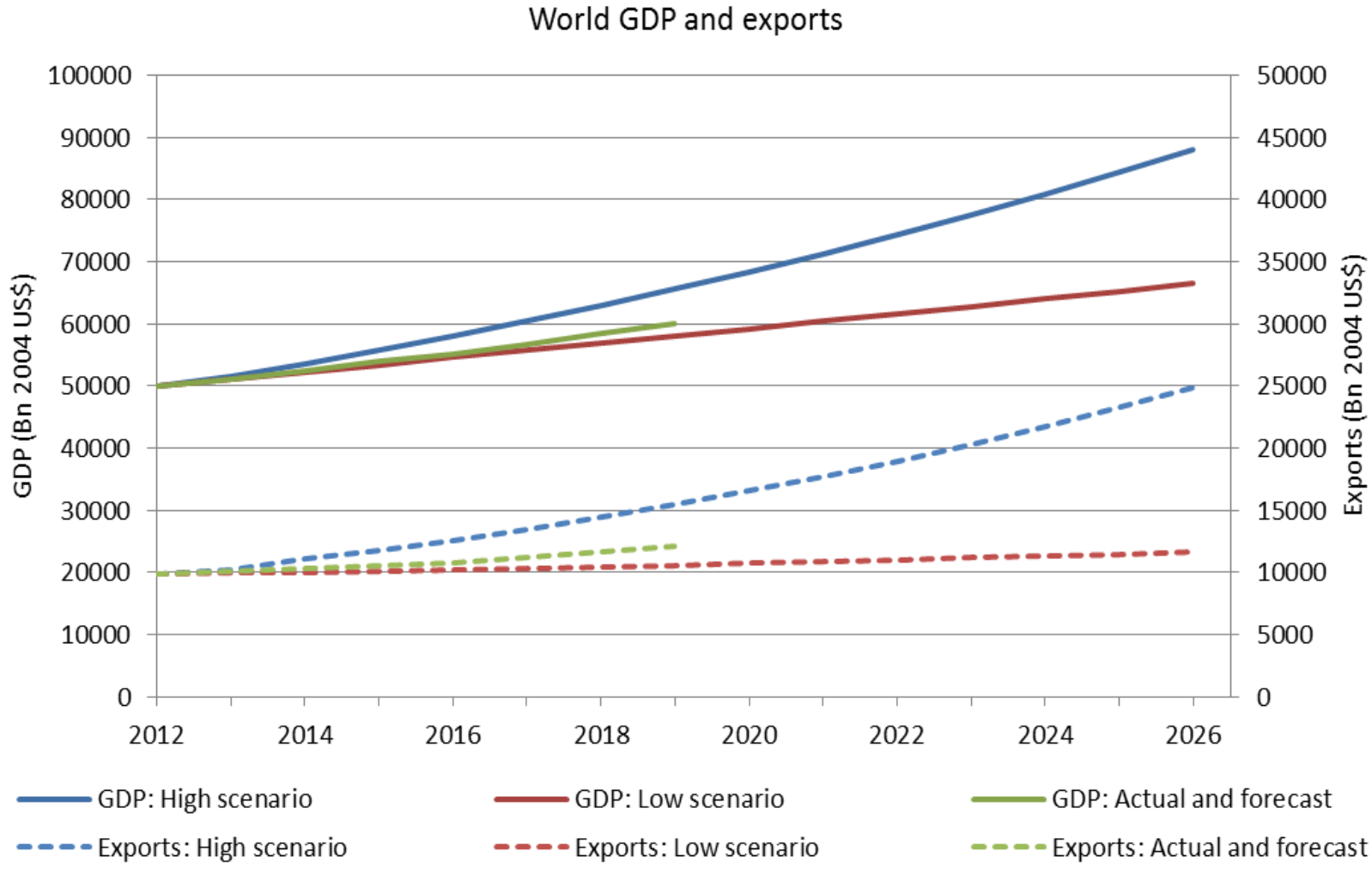
Projected GDP and exports 2012-26



Source: Fontagné, Fouré and Keck (2017), WTO (2016) and WTO (2013), in billion constant 2004 US$.

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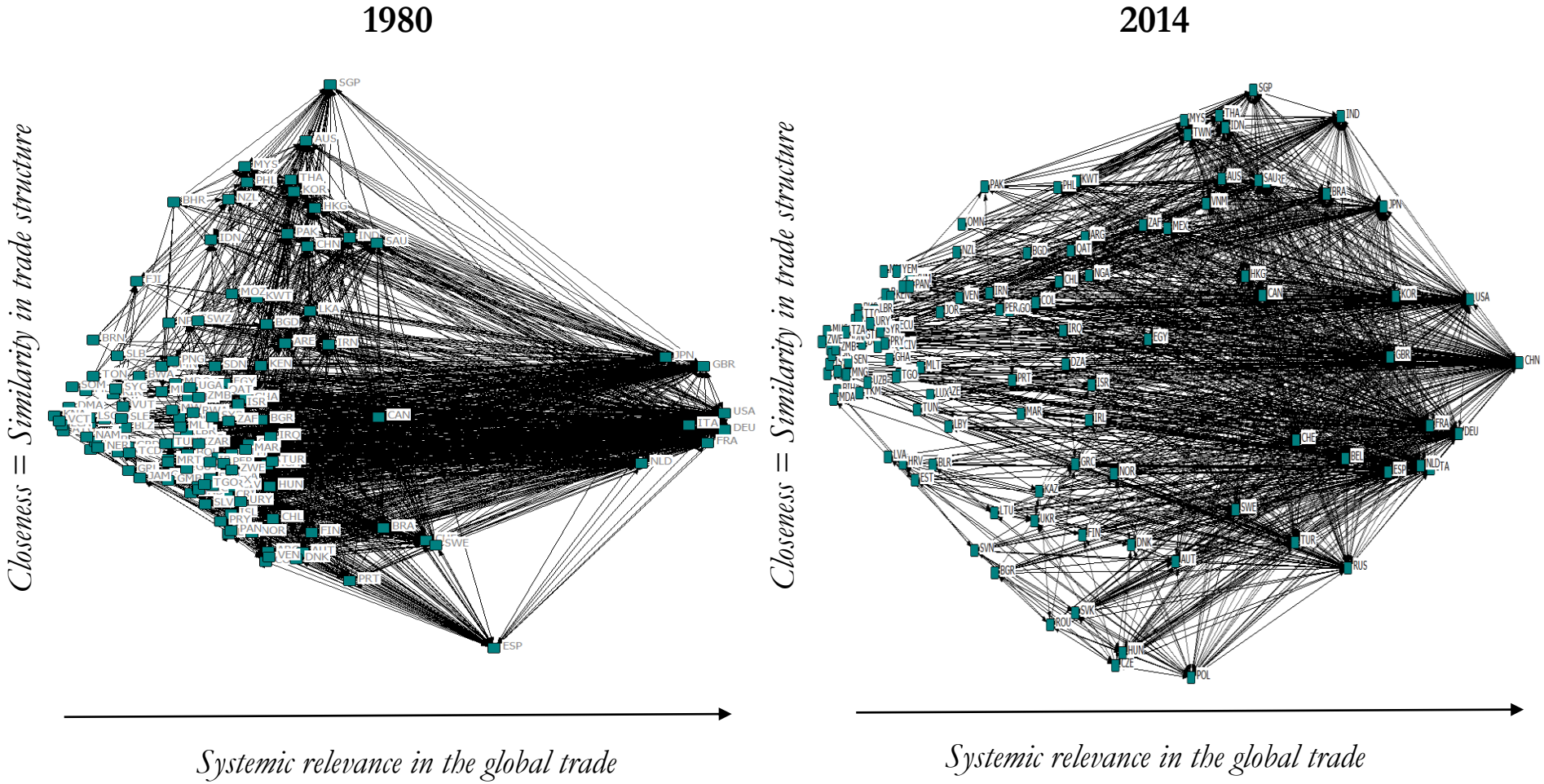
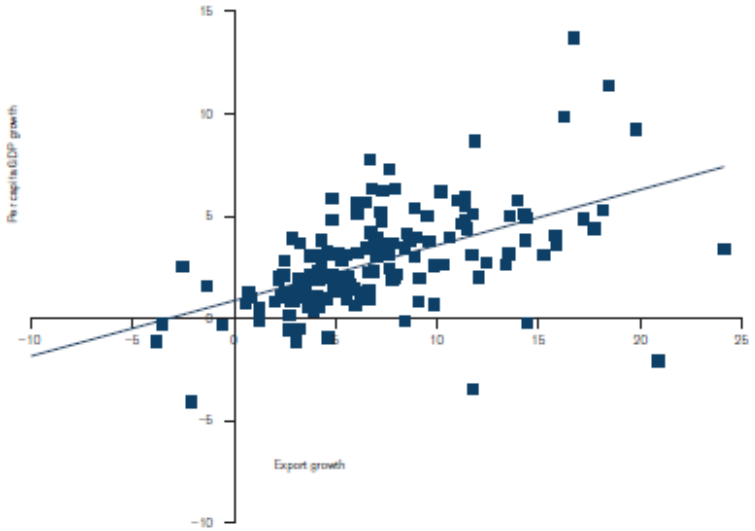
Global trade integration has evolved significantly since the 1980's – Increased Diversification



