



Trade and Growth: Past, Present and Future

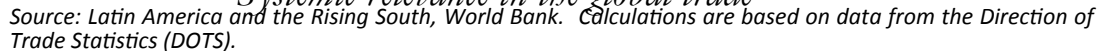
Remarks prepared for
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These remarks are my own and do not necessarily reflect the views of the WTO, the
Director General, or any WTO member



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 has been slow – fundamental macro factors, uncertainty?
- But recovered this year, despite all the rhetoric.
- But risks are clearly higher than normal for potential protectionist actions.
- What would be impact?
 - Short term not likely overly dramatic on macro indicators unless accompanied by other policy. Lessons from Great Depression and Great Recession.
 - Sector and Trade shifting.
 - Longer term – some large countries could slowly fall behind global technology frontier.



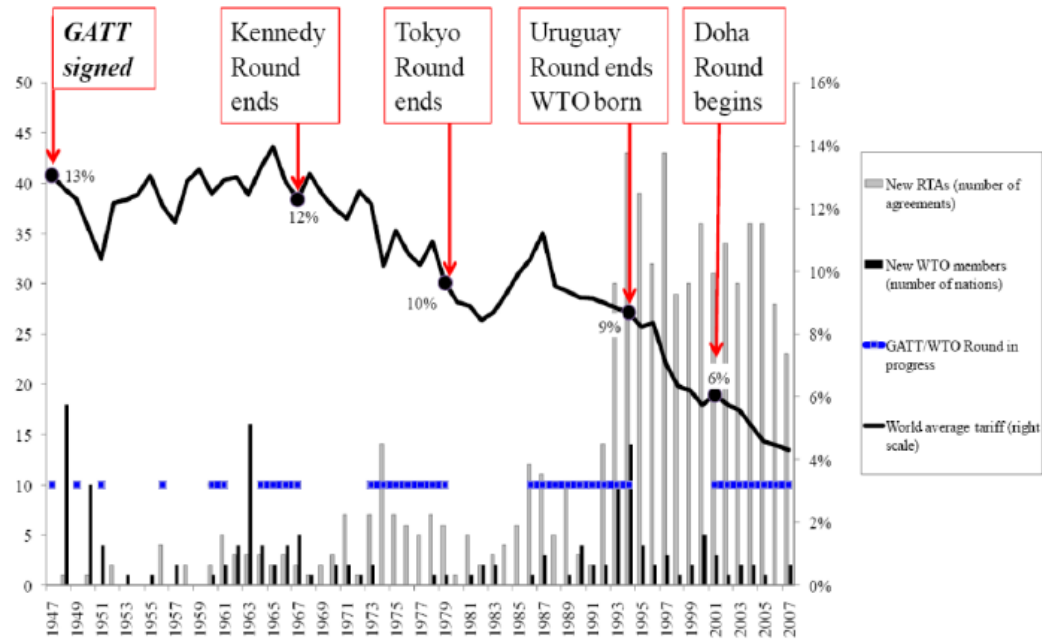


Trade costs

- Barbie doll (now.... iPhone) 1998
 - \$1 production costs in China
 - Leaves HK at \$2
 - Sold for retail at \$10 in US – 900% AdV tax equivalent...
- Anderson and Van Wincoop - Rough estimate of AdV TE of representative trade costs for industrialized countries is 170%
 - $(1 + 21\% \text{ trans}) * 44\% \text{ border} * 55\% \text{ retail/wholesale distribution} = 270\%$
 - The 21% = directly measured freight plus 9% TE for time value of goods in transit (based on US data.)
 - The **44% “border related = combo of directly observed (tariffs – generally low – 8%, but range from less than 5% in “rich” to 10 to 20% in developing) and inferred (information, contract enforcement, legal and regulatory costs – also substantially higher in developing than rich countries.)**
 - International trade related costs are about 74%
 - What about market power and economic rents?
- High value to weight goods are less penalized by transport costs
- Timeliness varies
- Poor institutions and poor infrastructure can have substantial country specific effects.



Global Tariffs....

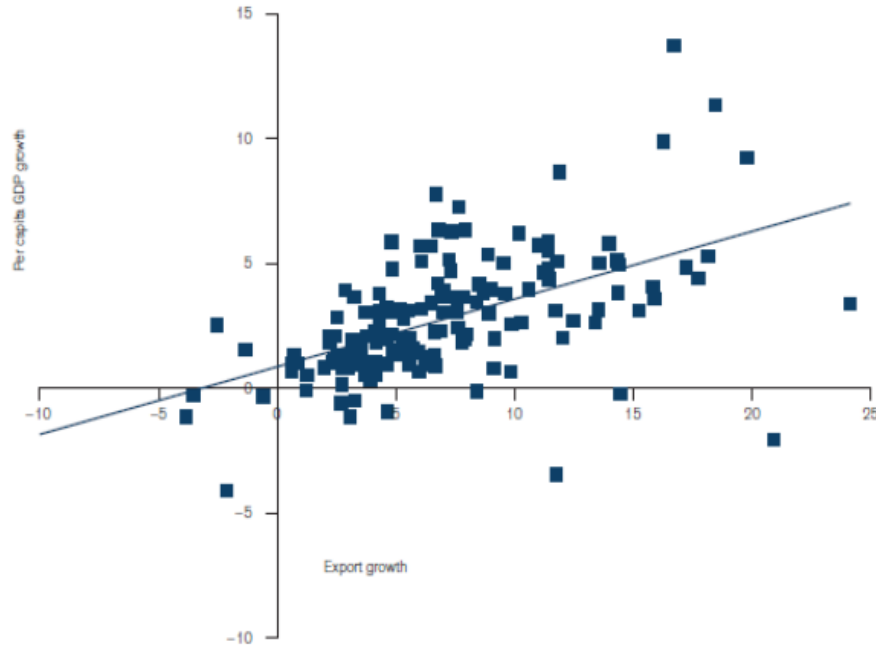




Role of trade – positive correlation with economic growth

- 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.

Figure B.7: Real per capita GDP growth and merchandise export volume growth, 2000–11
(average annual percentage change on both axes)

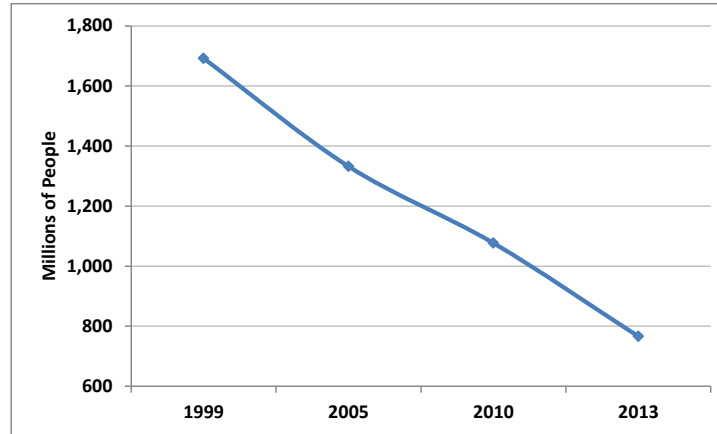




A highly correlated decline in poverty

Chart 1: Number of the Poor in the Developing World

(Number of people with incomes below US\$1.90 a day (2011 Purchasing Power Parity))



Source: World Bank Povcalnet (<http://iresearch.worldbank.org/PovcalNet/povDuplicateWB.aspx>)



What is driving slow trade growth and what can be done to ensure trade is playing its role in broader economic growth?

