The nation and the world economy

ECONOMICS

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UCL

Lecture 18

Context

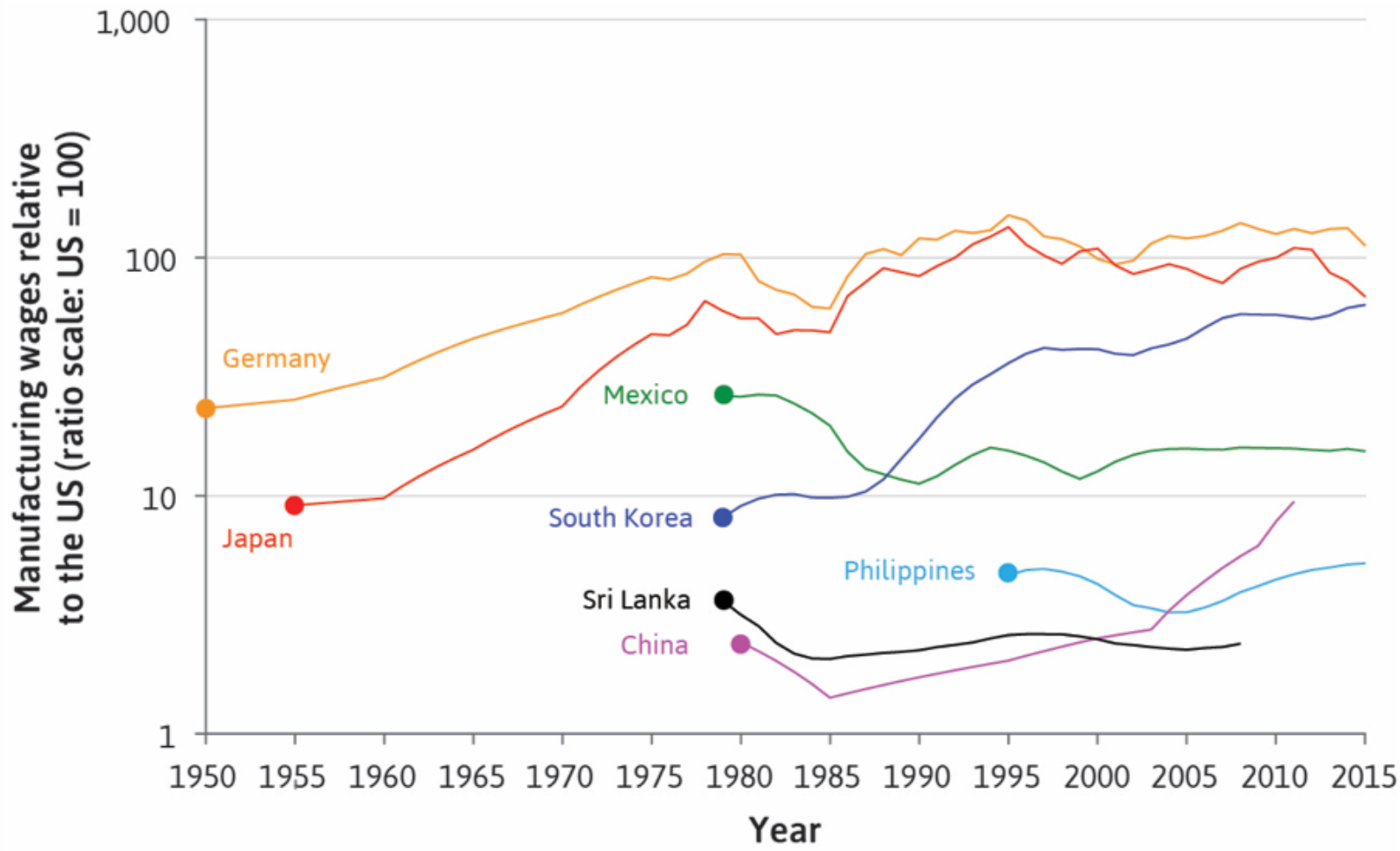
Exchange between parties can be mutually beneficial but conflicts arise over how these gains are distributed. (Units 5-9)

This lecture explores globalisation and its impact on the nation state. It answers the following questions.

- What are the cost and benefit from globalisation?
- What affects how gains from trade are distributed within the country?
- Can governments influence influence the cost and benefits from trade in its favour?

Motivation

Manufacturing wages relative to the US (1950-2015)



The graph describes each countries manufacturing wages relative to the US. Wages in both Germany and Japan were lower than the US after the second world war but they had caught up by the 1980s. South Korea's has caught up with the US after the 1980s. China has made significant strides in the last two decades but still has a long way to go. Sri Lanka and the Philippines have stayed where they were whereas Mexico is the only country that has lagged. In the last lecture, we saw that the period from 1945-1970s was the Golden Age. This is also the period during which Germany and Japan caught up with the US in terms of their manufacturing wages. South Korea and China have moved closer to US wages during the Great Moderation.

This lecture will ask the following question.