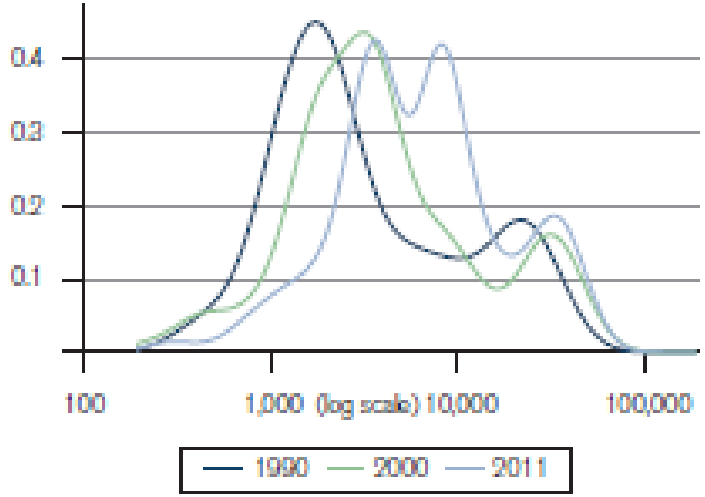
Source: Calculations are based on data from the Direction of Trade Statistics (DOTS).

The potential cost? Trade and GDP growth

- GDP growth has moved hand in hand with integration in the world economy.
- Although this relationship does not show causation, we know trade increases growth through various channels.



- Kernel density of real GDP at PPP weighted by population shows evidence of convergence.



Source: WTO (2014)

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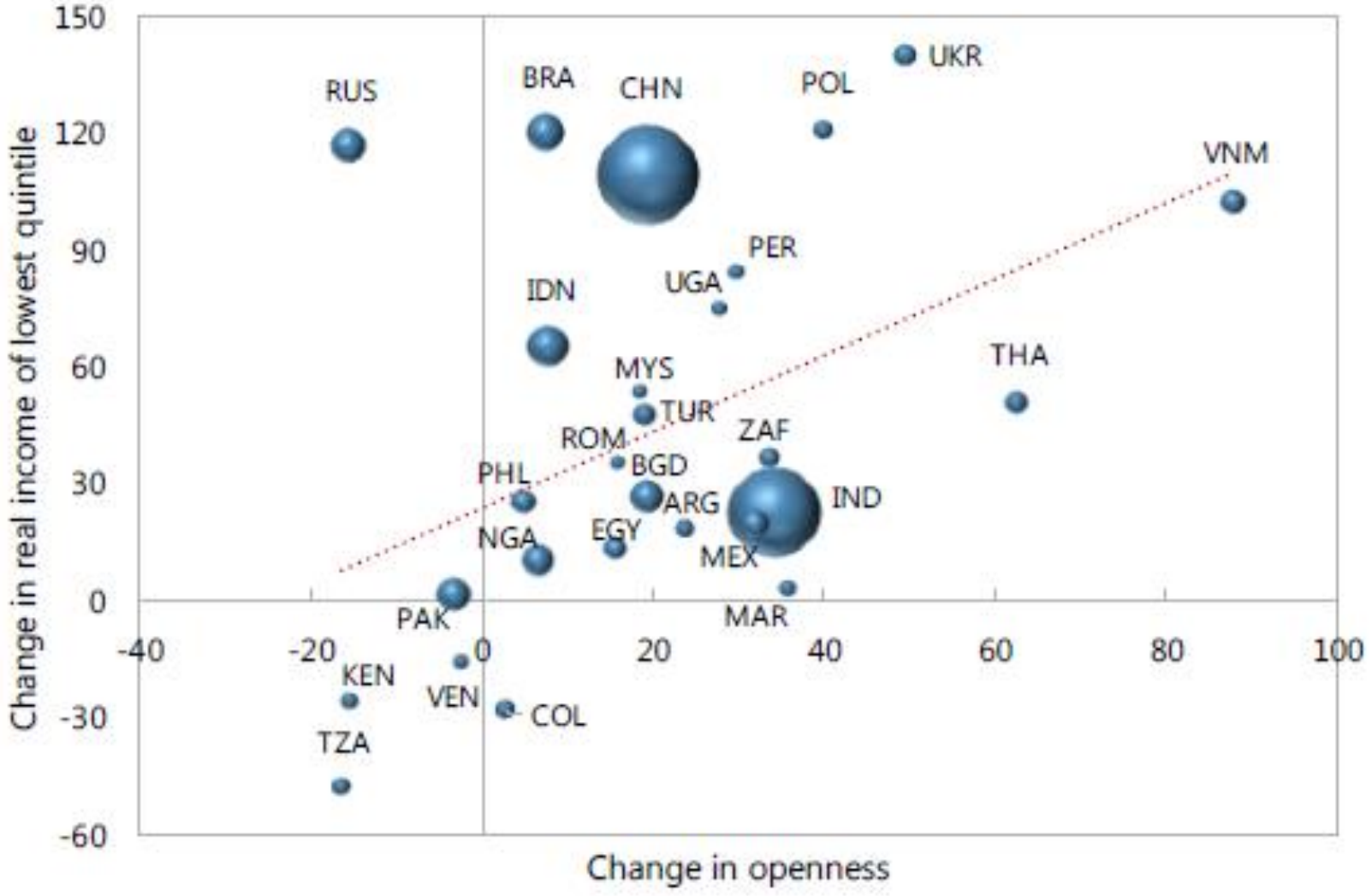
Trade and poverty – whither the SDGs? Can emerging market countries power future reductions?



Source: IMF, WB and WTO (2017), based on Lakner-Milanovic (2013), World Panel Income Distribution dataset and World Development Indicators.

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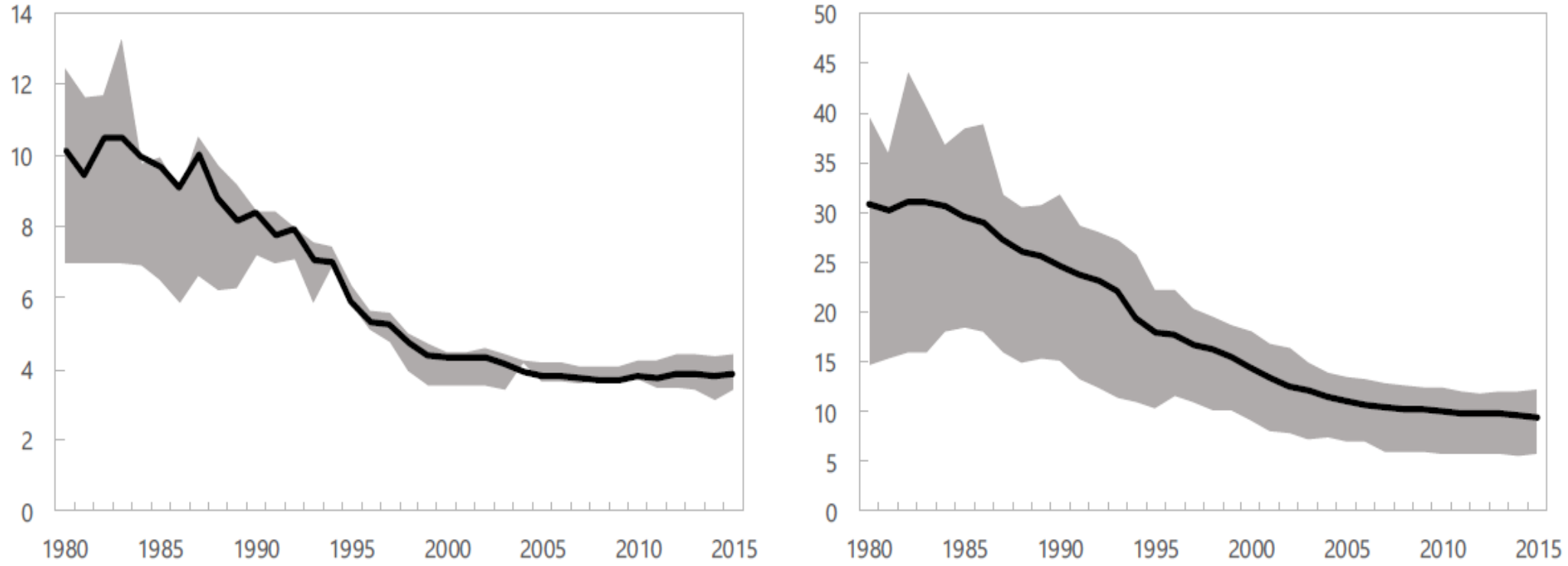
Tariffs have come down but reform stalled since the early 2000s

Tariffs in advanced economies (left) and emerging market and developing economies (right)



Sources: WTO Tariff Download Facility, IMF (2016a).