- What is slow trade growth? What is trade's role in economic growth?
- Slow trade? Recent research by IMF, OECD, WTO, ECB, UBS, WIOD/UoG, etc have focused on (and drawn from Bussiere et al)... Import Adjusted Demand intensities.
 - Macro forces – demand, GVCs, etc.
 - Structure of global demand?
 - $C+I+G+(X-M)$, decomposing structure of each into domestic use and export, C into consumer durable, non durable, I into machinery and equipment vs. structures, etc.
 - Trade intensity – Inv for mach and equip, C for consumer durables, X are trade intensive, as are any imports for exports (obviously)
 - Composition across development level, developed, emerging, developing?
 - Supply side – structure of global production? GVCs
 - Lack of continued liberalization – loss of momentum? This factor does seem to stand out in the analysis.
 - Protectionism? Rise of measures? Sometimes shows up as standing out, but impact, so far, appears relatively small. Still, this component is potentially actionable.
- Most agree on important role for demand, particular I and C durables
- Role of GVCs – comparing LTAvg trade or Peak trade to current weak trade?



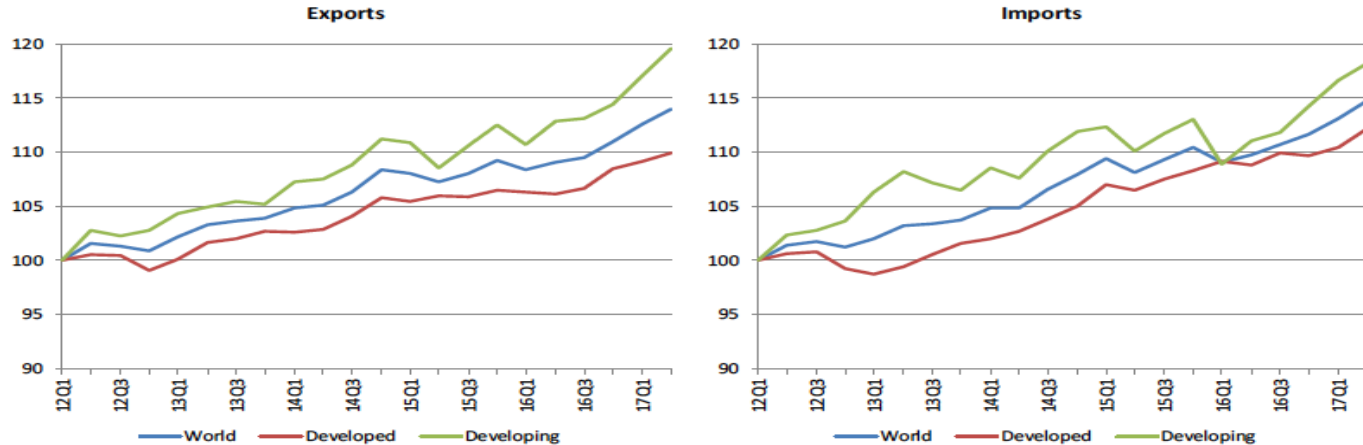
Trade's Role in Growth?

- Short term efficiency gains – depend on level of distortions being removed, and kind of distortions.
- Long term efficiency and productivity gains – shifting out the productive capacity of the economy.
 - OECD research on trades contribution to productivity growth very important.
- With the rapid emergence of CEE, China, and India in the 1980s and significant liberalization from MTAs (agreements, accessions, plurilaterals), RTAs, unilateral liberalization, we saw both things occurring, and there was rapid convergence toward global production frontier, particularly in manufacturing.
- This combination led to peak trade and rapid and significant economic convergence.
- Can it be reproduced? Much of the world remains far from the frontier and moving slowly – so room for further gains. But reasonable to expect a similar alignment to the long 1990's?



What is happening now? Finally a trade recovery? How long will it last?

Chart 1: Merchandise exports and imports by level of development, 2012Q1-2017Q1
(Volume index, 2012Q1=100)

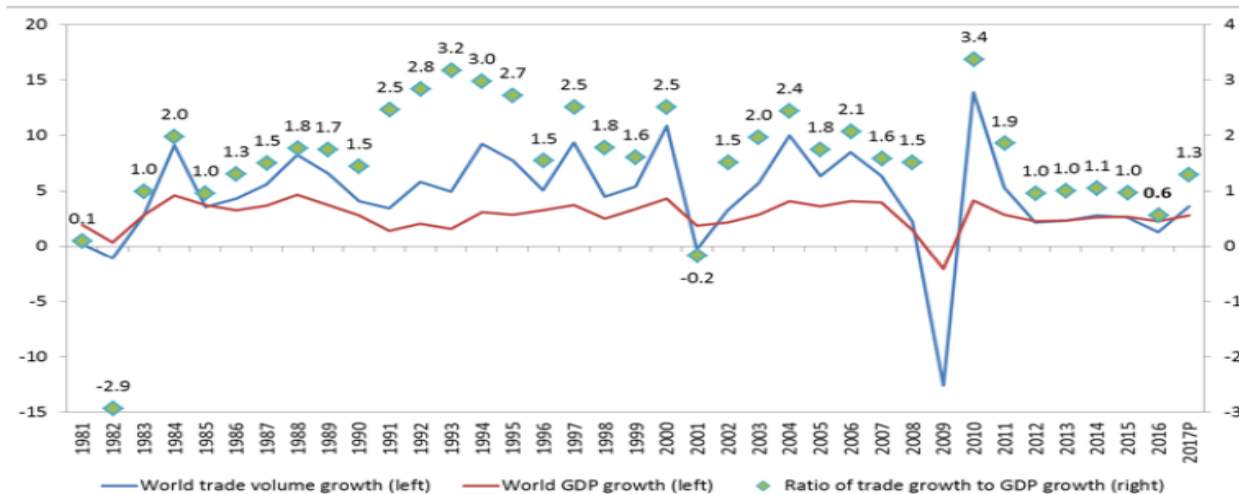


Source: WTO Secretariat.



A move back toward longer term relationship between GDP and trade growth?

Chart 3: Ratio of world merchandise trade volume growth to world real GDP growth, 1981-2017
% change and ratio

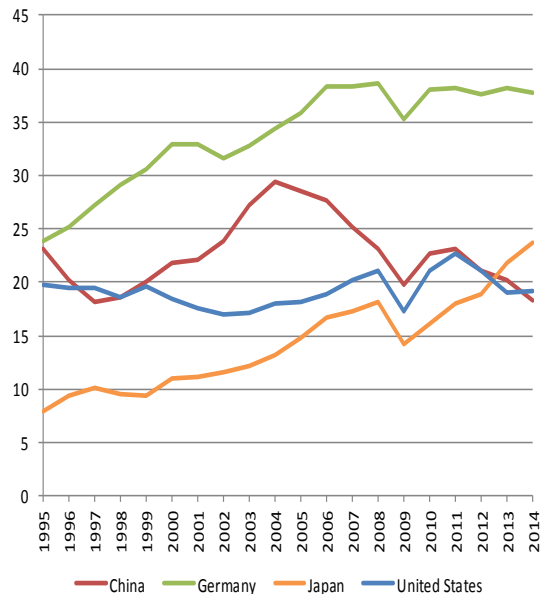


Sources: WTO Secretariat for trade, consensus estimates for GDP.