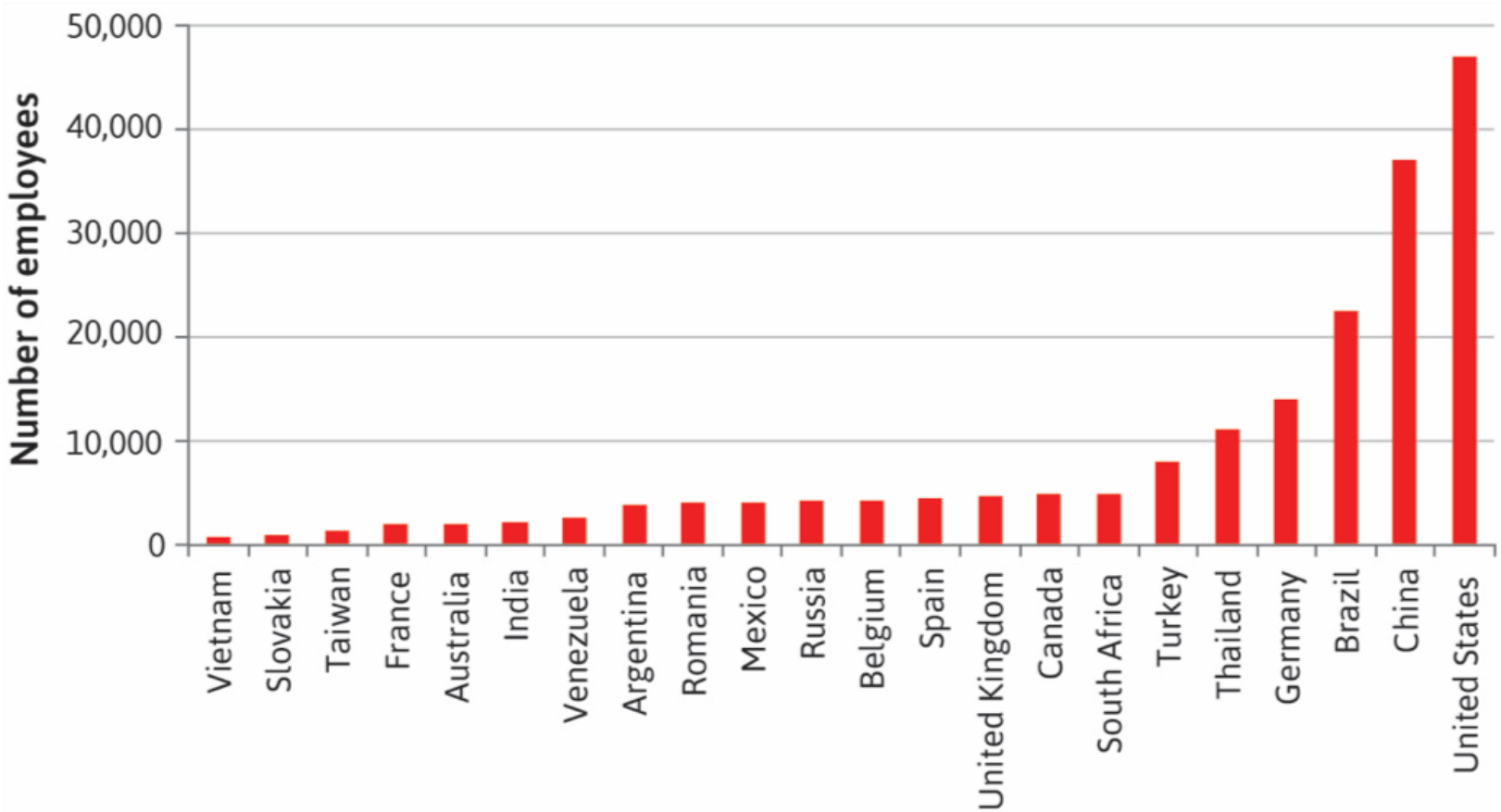
What opportunities does the world economy offer a nation-state to develop economically?

What is the role of the nation-state in a globalised world?

The globalised world economy offers opportunities in terms of trade. Yet, there are significant costs in terms of national sovereignty. The objective of the lecture is to give you a better understanding of the trade-offs as they exist in the world economy today.

GLOBALISATION

Ford Employees across the world in 2014: a reflection of opportunities globalisation offers large firms



The example of Ford illustrates how a company's production footprint can be spread all across the world. The size of the labour force reflects the size of the market for cars. Firms are distinctive in the way they make things, i.e., each firm has its secret recipe. These are ideas that only are only the firm knows how to implement. Ford, in this case, represents a distinctive way of making cars. Ford could have chosen to produce cars in one country. If it had done so, it would have faced trade restrictions in terms of exporting cars from that country. Instead, by producing cars across the world, it can cater to the local market and bypass the trade restrictions. It is the free flow of capital or the fact that Ford's property rights are respected across the world that allows it to set up factories across the world and employ local workers in those factories. The pattern of employees suggests that Ford is responding to trade restrictions and taking advantage of the free flow of capital to have a global production footprint. Japan has a large car market and Japanese carmakers have production facilities across the world. It is striking the Ford has no production facilities in Japan, while Toyota is one of the largest car manufacturers located in the United States. There have been several trade disputes between America and Japan over this. Americans claim Japan is unfairly protecting its domestic car market. Japanese claim Japanese strictly prefer Japanese cars to American cars. The dispute between the two continues.