Some current in-process estimates of trade costs following Head & Reiss (2001).

$$ave_{ijs} = \tau_{ijs} - 1 = \left(\frac{X_{ijs}X_{jis}}{X_{iis}X_{jjs}}\right)^{\frac{1}{2(\sigma-1)}} - 1$$

Table 1 Ad valorem trade costs using Head and Ries methodology and GTAP10 data

Sectors	Average	Developed-developed	Devevelopped-developing	Developing-developing
Broad sectors				
Agriculture	163%	125%	178%	220%
Manufacturing	104%	89%	112%	140%
Natural resources	148%	138%	153%	161%
Services	202%	182%	229%	271%
Detailed services sectors				
Air transport	100%	84%	121%	166%
Business services nec	172%	163%	187%	215%
Communication	202%	178%	237%	298%
Construction	290%	254%	321%	427%
Electricity	202%	152%	314%	260%
Financial services nec	160%	139%	238%	327%
Gas manufacture, distribution	251%	224%	260%	314%
Insurance	156%	137%	189%	195%
PubAdmin/Defence/Health/Educ	275%	251%	307%	394%
Recreation and other services	201%	181%	230%	285%
Sea transport	70%	58%	83%	113%
Trade	228%	217%	236%	309%
Transport nec	174%	153%	195%	240%
Water	322%	294%	349%	409%

Table 2 Contribution to explained variation of trade costs using Shapley decomposition

Sector	Gravity	Credit-contract	Commlanguan	Logseff	Customs procs	Bband subscr	GDP per capita	Unexplained
Broad sectors								
Agriculture	18%	4%	1%	14%	1%	7%	5%	51%
Manufacturing	22%	4%	2%	18%	2%	8%	6%	39%
Natural resources	13%	1%	0%	5%	0%	2%	3%	75%
Services	11%	7%	1%	14%	2%	7%	9%	49%
Detailed services sectors								
Air transport	5%	8%	1%	10%	2%	9%	10%	56%
Business services nec	6%	2%	0%	12%	1%	5%	10%	65%
Communication	5%	4%	0%	8%	2%	6%	7%	69%
Construction	10%	5%	2%	5%	1%	5%	6%	66%
Electricity	12%	5%	0%	0%	2%	8%	1%	71%
Financial services nec	6%	7%	0%	8%	1%	9%	12%	58%
Gas man, distribution	8%	6%	0%	3%	1%	13%	9%	60%
Insurance	5%	4%	0%	10%	0%	4%	8%	68%
PAdmin/Def/Health/Educ	3%	3%	1%	8%	0%	1%	5%	79%
Recreation and other services	4%	8%	0%	12%	1%	11%	8%	57%
Sea transport	9%	6%	1%	12%	1%	8%	10%	52%
Trade	5%	8%	0%	9%	1%	14%	14%	49%
Transport nec	10%	12%	1%	8%	1%	8%	7%	54%
Water	4%	10%	0%	5%	1%	11%	9%	60%

CEE countries have integrated heavily into European Supply Chains.

Figure 1.6 Forward and backward (simple/complex) GVC participation, share of intra- and inter-regional GVC activities in manufacturing, (%), 2000 and 2017, Asia

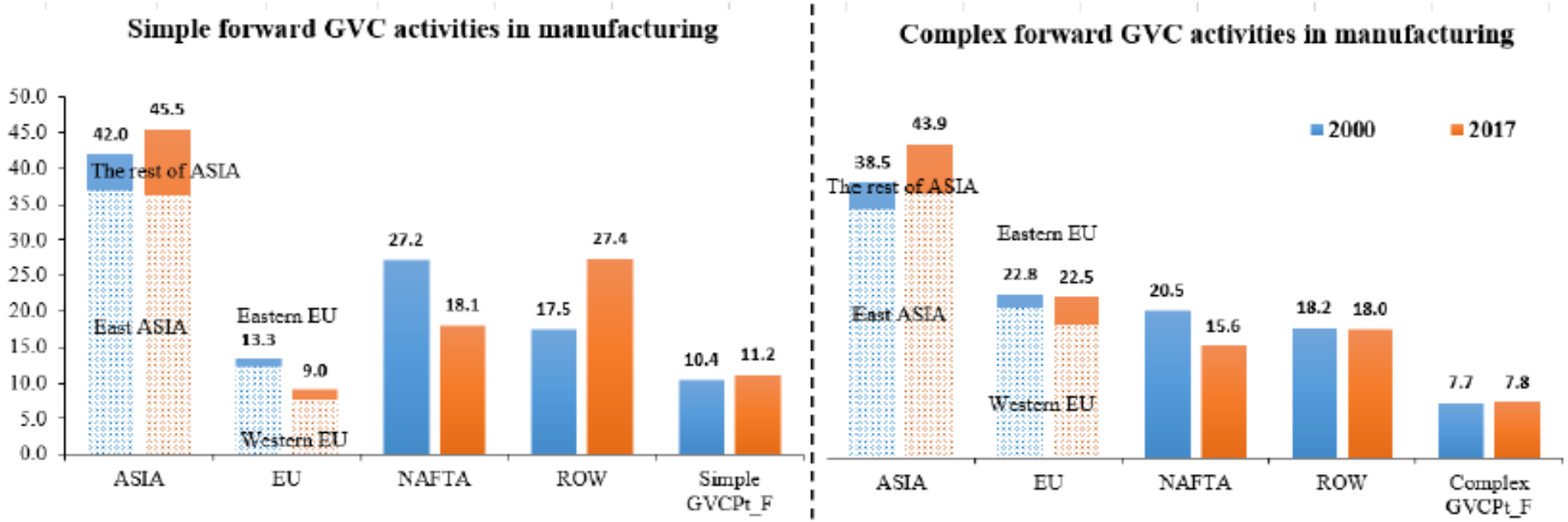
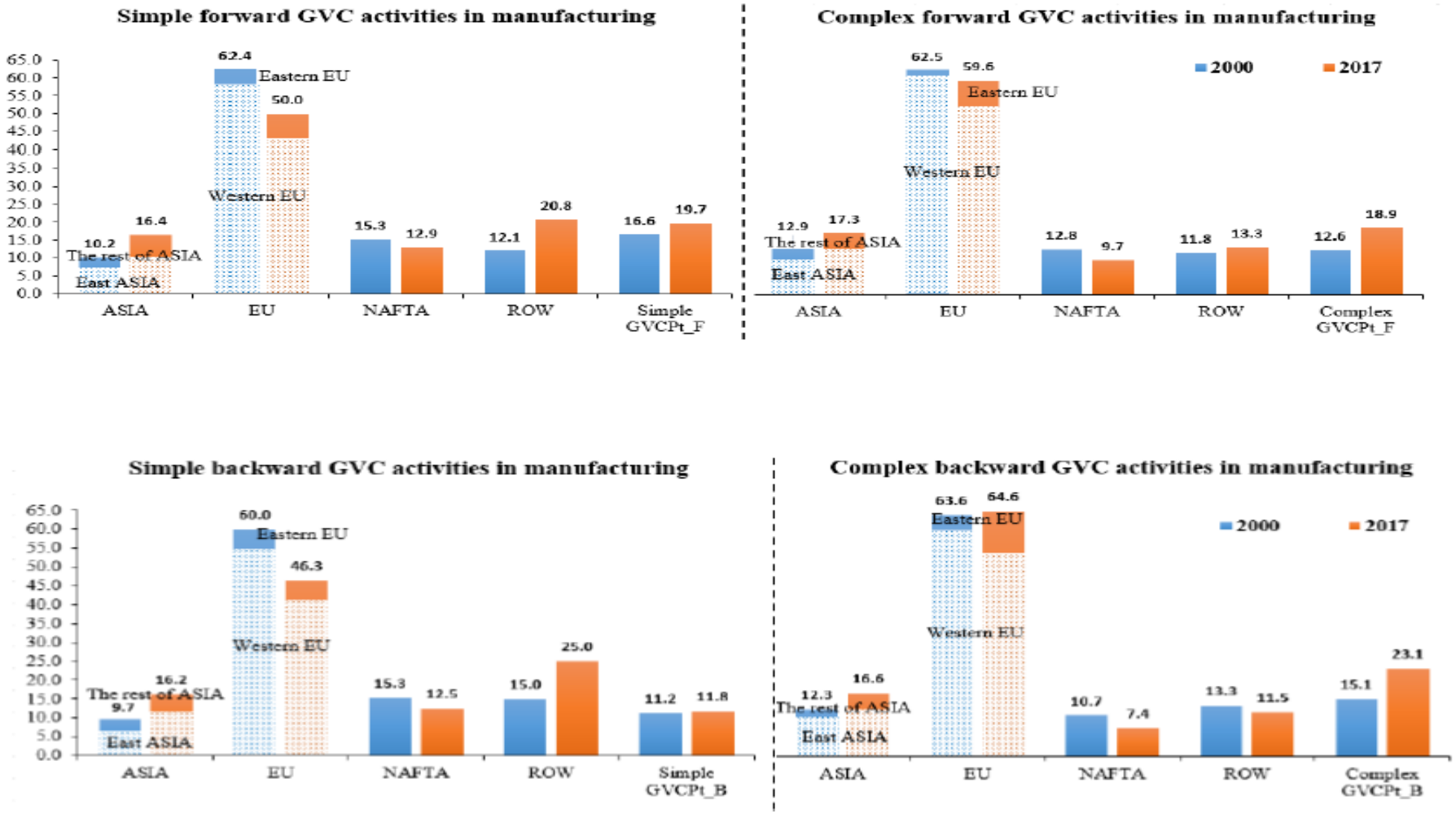