Causes of the trade slowdown are multi-faceted

Import content of investment for selected economies, 1995-2014

(Share, %)



Source: World Input Output Database (WIOD) 2016 and WTO Secretariat calculations.

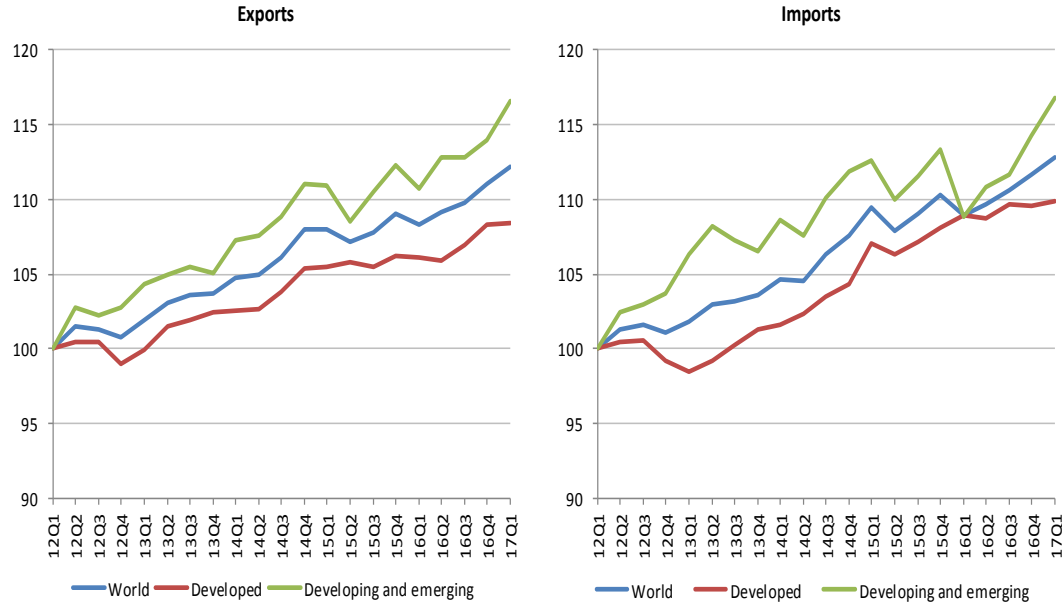
- Several explanations for the trade slowdown have been proposed, including cyclical and structural factors, but none is definitive.
- Weak global demand has been a key factor, particularly weak investment (IMF WEO, October 2016).
- The import content of investment helps to explain the slowdown (WTO Working Paper ERSD-2017-09, Auboin and Borino).
- Absence of trade liberalization rather than protectionism (WTO monitoring reports).
- Maturation of global value chains rather than contraction (OECD Economic policy paper No.18, September 2016).



Imports of developing economies dipped in 2016Q1 but recovered in 2017...

Volume of merchandise exports and imports by level of development, 2012Q1-2017Q1

(Seasonally adjusted indices, 2012Q1=100)



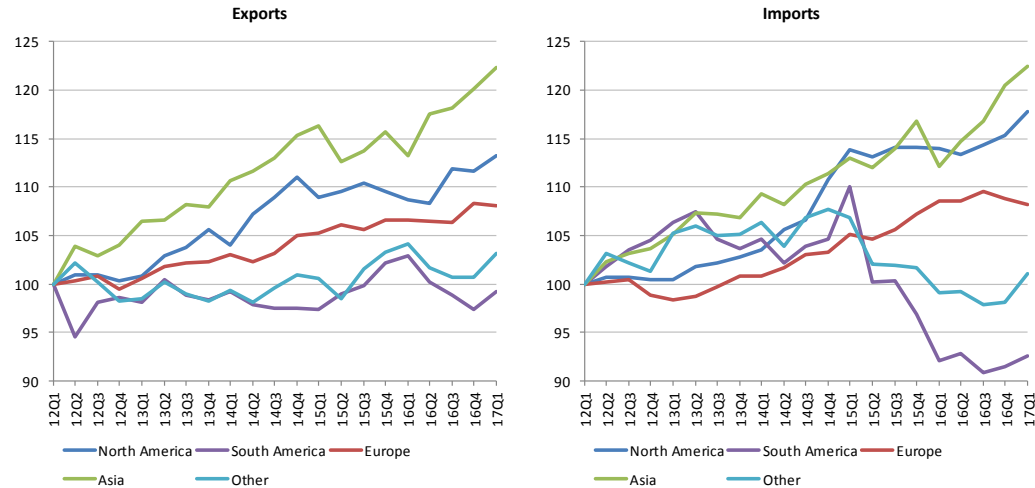
Source: WTO Secretariat.



... with steepest declines in resource exporting regions.

Volume of merchandise exports and imports by region, 2012Q1-2017Q1

(Seasonally adjusted indices, 2012Q1=100)

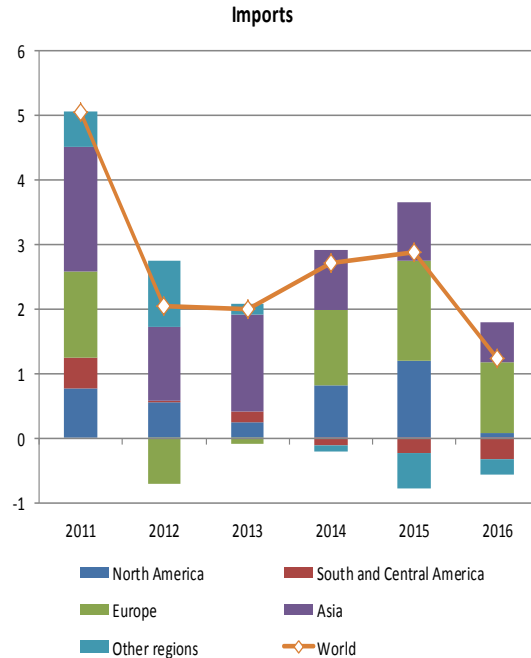


Source: WTO Secretariat.

Recovery of world import demand has been uneven

Contributions to world import volume growth by region, 2011-2016

Annual % change



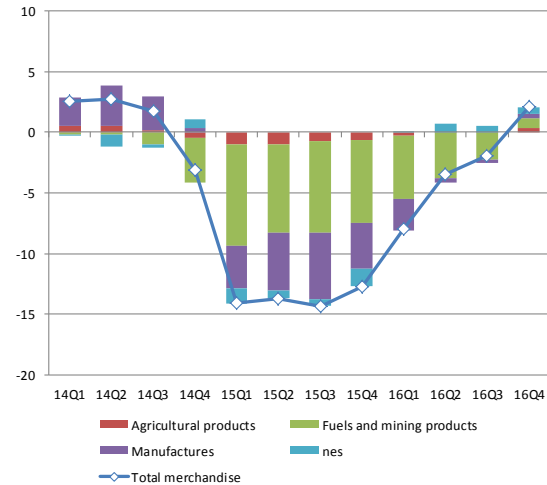
Source: WTO Secretariat.

- Since the financial crisis one region or another has consistently weighed on global trade growth, preventing a more robust recovery.
- The euro debt crisis dragged down import demand in 2012-2013.
- North American imports slowed last year while the contributions from Europe and Asia remained positive.
- World trade volume growth dropped to 1.3% in 2015 from 2.6% in 2016.