Globalisation

Globalisation A process by which the economies of the world become more *integrated*

output (goods & services) and factor inputs (capital & labour) *flow freely* across national boundaries

Trade flow flow of goods across borders

Capital flow flow of capital (investment) across borders

Immigration flow of labour across borders

There are normally three-factor inputs in the production function. Capital, labour and technology or ideas. Technology or ideas are non-rival goods, i.e., they can be used at multiple locations at the same time. Hence, they are free to flow across national boundaries. The flow of capital across national boundaries is through investment. When a citizen from one country invests in another country, then they need to ensure that their investment is secure. Hence, the free flow of capital (investment) requires a series of arrangements that secure the property rights of the person who knows the capital, irrespective of their origin. Most countries respect the property rights of the capital owner. As a result, capital has been mobile for a long time. Labour is the least mobile of the three factors, even though it has become more mobile over the last few decades. Just the way capital carries ideas across borders, labour carries with it the knowledge humans in the form of human capital across borders. Finally, trade flows are the flow of goods and services produced using these three-factor inputs.

Hyperglobalisation

Hyperglobalisation: free flow of goods, technology, capital and labour across the national boundaries

Examples

European Union's single market

United States internal market

India internal market

China's internal market

Autarky: no inflow or outflow of goods, technology, capital and labour across the national boundaries.

Example

North Korea

Hyperglobalisation is a term that describes the free flow of factor inputs and output such that the location where the goods and services are produced can be entirely delinked from the location of their consumption.

Most countries have a free flow of goods within their national boundaries. They thus mimic the effect of hyper globalisation within their national boundaries. Think about California's trade with either Oregon or North Carolina. There are no obstacles to trading between these states. Yet, if California trades with Japan, there are several obstacles.

European Union's ambition has always been to create an remove all internal obstacles to trade and reap the benefits of hyper globalisation within the Union. While the United States and the European Union are hyper globalised within, they act as an economic unit and agree on trade arrangements with other countries in the world.

The other extreme is Autakry, i.e., an entirely closed economy where all factor inputs are used to produce goods and services that can only be consumed with the country and there is no trade between the country and the rest of the world.

Most countries in the world are somewhere in between the two where they trade with the rest of the world with some restrictions on the free flow of goods, capital and labour.

Integration of Goods Markets

Common measures of globalisation:

- Trade (export or import) as a share of GDP
- Reduction in trade costs (price gaps) between countries

Merchandise trade Tangible products that are physically shipped across borders

Integration of Goods Markets

Trade as a share of GDP: Upward trend in worldwide trade (except 1914-1945), with sharp acceleration from 1990s onwards

Integration of Goods Markets

Reduction in trade costs (price gaps) between countries

Law of One Price should hold if there are no transport costs or barriers to trade.

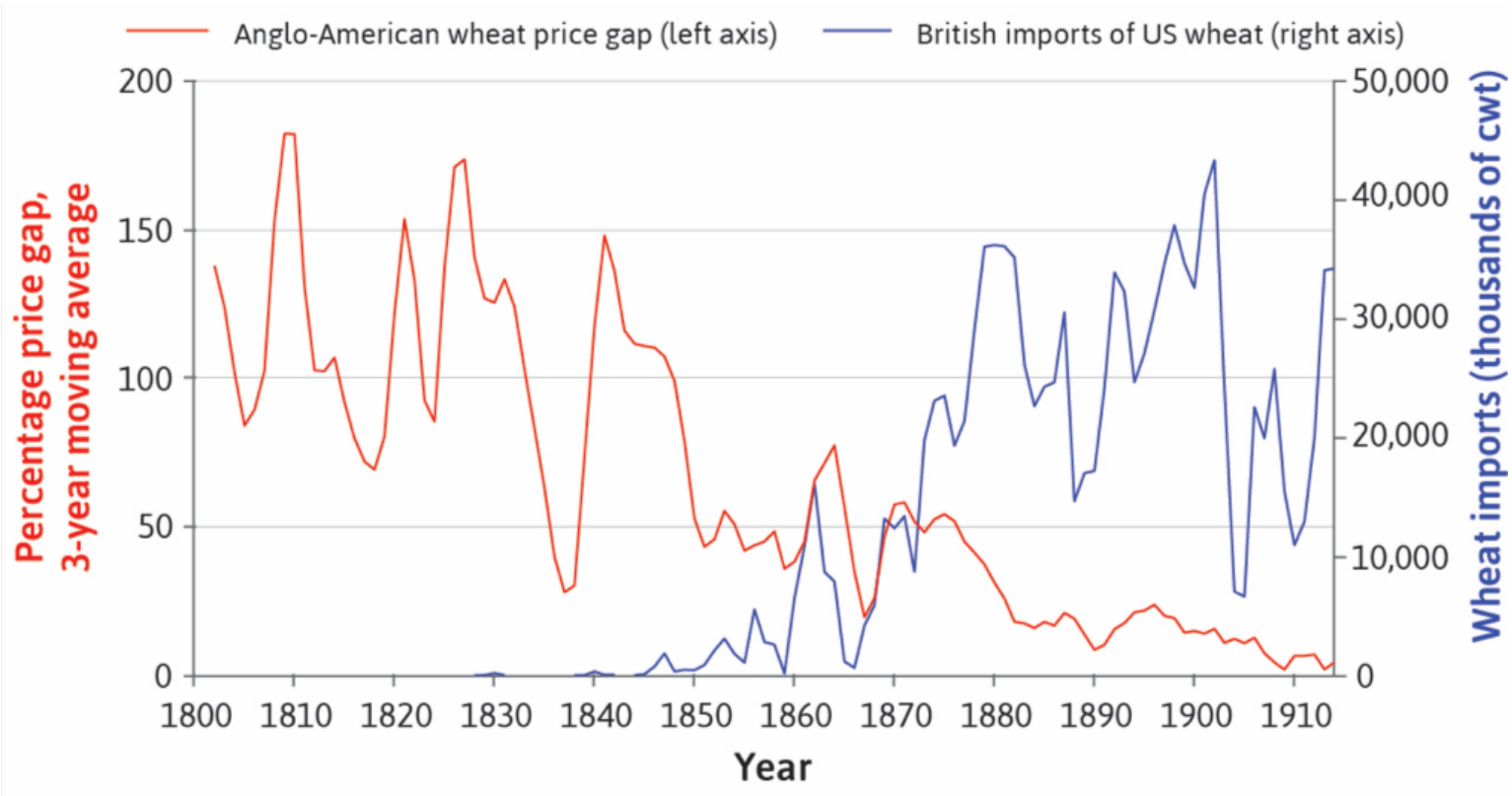
Price gap	Difference in the price of a good in the exporting and importing country
Arbitrage	in competitive equilibrium the price gap should equal the sum of all trade costs