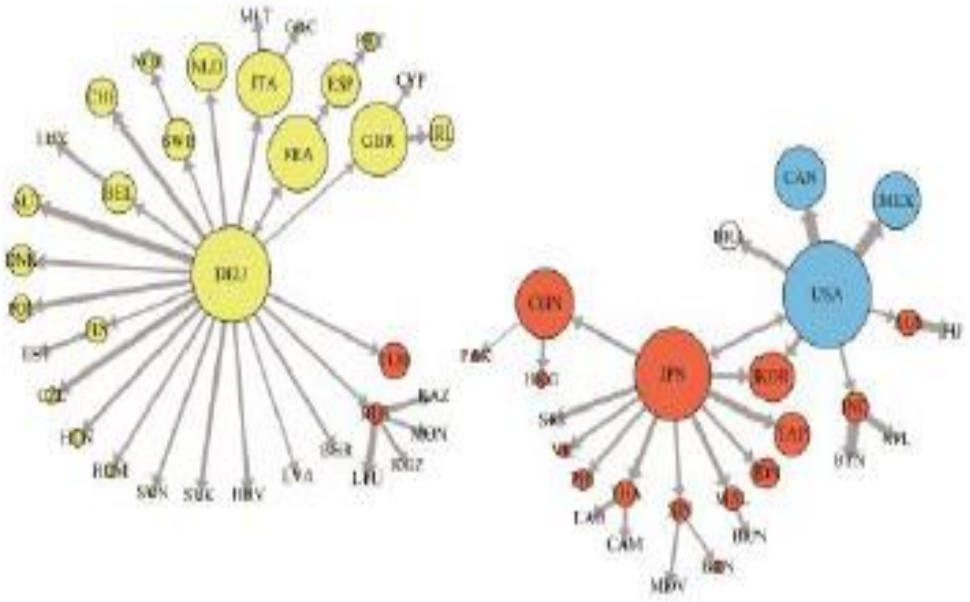
Figure 1.7 Forward and backward (simple/complex) GVC participation, share of intra- and inter-regional GVC activities in manufacturing, (%), 2000 and 2017, Europe



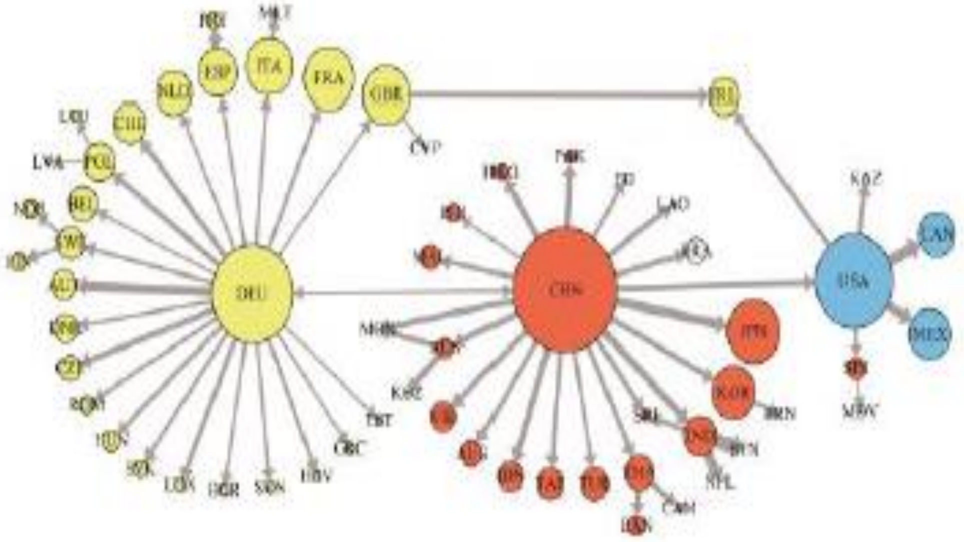
Note： the last set of bars represent the overall GVC participation ratios for Europe.

Source： the UIBE GVC indexes derived from the ADB 2018 ICIO tables

Traditional trade networks (all goods and services)

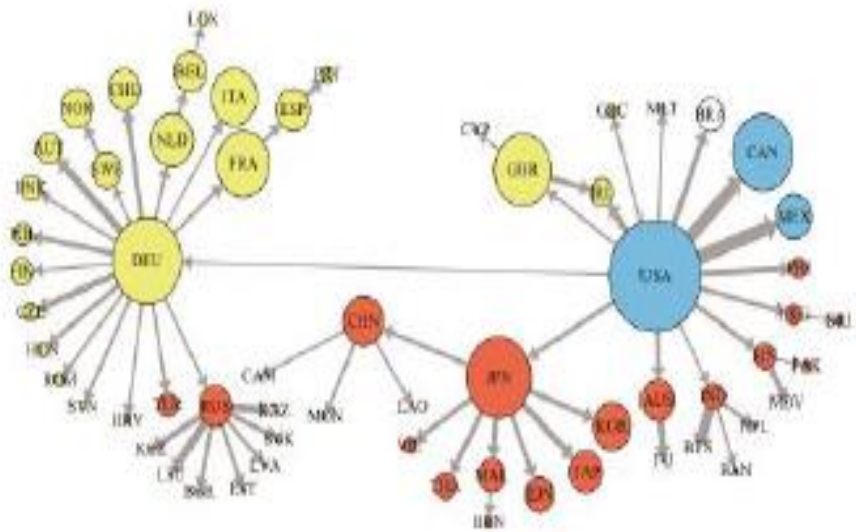


2000

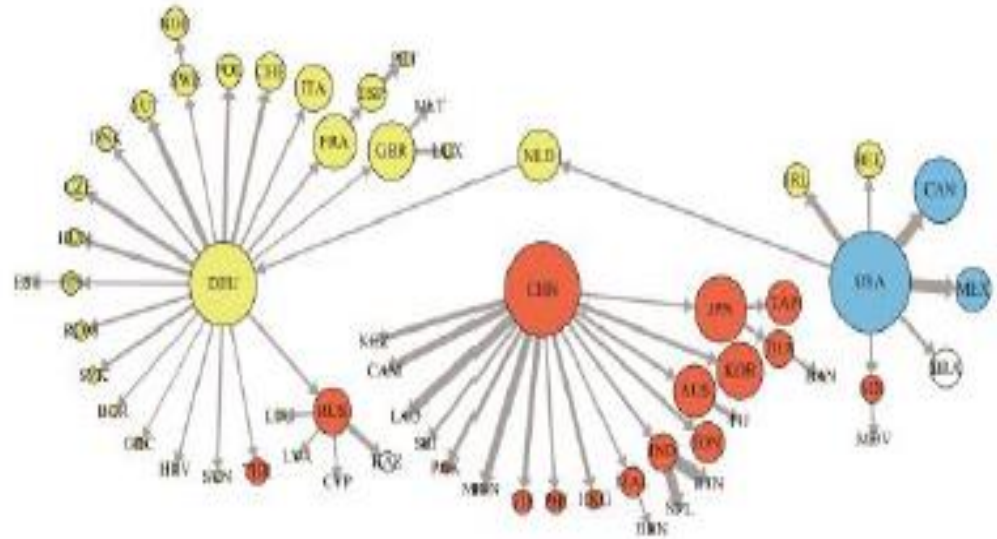


2017

Simple GVC trade networks (all goods and services)