Falling trade values mostly due to commodity prices

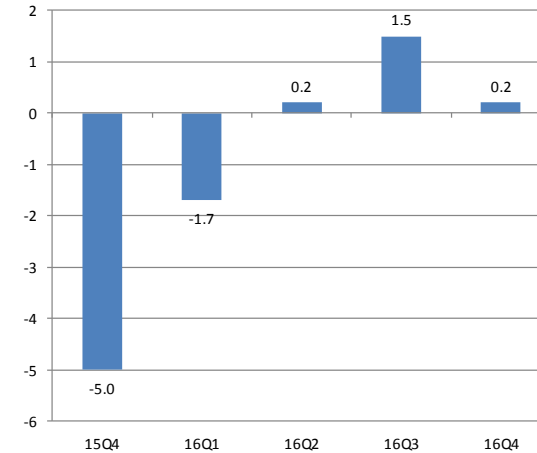
Contributions to year-on-year growth in the current dollar value of world merchandise trade by product, 2014Q1-2016Q4

(Percentage change, %)



Source: WTO Secretariat estimates based on partner statistics.

World exports of total commercial services, 2015Q4 - 2016Q4
(year-on-year percentage change)

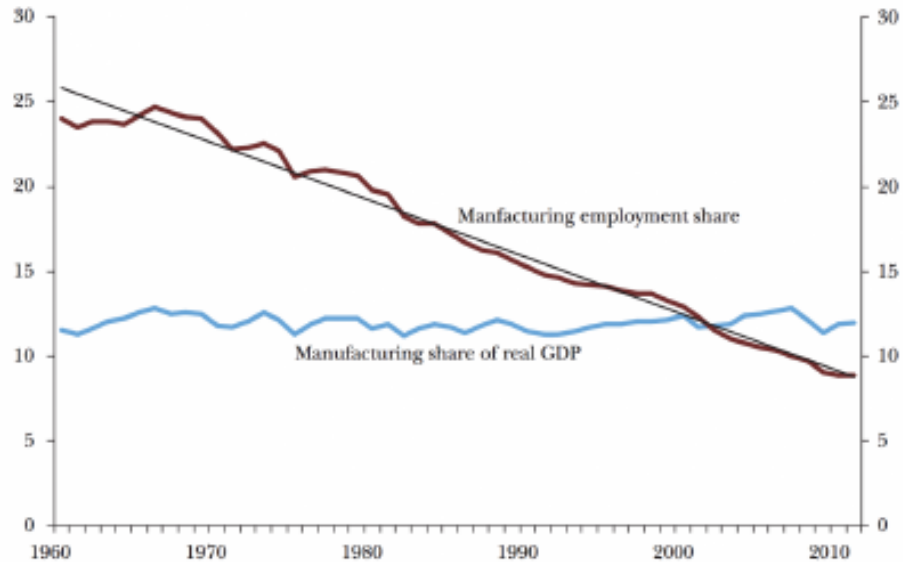


Source: WTO Secretariat.



The US story – ADH trade 1 out of 5 million, but trend is much longer.

Figure 1
**Manufacturing Value Added and Employment as a Share of the Total US Economy,
1960–2011**
(in 2005 prices)



Source: Industry Accounts of the Bureau of Economic Analysis.

Note: Output is measured as value added in 2005 prices, and employment is reported as persons engaged in production (full-time equivalent employees plus the self-employed).



Growth and redistribution of factors and output – adjustment costs.

- Some rules of thumb
 - Comparative static effects of trade policy change are larger the bigger the distortions removed (or added.) So how much you change relative prices and distort your position on the PPF.
 - Dynamic effects of trade policy change will depend on how far you are from the global PPF. If you start well behind it, dynamic effects of trade (and other “good” policies) can be much, much bigger.
 - Samuelson 2004 and China? China, using trade and other policies, dramatically shifted out its PPF. China WTO was about China lowering its tariffs, not other WTO members. How its PPF shifted out was affected by policy, trade and other, and that had terms of trade implications for ROW, particularly US and other developed countries.
 - As Samuelson points out – what can/should you do? Protectionism not the answer.
 - Theory has evolved – Ricardo, H-O, Specific Factors, Krugman, Melitz. But real world has more complex than theory



Adjustment costs...

- There are many “margins” of adjustment. I mentioned countries, sectors, firms, households, factors (labor type, capital). Theory has dealt with illustrating how change may affect some of the economic agents.
- The push back against globalization is visible in the distribution of effects across agents and the related adjustment costs.
- First take sector effects.
- Then take skilled/unskilled labor and urban/rural adjustments.



“Winners and Losers” Example of impacts – estimated sectoral effects in USITC study of US-Australia FTA – tariff impacts

Table 3-6
Changes in output and employment in the United States

	Output ¹		Labor quantity impact
	Quantity impact	Revenue impact	
	Percent		
Services	-0.002	0.003	-0.002
Capital goods	0.000	0.000	0.000
Petroleum, coal, chemicals, rubber, plastic	0.021	0.022	0.021
Other machinery and equipment	0.039	0.041	0.039
Other processed food and tobacco products	0.009	0.004	0.007
Motor vehicles and parts	0.098	0.097	0.099
Other manufactures	0.004	0.007	0.004
Ferrous metals	0.021	0.022	0.021
Electronic equipment	-0.044	-0.042	-0.044
Textile, apparel, and leather products ..	0.014	0.009	0.014
Wood products	0.002	0.004	0.002
Transport equipment n.e.c.	-0.047	-0.046	-0.048
Meat products	-0.304	-0.328	-0.304
Metals n.e.c. and metal products	-0.041	-0.044	-0.041
Coal, oil, gas, other mineral	0.145	0.151	0.146
Cattle and horses	-0.298	-0.314	-0.335
Dairy products	-0.005	-0.011	-0.005
Grains	-0.118	-0.134	-0.155
Other crops	0.001	-0.014	-0.030
Animal products n.e.c.	-0.109	-0.126	-0.146
Vegetables, fruits, nuts	0.009	-0.006	-0.027
Sugar	-0.010	-0.018	-0.010
Sugar crops	-0.010	-0.031	-0.049

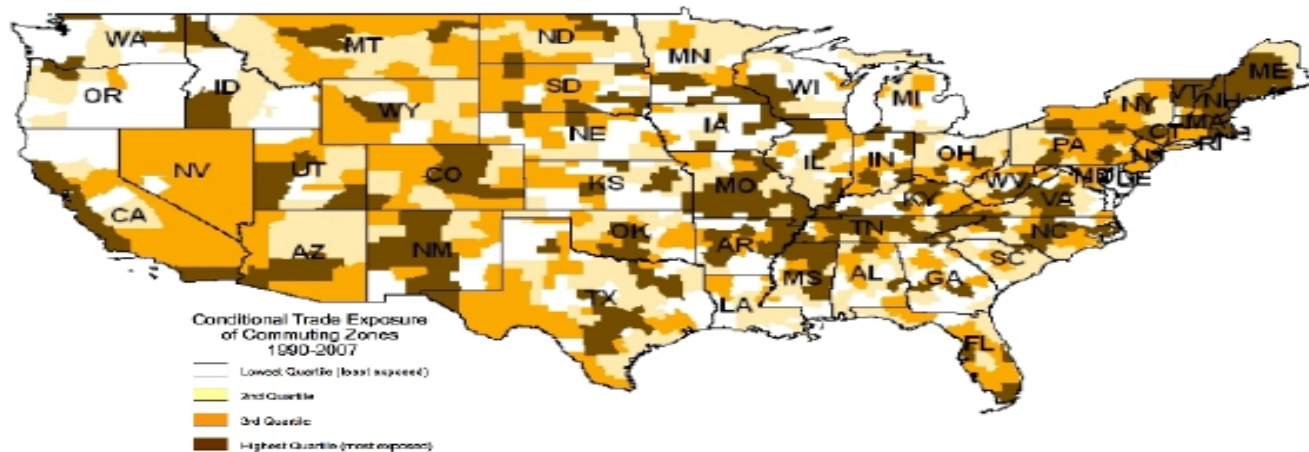
¹ The revenue impact reflects changes in the prices as well as the output quantities of the listed sectors.