Price gaps between countries have generally declined over time, while the volume of goods traded has generally increased.

Anglo-American wheat trade (1800-1914)

Before 1840 price gap volatile

After 1840 shipping cost ↓, price gap ↓, wheat import ↑



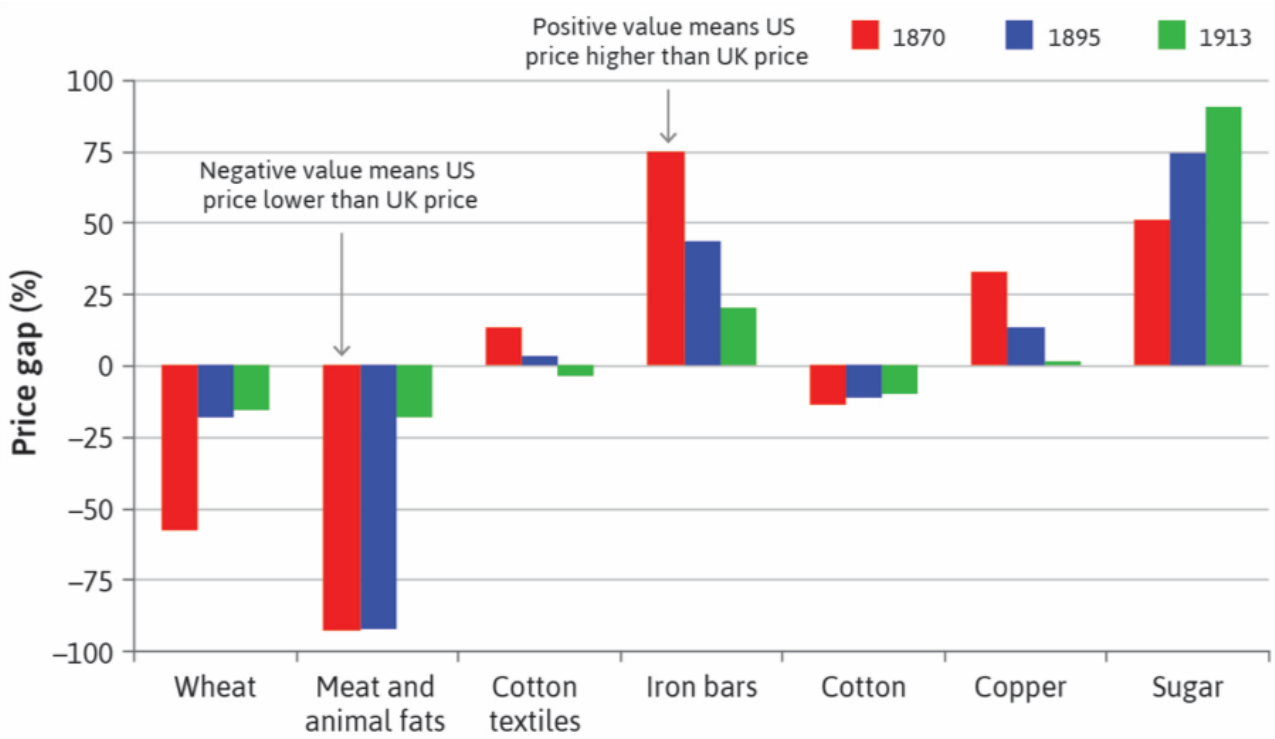
The *wheat price gap* started declining was volatile before 1840. After 1840 it started declining and the volume of wheat shipped started increasing. This is because the cost of shipping started falling as a result of introduction of steamships.

Anglo-American wheat trade (1800-1914)