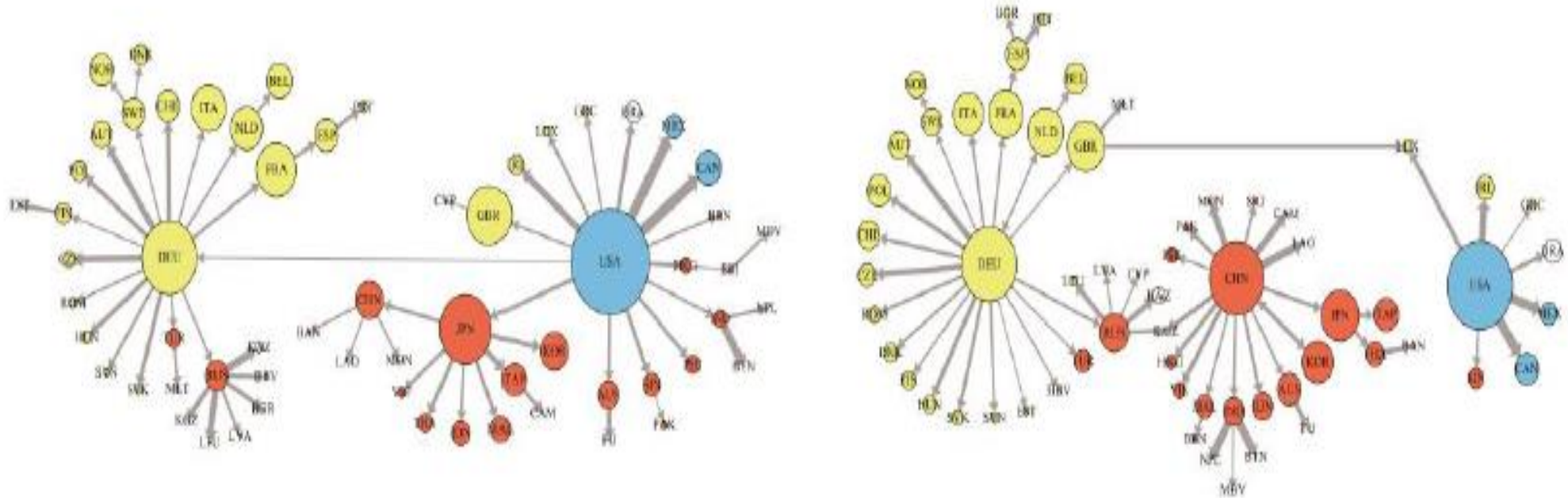


2000



2017

Complex GVC trade networks (all goods and services)



2000 2017

Some basic trade facts…

- Global trade 2017 $22 Trillion - $17 goods and $5 services
- US-China Trade 3%
- Under current administration average US tariff increased from about 1.4% to 3.2% over 2018.
- Global automobile trade 8%
- Total trade under WTO MFN – 75%, of which 2/3 is MFN = 0, trade under preferential tariffs is 25%.

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Further escalation in trade tensions could affect confidence and the global economic significantly

- Simulations indicate that a combination of higher import tariffs by the United States and retaliatory measures by its trading partners **could take a toll on growth, particularly if they were to reduce confidence and thus investment**

- A sustained escalation of trade actions would also **risk undermining the multilateral WTO framework**. The consequences would be dire and would disrupt global supply chains, severely reduce the chances of further reduction in global trade barriers, and hurt consumers—especially low-income households—by raising the price of imported goods

- **Excessive global imbalances would also remain unaddressed**

- **KEEP IN MIND SIMULATIONS ARE NOT FORECASTS/PREDICTIONS.**
  - **They illustrate the likely direct economic effects of specific trade policy measures.**
  - **They can be overwhelmed by other economic forces affecting trade – see 3rd bullet on slide 6.**

Uncertainty in the global economy….

- BREXIT?
  - A hard Brexit will mean a border with some of Britain's largest trading partners. The thickness of that border will vary from product to product. But regardless of the tariff, the introduction of a border will mean delays and that will mean higher cost
  - According to the UK government's own analysis, a no-deal or hard Brexit would shave 7.6% off Britain's GDP based on the status quo. The government's November report estimates that average trade costs would rise by 13% (3% in higher tariffs, 10% in NTBs). For agriculture the cost would be 35% higher (20% tariffs, 15% NTBs). For services, trade costs would rise by 12%. There would be a 37% decline in trade volume with the EU and an overall trade volume decline of 15%.
  - Exactly how all of that would play out will depend on the sort of trading arrangement that is agreed between Britain and the EU.
- US-China trade tensions…
  - WTO estimates US -.11% of GDP, China -.20% of GDP – but real GDP growth projection is for much higher numbers (2.7 and 7.2% per year respectively – probably too high)
  - Bigger effects come if INVESTMENT and CONSUMPTION affected by uncertainty.
- AUTO war? About three times as big a loss for US?
- Total breakdown in tariff co-operation? See scenarios below. GDP effect nearly same as GFC, trade effects bigger.
- Total breakdown in global trade co-operation? Not just tariffs, but all other rules? Growing role of services and data in trade…all of this would really set the global economy back quite a bit.

Some scenario simulations – Methodology: Model and baseline

- WTO Global Trade Model to project the impact of possible future trade policy events
- Recursive dynamic computable general equilibrium (CGE) model, suitable to calculate detailed effects at the country and sectoral level of trade policy measures
- Takes into account the intermediate production and trade linkages between sectors, capital accumulation, and international investment flows.
- GTAP10p2 baseline data from 2014 (aggregated to 18 regions, 15 sectors, 5 production factors) are projected to 2035 using:
    - UN projections on population and labor force growth
    - IMF projections on economic growth per capita until 2022
    - OECD SSP2 projections on economic growth per capita from 2023
    - Own WTO-calculations on various types of structural change
        - Differential productivity growth across sectors
        - Adjusting savings rates based on lifecycle determinants
        - Changing preferences of private households away from food and manufacturing towards services
        - Falling trade costs as a result of new digital technologies

Some hypothetical scenarios around trade conflict…remember illustrating certain economic forces at play – NOT A FORECAST, from Bekkers, forthcoming, Journal of Policy Modeling.

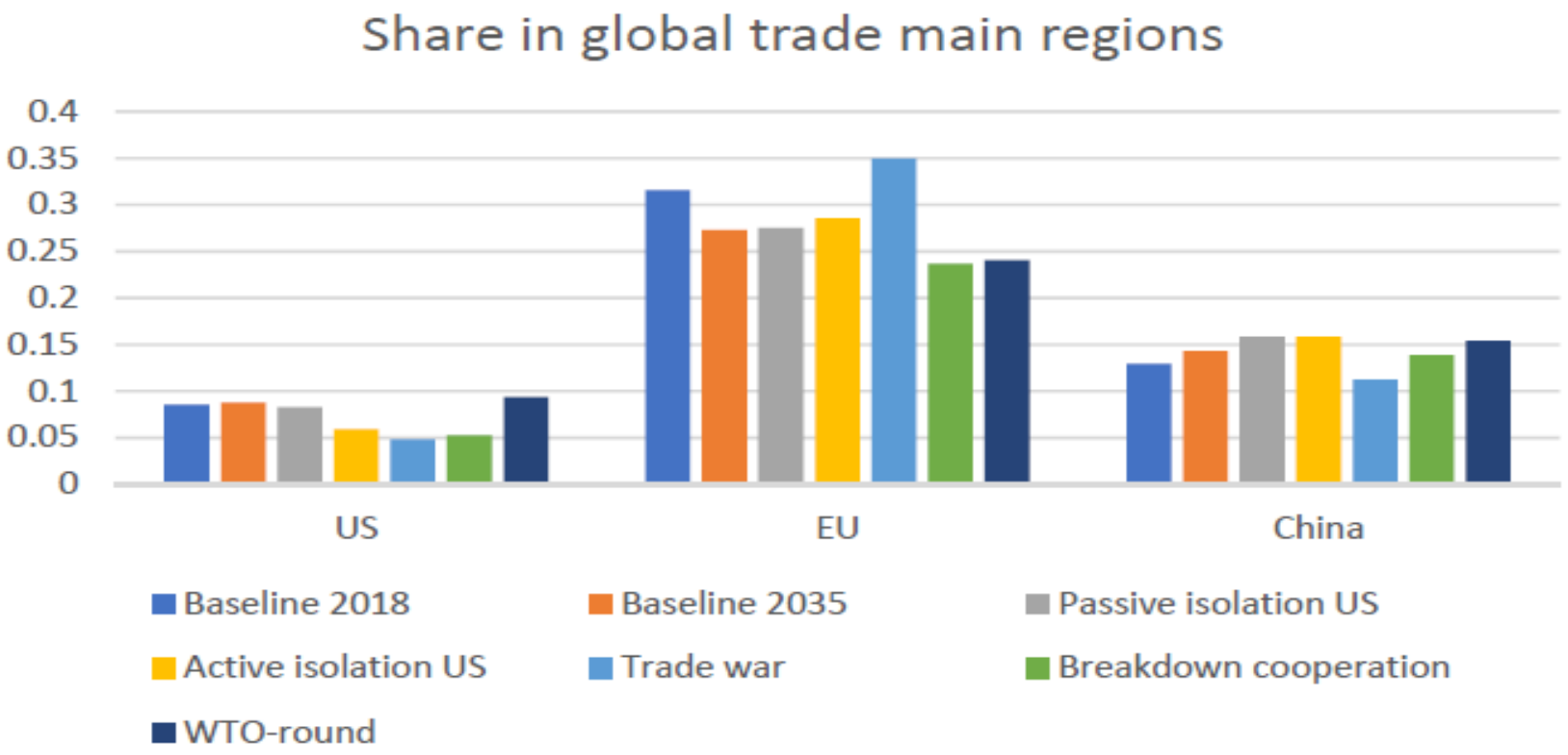
- Generate baseline of global economy for next 20 years approximately (until 2035), taking into account the potential impact of digital technologies on trade costs
- Construct five scenarios