Source: Commission calculations and GTAP version 6, prerelease 1 data.



Or Autor, Dorn and Hanson in US

Import exposure 1990-07 (cond'l on manufacturing emp)



Among 50 Largest Commuting Zones

(A) Largest Increase in Exposure

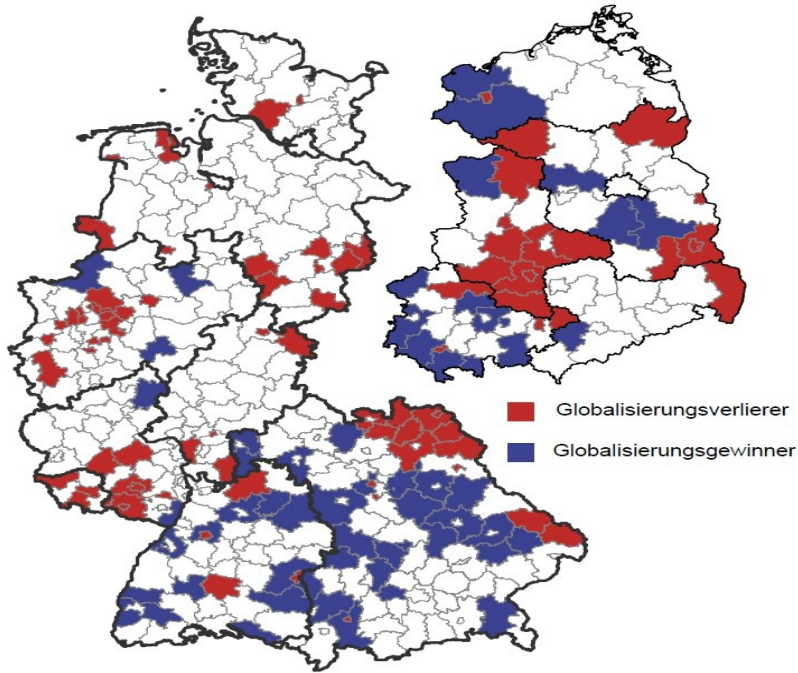
1. San Jose, CA
2. Raleigh, NC
3. Providence, RI

(B) Smallest Increase in Exposure

1. Detroit, MI
2. Grand Rapids, MI
3. Seattle, WA



Challenges? The many margins of adjustment...Regional impact across German regions - source Suedekom.



Highly import-exposed regions


- Ruhr area → Coal & steel
- Südwestpfalz → Textiles and shoes
- Oberfranken → Toys, consumer electronics

Highly export-oriented regions

- Lower Bavaria, Stuttgart, Allgäu → Cars & car parts

Eastern Germany

- Much smaller manufacturing sector overall
→ smaller impacts of trade, lower geographical variation



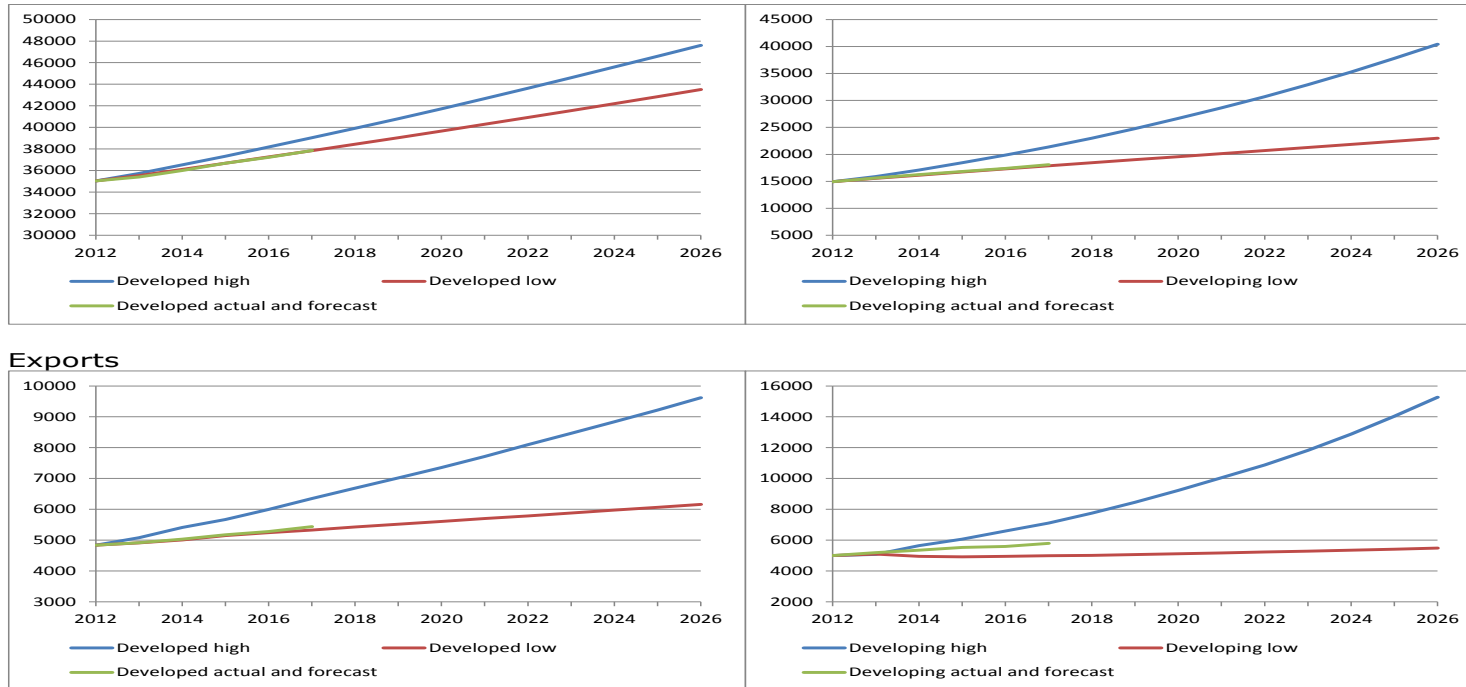
The last 35 years have seen rapid integration and globalization. What does the future hold?

- Likely more rapid change and adjustment. Slowing trade integration may have impact on margin, but technological change is rapid and spreading.
- Developing countries aiming at “industrialization” may find relatively jobless industrialization.
- Rapid movement of capital and knowhow means global market extremely competitive.
- Digital economy does not seem to connect urban/rural divide!
 - Cities and agglomeration effects appear to critical for digital economies.
- How will next 35 years look?