For agricultural commodities British prices were higher

For industrial commodities American prices were higher

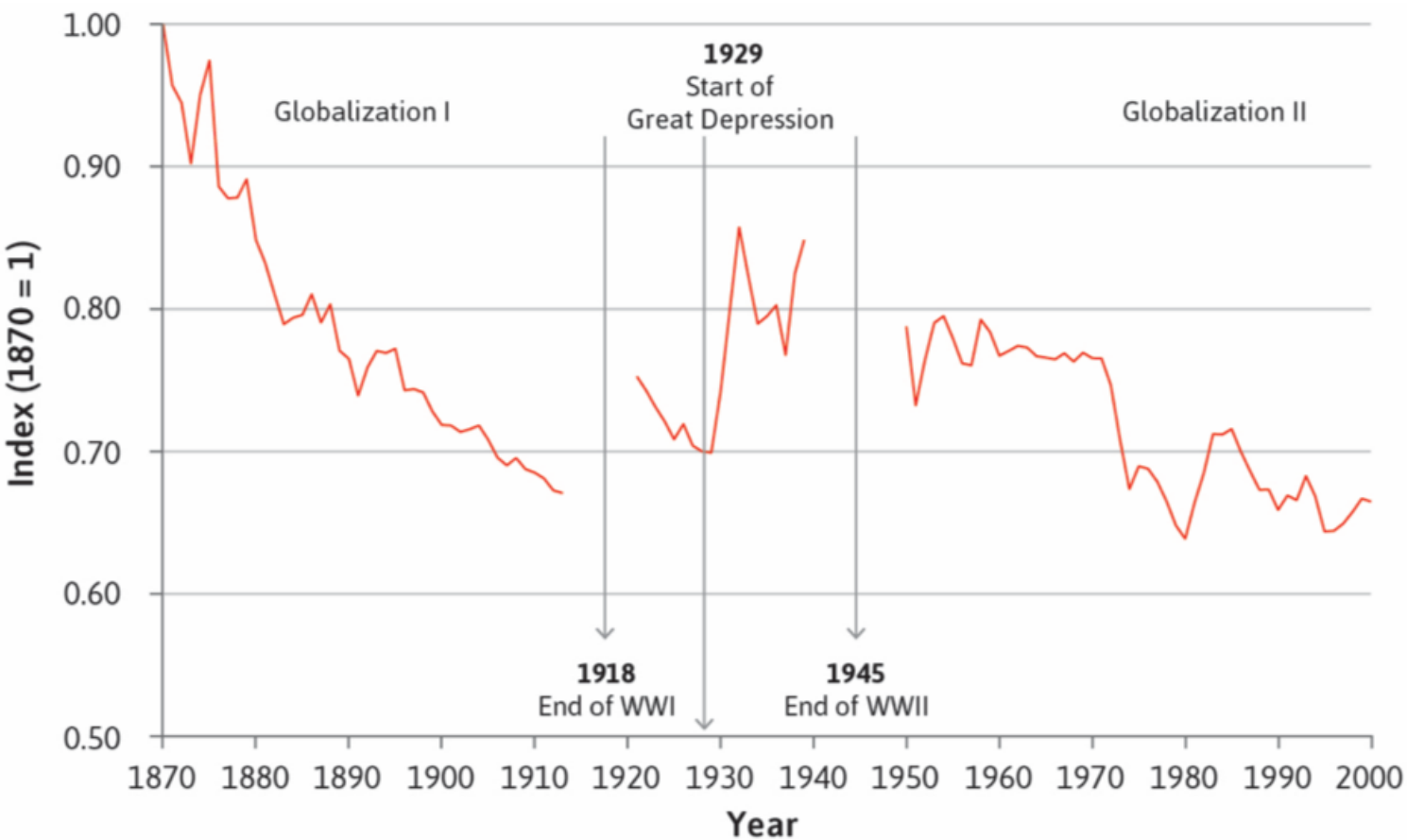
Nearly all prices fell over this period.



Trends in Globalisation

Globalization I before 1870 until 1914

Globalization II the end of the Second World War until now



Trends in Globalisation

Globalization I	before 1870 until 1914
Deglobalization	increasing trade costs during *The Depression*
	partly due to protectionist policies aimed at protecting domestic employment (tariffs and quotas on imports)
Globalization II	the end of the Second World War until now

Integration of Capital Markets

If a country has an *export surplus* (it exports more than imports), it is left with foreign currency as a result of its export surplus.

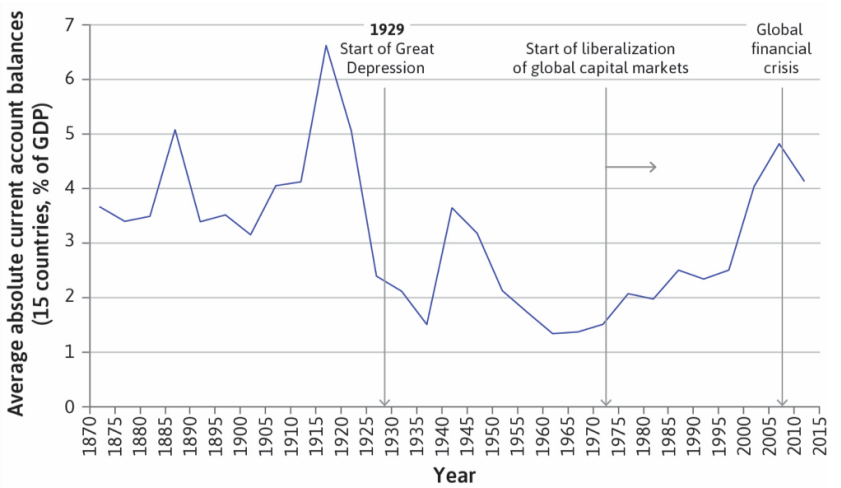
- The foreign currency can either *increase the reserves of the central bank* or is *invested abroad*.