1. Passive isolation of the US: other regions conclude (deep) free trade agreements (FTAs) expected to reduce the role of the US in global trade
2. Active isolation by the US: on top of scenario (1), the US raises import tariffs with trading partners responding
3. Global trade war: instead of signing new deep FTAs, the measures taken by the US spread to other countries. Tariffs increase globally between different regions
4. Breakdown of international trade cooperation (nationalism): on top of scenario (3), main deep FTAs such as the EU and ASEAN also break down
5. Comeback of multilateralism: conclusion of new round of negotiations within the WTO (unrelated to previous scenarios)

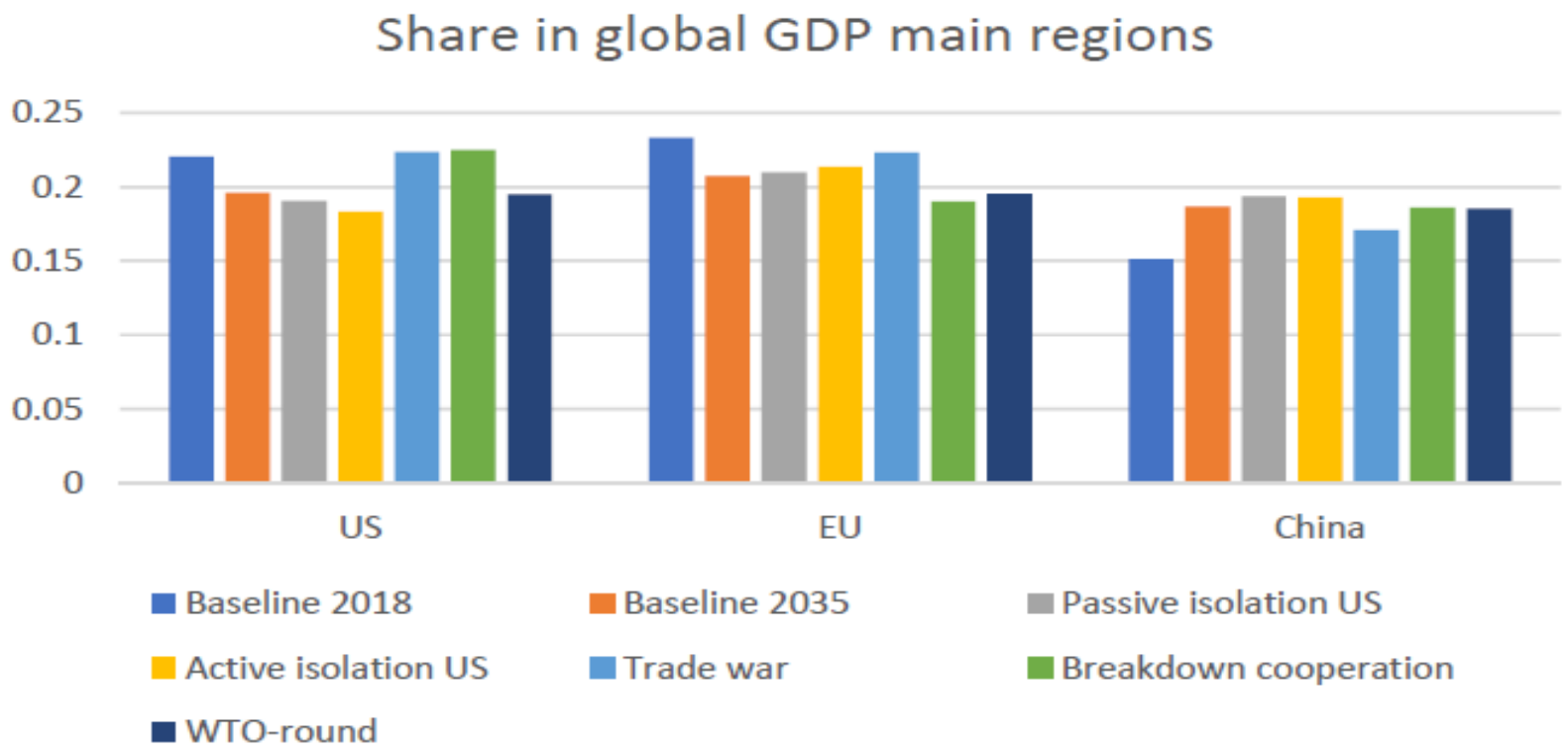
5 scenarios – all hypothetical

1. Passive isolation of the US: other regions conclude deep FTAs
   - Japan-EU, Japan-ASEAN, ASEAN-EU, China-EU, Mercosur-EU
   - Tariff liberalization and reduction in non-tariff barriers based on gravity estimates of the impact of deep FTAs in Egger et al. (2015, EP)
2. Active isolation of the US
   - On top of Scenario (1), the US raises tariffs by 25 pp on imports from China and 10 pp on other regions' imports. Other regions retaliate proportionally
3. Global trade war
   - All regions (except ASEAN and EU) raise import tariffs from the current cooperative to the non-cooperative level based on Nicita et al. (2018, JPE)
4. Breakdown of international trade cooperation
   - On top of Scenario (3), tariffs are also increased within EU and ASEAN
   - Non-tariff barriers rise based on deep FTA estimates in Egger et al. (2015) with separate estimate for effect of disappearance of the EU
5. Resurrection of multilateralism: conclusion of new WTO negotiation round
   - Full implementation of Trade Facilitation Agreement
   - Reduction agricultural and manufacturing tariffs, based on PIIE (2009)
   - Reduction non-tariff barriers services by 10%, based on PIIE (2009)