Prospects: we have been in a low growth scenario – green line....

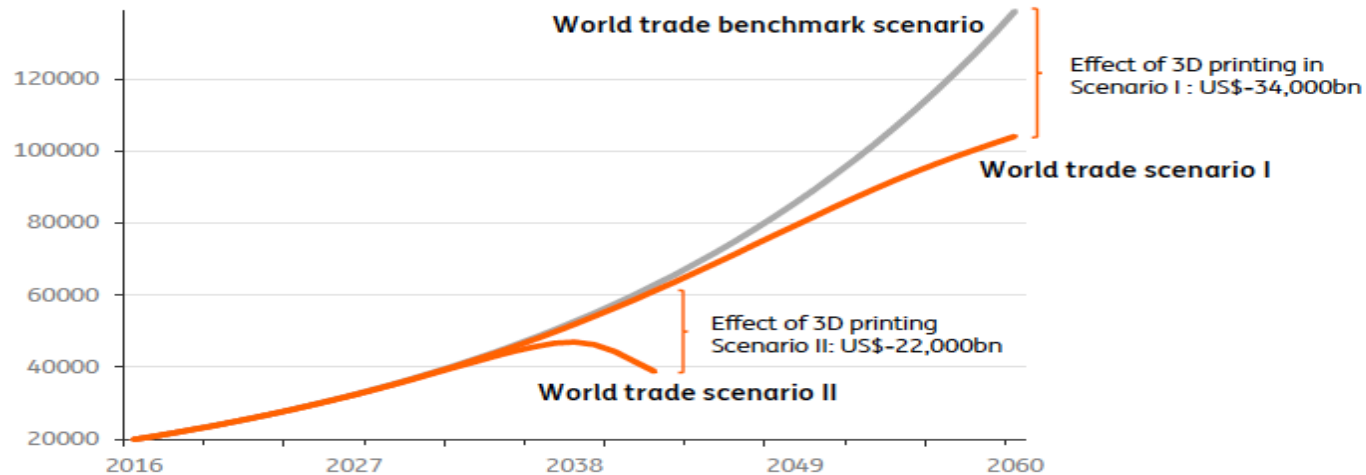
Chart 2: Projected GDP and Exports 2012-26, by country group
(billion constant 2004 US\$)



Sources: Fontagné, Fouré and Keck (2016), WTO (2016) and WTO (2013).

Why will next 35 years look different than past 35 years?

Fig 7 Scenarios for effect of 3D printing on world trade (goods and services) (US\$bn)*



*See note below Figure 5 for explanation of scenarios and *Appendix 2* for calculations

Source: Oxford Economics; Wohlers report 2017, 3D printing and additive manufacturing, state of the industry, annual progress report; Unctad, calculations by ING



China 2030 rebalancing - Pressures Towards Consumption-Led Growth

Richer consumers and gov initiatives will increase consumption levels

Expenditure Side of GDP			
(% of GDP)	1978-Today	Projection	Projection Explanation
Savings	↑	↓↓	
Private Consumption	↓	↑	As wealth ↑
Government Consumption	↔	↑	Social safety spending to ↑
Investment	↑	↓	Rate of return ↓
Current Account	↑	↓	Same direction as balance w/US
Production Side of GDP			
	1978-Today	Projection	Note
Ag	↓	↓	
Industry	↑↑↑	↓	Drop in manufacturing as wages ↑
Services	↑↑↑	↑↑↑	Same direction as balance w/US

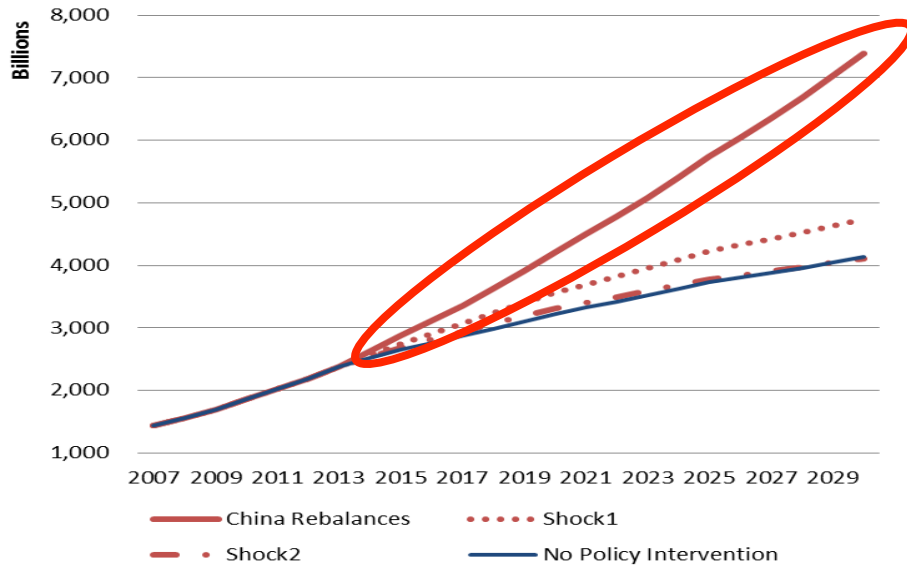
*Demand-driven shock
(changing consumption preferences)*



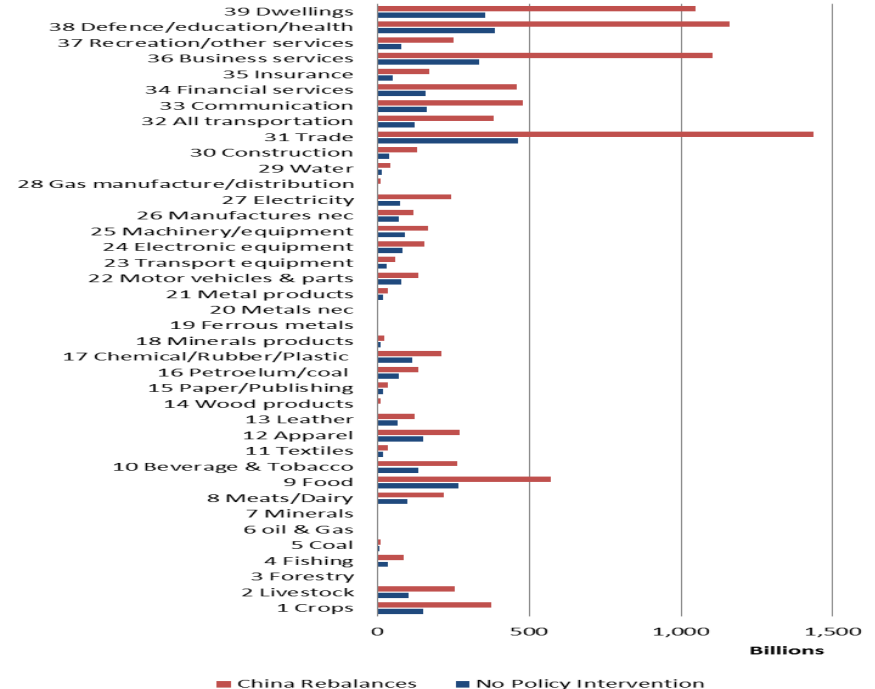
The next decades are not likely to look like the last ones – China 2030 Simulation Results- China Household Consumption