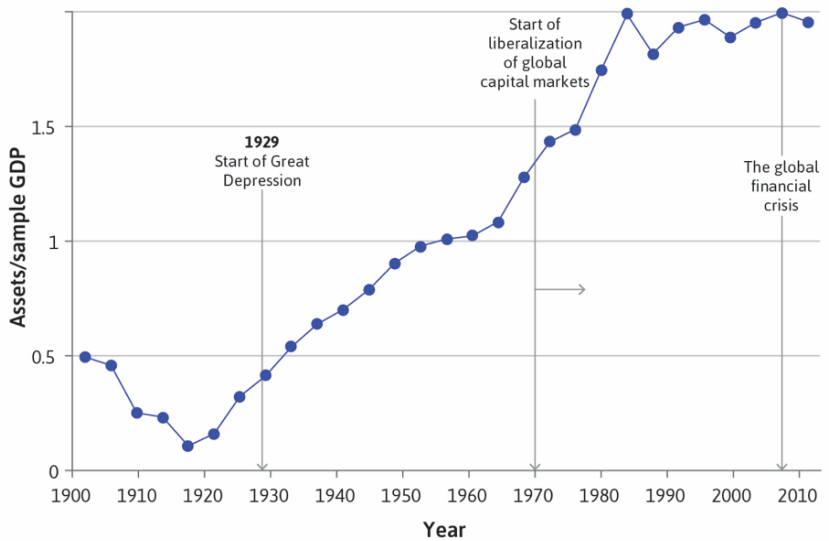
Current Account (CA)	exports – imports + net investment
Current Account (CA) deficit	Country is borrowing (receiving net capital flows)
Current Account (CA) surplus	Country is lending (net capital outflow)

Foreigners pay for exports in foreign currency (e.g. dollars). Domestic consumers pay for goods in domestic currency (e.g. Sterling). An export surplus simply means the country sells more abroad that it buys from abroad. This results in a surplus of foreign currency (e.g. dollars). The foreign currency can be used to either increase the reserves held by the Central bank (in case the domestic currency needs to be supported during a period of crisis) or can be used to buy foreign assets like foreign stocks and bonds (Portfolio Investment) or foreign physical assets (Foreign Direct Investment).

Trends in globalisation of capital markets

- Historically, increased trade resulted in larger *current account* imbalances for countries across the world
- Countries that trade more also tend to borrow and lend more
- International asset holdings increased over the 20th century



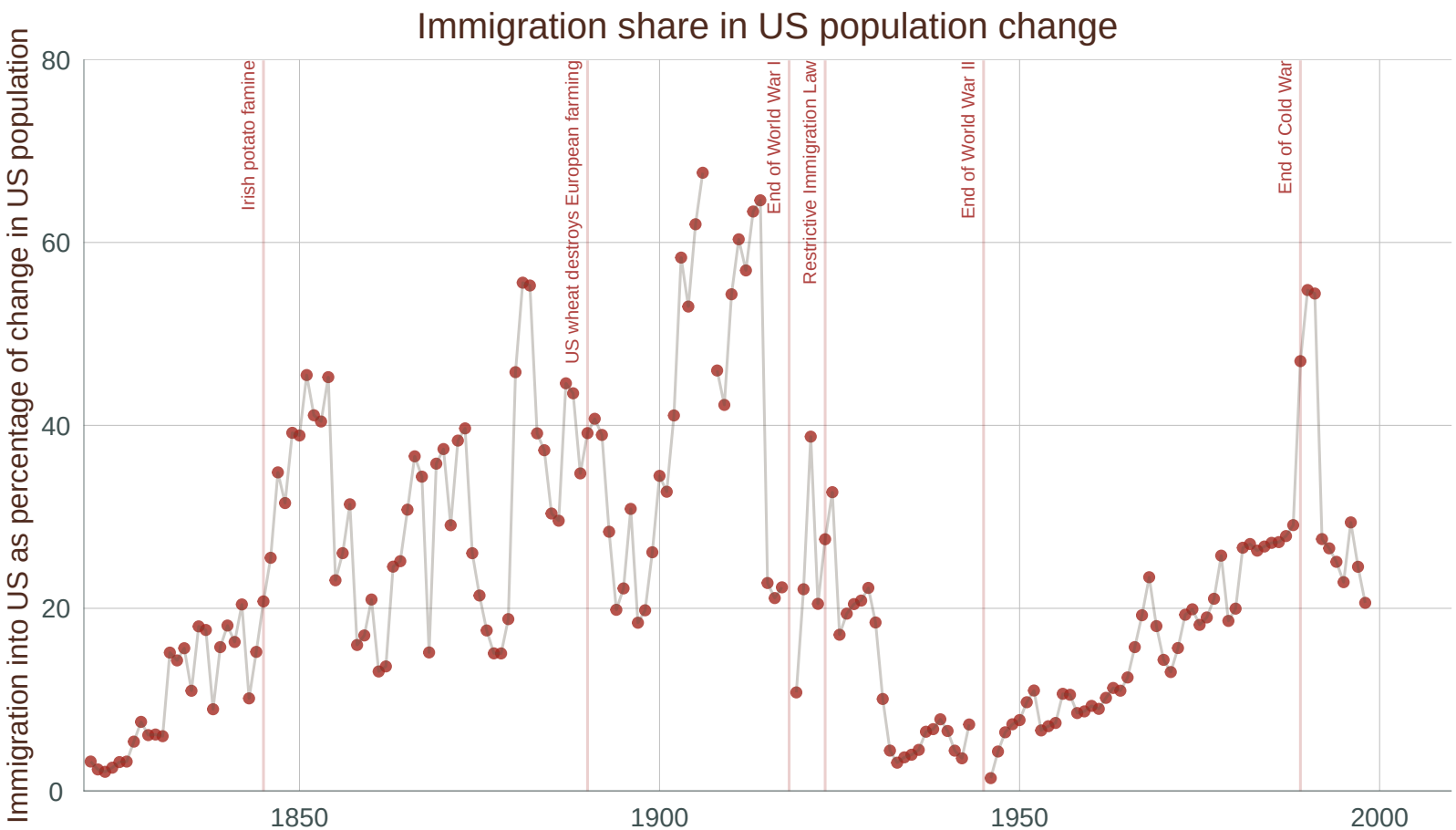


The graph on the left shows how aggregate trade balances have increased during globalisation phases and decreased during the de-globalisation phases. Simply put, this is graphs reflect the output market, i.e., the market in traded goods are services.