Simulated global trade impacts



Share in global GDP



Trade balance as share of GDP

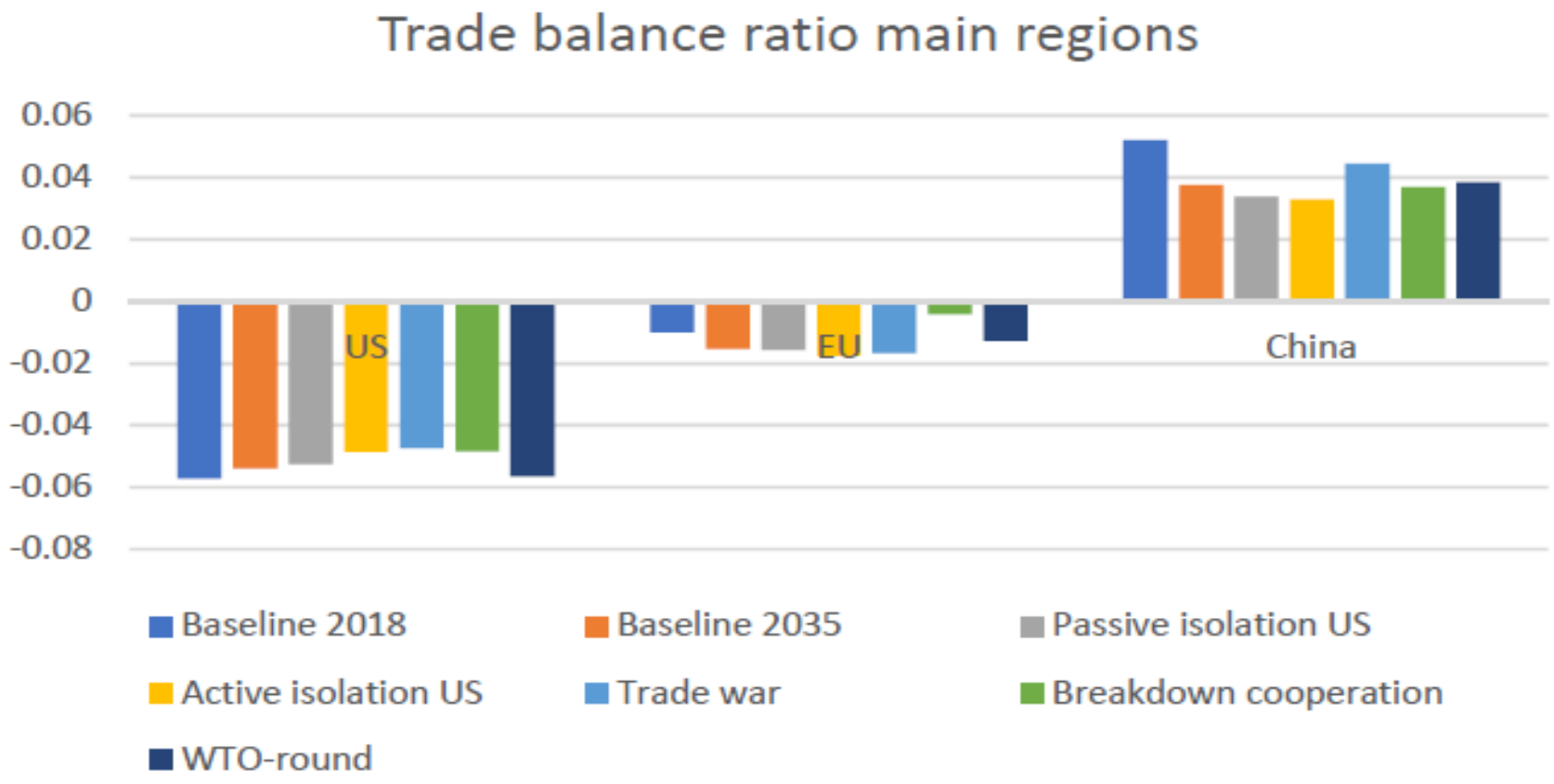


Illustration with “optimal” tariffs,

Nicita, Olarreaga and Silva 2018

TABLE A4—SCENARIOS 3: GLOBAL TRADE WAR

Regions	*Initial tariff*		*Average tariff increase*	
	As importer	*As exporter*	*As importer*	*As exporter*
ASEAN	2.71	3.19	12.92	29.50
CIS	6.67	1.10	5.53	16.77
Canada	0.92	1.18	20.38	43.29
China	3.67	4.43	27.75	31.07
EFTA	0.68	1.57	9.49	28.55
EU28	1.76	4.20	37.41	22.80
India	6.42	4.89	7.28	26.19
Japan	1.91	4.34	29.02	31.31
Korea	5.54	3.75	12.96	29.05
LAC	3.64	1.49	5.70	24.02
MENA	4.84	1.56	5.72	14.35
Mercosur	7.79	4.06	11.86	23.23
Mexico	1.08	0.59	5.08	50.53
Oceania	3.02	2.58	11.34	18.26
OtherAsia	3.17	2.87	18.58	30.11
RestofWorld	1.48	3.71	3.27	26.17
SSA	8.58	1.22	9.66	14.46
USA	1.22	2.94	57.56	21.22

Note: the table displays average trade weighted tariff increases in percentage points

Some driving elements of future trade…

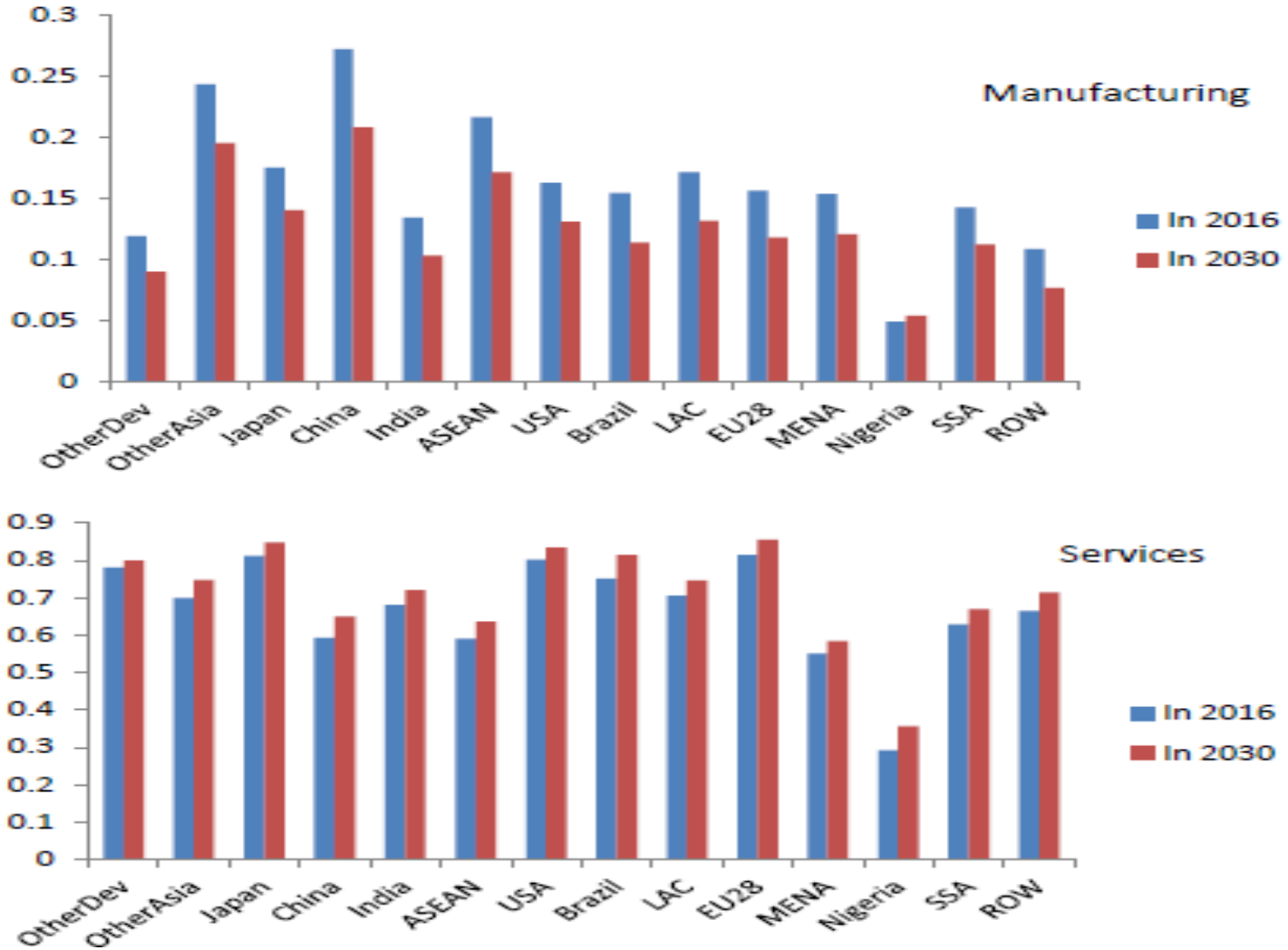
- Three main features:
  1. Differential productivity growth raises the share of services in the economy and reduces the share of manufacturing and agriculture
     - Lower productivity growth of services (education, health care, hotels, restaurants) raises their price relative to manufacturing and agriculture
     - With limited substitution possibilities of consumers the share of services in the economy rises
  2. The geographic distribution of trade is changing with developing countries taking over the dominant position in global trade from the developed countries:
     - Mainly because of larger income growth in emerging countries
  3. The sectoral distribution of trade follows the production pattern driven by structural change, featuring a rising share of services trade at the expense of manufacturing trade.

Falling trade costs – remember trade costs table from earlier in presentation…

Table: Annual ad valorem equivalent trade cost reductions as a result of technological change in convergence scenario, averages across importing regions

	Total	Common language	Lead time to export	Liner shipping connectivity index	Credit and contracts
Regions					
SSA	-1.30	-0.34	-0.22	-0.21	-0.54
ROW	-1.05	-0.42	-0.23	-0.34	-0.08
MENA	-0.91	-0.35	-0.19	-0.16	-0.21
Nigeria	-0.87	-0.30	-0.35	-0.12	-0.10
OtherAsia	-0.85	-0.33	-0.09	-0.13	-0.30
ASEAN	-0.78	-0.35	-0.07	-0.15	-0.22
EU28	-0.78	-0.41	-0.08	-0.14	-0.15
Brazil	-0.76	-0.43	-0.14	-0.06	-0.12
LAC	-0.66	-0.21	-0.18	-0.12	-0.15
OtherDev	-0.63	-0.33	-0.04	-0.20	-0.06
India	-0.60	-0.26	-0.10	-0.06	-0.18
Japan	-0.59	-0.39	-0.10	-0.03	-0.08
China	-0.56	-0.35	-0.10	0.00	-0.12
USA	-0.43	-0.25	-0.11	-0.01	-0.06