From Koopman, Tsigas, Hammer, Lin 2013 - unpublished

Real private household consumption in China



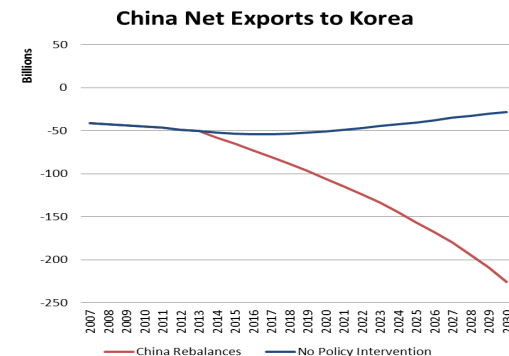
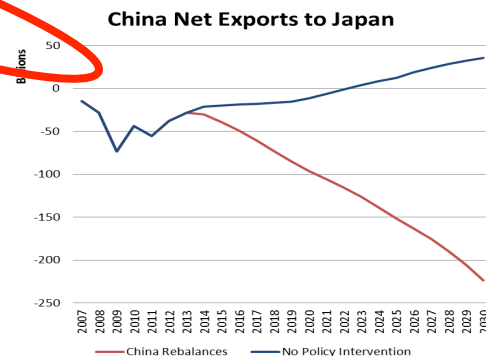
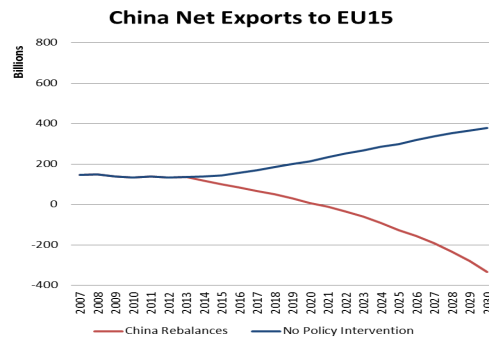
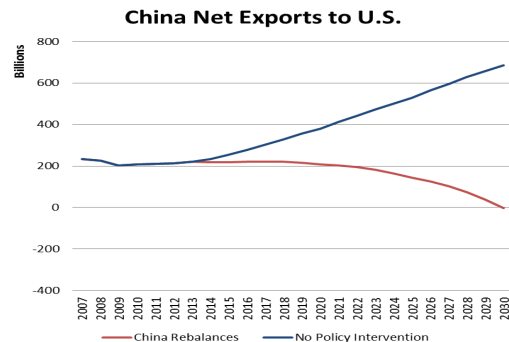
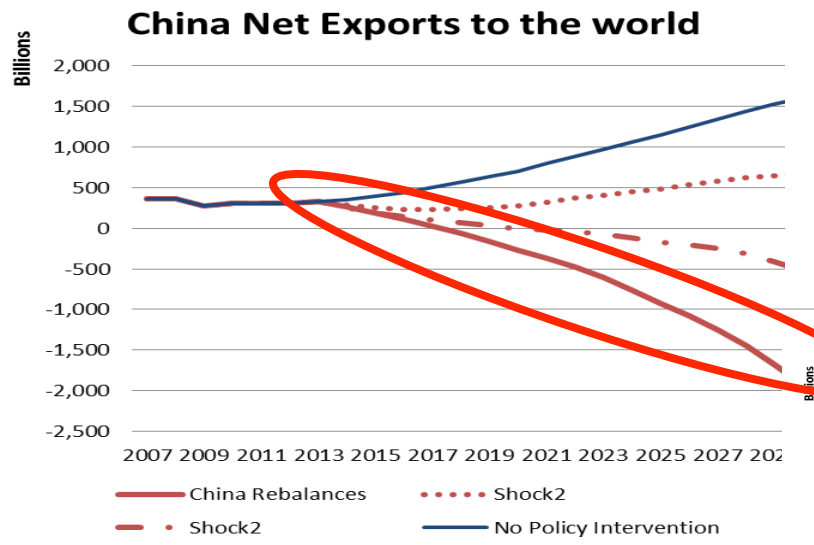
China Private household Consumption in 2030





China 2030 - Simulation Results- China Trade balance

From Koopman, Tsigas, Hammer, Lin 2013 - unpublished

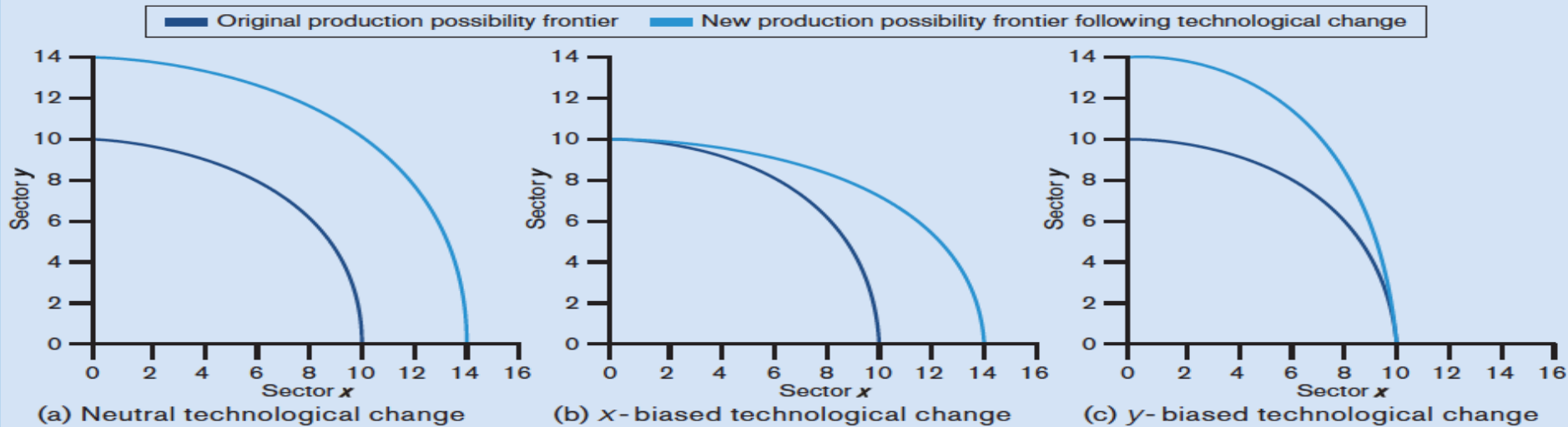




To understand the future of trade you need to think about how technology and consumer preferences might change

- Trade and Technology work through economy in similar ways...