The right graphs show how the second phases of globalisation have both resulted in and facilitated the free flow of financial capital. This graph reflects the free flow of capital through the global capital markets. The increasing sophistication of capital markets means that savers from any part of the world can invest in entrepreneurial projects in another part of the world. In principle, it shows allow marginal capital from across the world to be equalised. In practice, information problems mean that people invest in herds, i.e., where people have obtained some information because others have invested. It may seem counter-intuitive but the cost of acquiring real and useful information can be very high. The cost of transmitting information has decreased but the cost of acquiring information remains high.

Labour markets integration

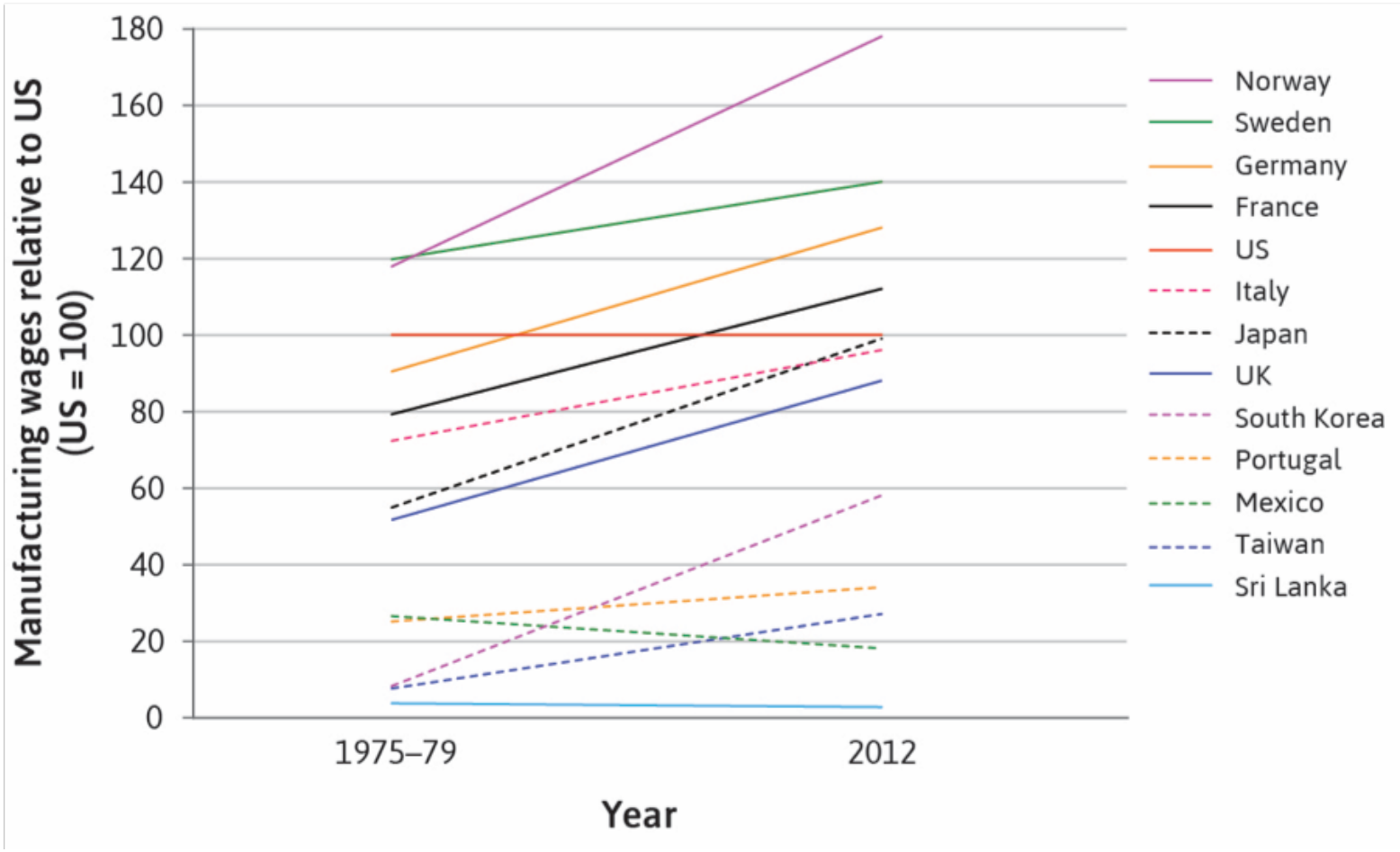
Fewer advances in labour market integration than goods or financial market integration due to immigration barriers.



Immigration population periodically increases, but those increases don’t last for long.

Labour markets integration

Wages still differ across countries due to migration costs.



Capital is inanimate and hence its flow only impeded by the restriction put in place by nation states. Labour on the other hand is more complicated. Wage differentials are just one of the motivation for moving from one country to another. People have a strong preference for their own language and a strong affinity for their own community.