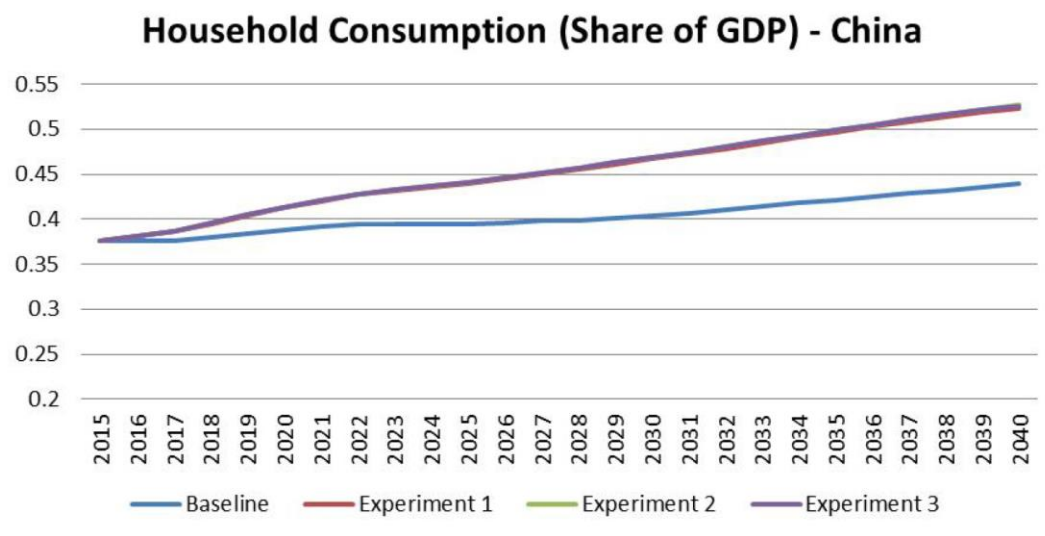
Increased servicification of the global economy in the baseline

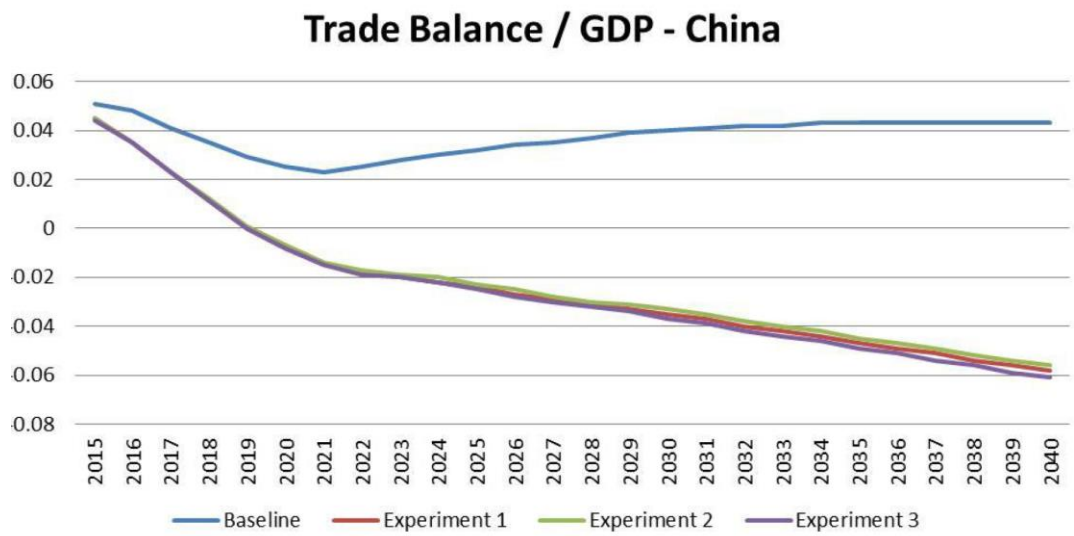


Structural change in China: construction of shocks

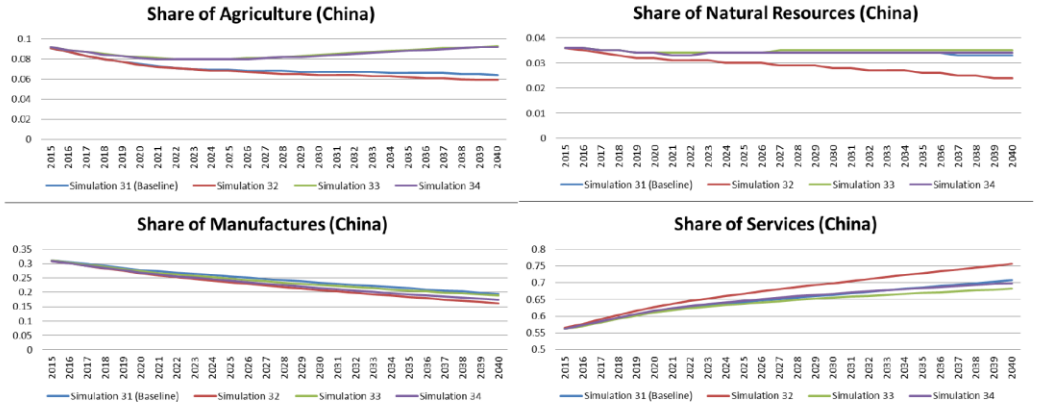
1. Falling savings rate
   - Baseline projections predict a fall to 42% in 2030
   - World Bank projected in 2012 in report on structural changes in Chinese economy that gross savings rate would decrease to 33.5% by 2030.
   - Continuing trend leads to further fall of the savings rate to 25%
2. Rising share of skilled workers
   - World Bank predicts that the share of skilled workers in the Chinese economy will reach "advanced countries" levels by 2040.
   - The share of skilled workers projected to increase to about 40% in 2040.
3. Rising productivity growth in targeted manufacturing sectors
   - Chinese State Council presented Made in China 2025 in May 2015 aimed at promoting high-end manufacturing sectors such as aviation, maritime and rail equipment, new-energy vehicles and electronic equipment
   - Concrete goal to raise self-sufficiency rates through investment in technological innovation
   - Translated into target for increased domestic market share of four GTAP-sectors, motor vehicles, electronic, other transport, and machinery equipment through higher productivity growth

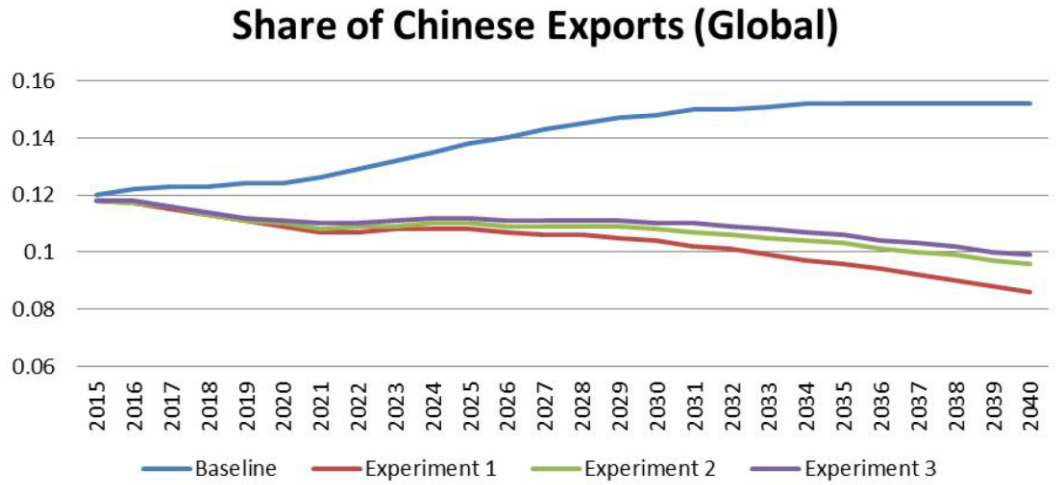
“Composition” of world trade could change dramatically…





Industrial policies can affect the baseline….





Structural change in China: impact on China in the world

1. The share of Chinese exports in global exports rises in the baseline from 0.16 to 0.19, whereas it fall to 0.11 under the experiments
2. Market shares of Southeast Asia and SSA-MENA in Chinese exports rise, whereas the market shares of Japan, the USA, and the EU fall
3. Share of manufacturing exports in total exports of China falls slightly
4. Revealed comparative advantage changes are mainly driven by Made in China 2025 productivity shocks:
    - Fall for light and heavy manufactuing and other manufacturing (textiles for example)
    - Big increase for electronic equipment
5. The bilateral trade surplus of China vis-a-vis the United States rises from about 300 billion in 2015 to 450 billion in 2040 in the baseline, whereas it gets close to zero (50 billion) with falling saving rates

WORLD TRADE ORGANIZATION

Concluding remarks….

- Global trade has changed dramatically over the last 35 years.
- Forces driving trade are a mix of trade policy and broader macroeconomic forces.
- Trade will continue to evolve in the next 35 years.
  - Looking at evolution of gvcs why should they not continue to evolve?
- Trade conflict can be very costly, particularly so if it affects macro economic drivers and long term potential growth.
- Using trade costs, insights on economic fundamentals and a global simulation model to organize our thinking we can parse how some of these various forces may affect the evolution of trade flows in a time of trade conflict and rapid economic change.