Figure C.1: Technological change in a production possibility frontier framework



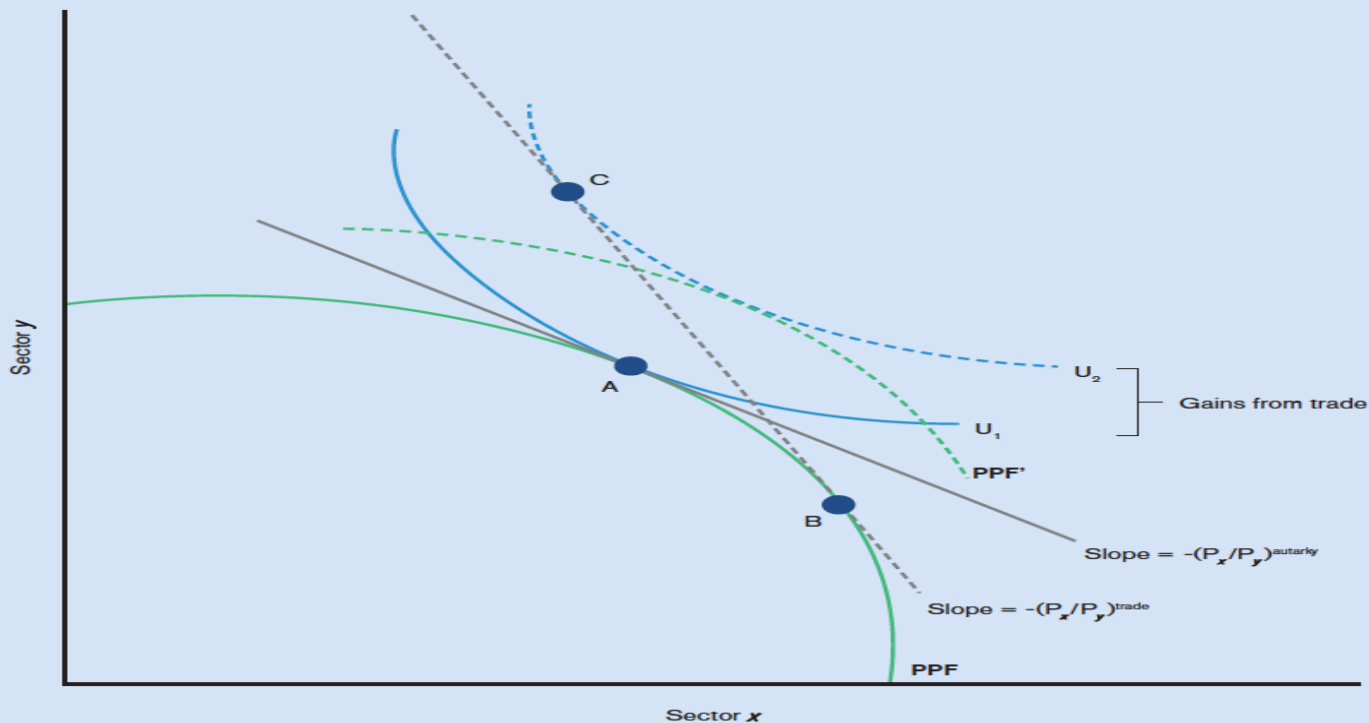
Source: WTO Secretariat.



Why is it hard to sort out trade vs technology?

- They work through economy in similar ways...

Figure D.1: Trade openness and technological change in a production possibility frontier



Source: WTO Secretariat.



Why focus on technology and trade

- Effects and mechanisms can work through economy in similar ways. But what are appropriate policy environments?
 - Many economists summarize trade as importing another countries technology (or endowments, or a combination of the two) embedded in the goods or services.
- The rise of globalization has been occurring at the same time as a major technological revolution.
- Growing global inequality within countries while there has been some convergence between countries.
- One needs to distinguish between technology effects and trade effects.
- Why? If you focus attention on one (as often happens, a focus on trade) then your policy response could be completely ineffective at addressing the underlying effect from the other driver.



Fear the rise of robots?

- Historically technological innovation has been disruptive but overall improved standards of living.
 - Like trade, there are winners and there are losers.
 - Unlike trade, you don't necessarily see the forces in play, but the effects can be just as large.
- Fallacy of the “lump of labor.” In economies with well functioning institutions, infrastructure, and markets **NEW** kinds of jobs are created. We do not know what those jobs will be, but we can understand the economic factors and conditions that lead to their rise and likely how well they will be compensated. Big challenge to identify those factors and conditions!
- Over the very long run, gains in productivity have not led to a shortfall of demand for goods and services. Instead household consumption has largely kept pace with household incomes.
- However some models illustrate that income concentration could have significantly negative long run effects – if concentration reduces human capital investment...



- David Autor has written on both effects.
 - For technology key point – understand the labor market.
 - First, workers are more likely to benefit direct from automation if they supply tasks that are complemented by automation, but not if they primarily (or exclusively) supply tasks that are substituted.
 - Programmers for websites like Expedia or Ali Baba compared to travel agents or “brick and mortar” merchants.
 - Second, the elasticity (responsiveness) of labor supply can mitigate wage gains.
 - If it is easy for labor to move into “technology complementary” jobs this will reduce the potential wage gains.
 - Third, the output elasticity of demand combined with the income elasticity of demand can either dampen or amplify the gains from automation.
 - For example in developed countries the spectacular productivity improvements have been accompanied by declines in the share of hh income spent on food. However in health care technology improvements have increased the share of income spent on health.



Aggregate effects

- Technological progress is the main source of economic growth, but it is also the main source of labour market change
- Technological progress can assist workers, through labour-augmenting technology, or replace them, via automation. In both cases, the overall effects on labour demand are ambiguous
- The empirical literature has generally found small and possibly even positive effects of technological change on aggregate labour demand and employment.
- There are, however, a few relevant exceptions, with some studies showing the negative effects on labour demand generated by technological change.
- A common theme in the literature is that, in developed and developing countries alike, the most relevant effects are on the structure, rather than on the level, of employment.



Why rising skepticism around trade in some developed countries?

- Economic growth has not been widely shared across job categories and regions.
 - Increasing skill/routine bias from technology (75% US), and to some extent trade (25% US)
- In countries with strong adjustment mechanisms and/or well functioning labor markets support for globalization remains high.
- Economic activity increasingly concentrated in urban areas?
- Behavioral economics tells us that people put more weight on potential losses than gains and that people in general tend towards “equitable” distribution of gains.
- What happens if protection increases or multilateral coordination decreases?
Dynamic effects greater than near term effects.



Adjustment costs

- Workers who lose their jobs in declining sectors, in exposed regions are not always well equipped and well placed to access newly created jobs
- Because of various “frictions” which constrain the mobility of workers, adjustment costs can sometimes be significant.
- Examples of frictions include: skill-mismatch related frictions, geographic mobility frictions, institutions related frictions
- Recent cross-country empirical evidence suggests that on average obstacles to labour mobility are twice as high in developing countries as in developed countries



How can governments respond? Adjustment policies

- Governments can help workers to manage the cost of adjusting to technological change and trade, while making sure that the economy captures as much as possible the benefits from these changes through a mix of adjustment, competitiveness and compensation policies.
- This need for a mix of approaches also broadly applies to developing countries but one needs to take into account the larger share of workers in the informal, agricultural and state-owned enterprise sectors of those economies.
- Beyond improving economic efficiency, adjustment policy offers a way to compensate those who lose out from the dislocation caused by economic change and it can also help maintain political support for innovation and trade openness.
- General adjustment programmes can deal with a wider range of economic changes but trade-targeted programmes can be cheaper than those that cover all types of these shocks.
- Adjustment policies take different forms
 - Active (e.g. retraining) and passive (e.g. unemployment insurance) labour market policies
 - Other policies that help reduce frictions and adjustment costs



Competitiveness and compensation policies

- Policies focusing on improving infrastructure, credit markets and education opportunities can make an economy more resistant to economic shocks and more receptive to opportunities created by technological change and trade.
- In addition to mitigating the costs of adjusting to economic change, governments may adopt measures to address how the consequences of trade and technological change are unevenly distributed?
- There is little support for the view that trade-opening and globalization hinder the capacity of governments to adopt such measures.