There have to be strong push or pull factors in place to overcome these preferences. The pull factors are usually wage differentials. A high enough wage differential overcomes the reluctance to move. Given the large wage differentials between developed and developing countries, there is flow of labour from the poorest countries to the richest countries. The push factor is often some kind of conflict that makes it impossible for a person or family to stay. They have no option to move. Of all the dimensions of globalisation, immigration is the most controversial one.

Specialisation

In *autarky*, the nations are self sufficient and produce everything on their own

An *open economy* has an incentive to nations **specialise**

Specialisation: when an entity produces a narrower range of goods than it consumes, acquiring the rest through trade

Reasons for **specialisation** include:

Comparative advantage: in producing particular set of goods

Economies of agglomeration: cost reductions from locating close to other firms in similar industries

Economies of scale: cost advantages from producing more

In autarky, the economy has to produce everything for itself. Naturally, there would be no specialisation. As we see below trade offers an opportunity to specialise and expand the range of goods that a country can consume. Specialisation also comes as a cost as we see below.

Comparative Advantage

A country has an *absolute advantage* in a good if it can produce the output using fewer inputs than others

A country has a *comparative advantage* in the good where it has the greatest absolute advantage

- A country may not have absolute advantage in any goods but it will always have a comparative advantage in some good
- Trade is mutually beneficial when countries specialise in the good they have a comparative advantage in.

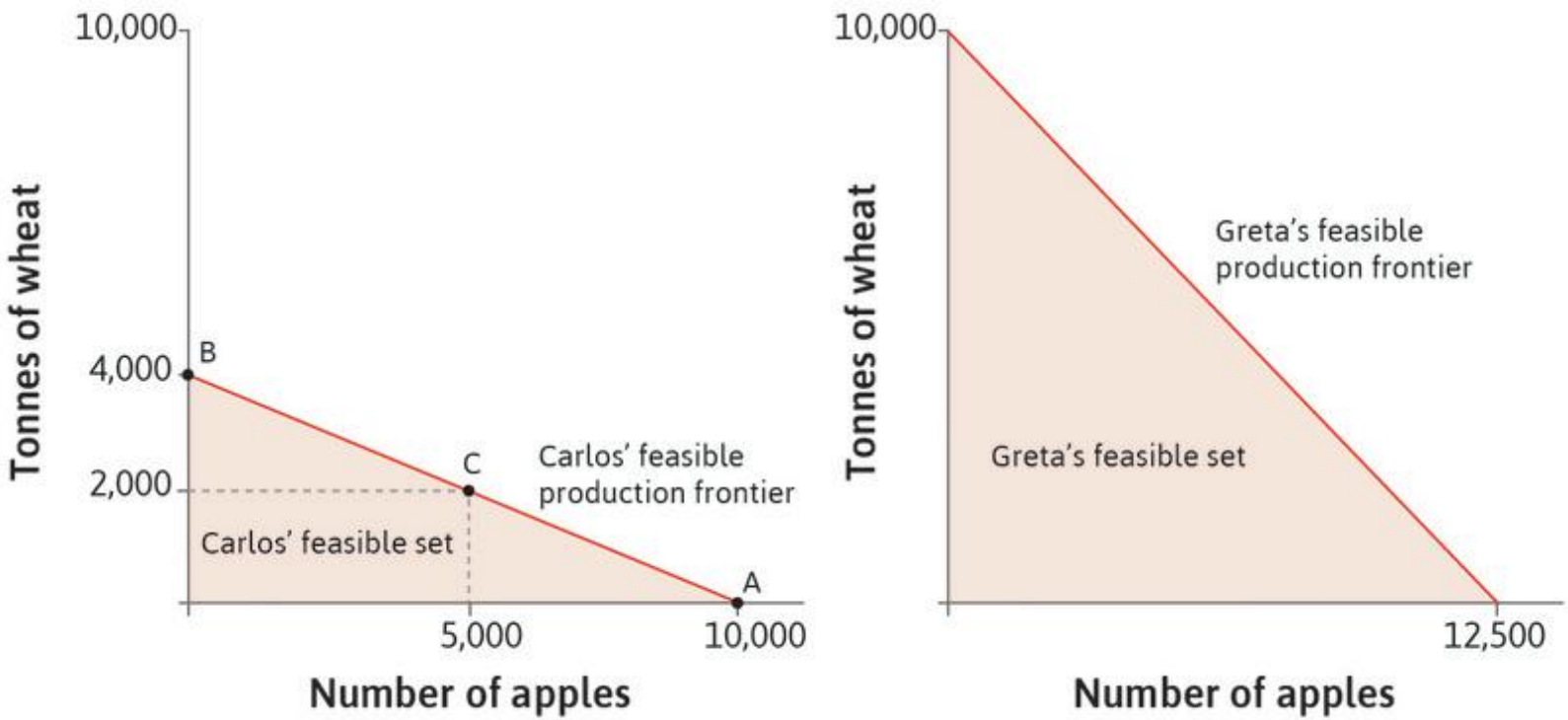
The difference between comparative advantage and absolute advantage seems a bit confusing at first but an example should help. Let's imagine a situation with two tasks and two actors. The actors are a lawyer and a secretary she hires. The two tasks are typing and "lawyering", i.e., practising law. Let's also imagine that the lawyer has an absolute advantage in both tasks as compared to the secretary, i.e., the lawyer makes £400 an hour while working as a lawyer and types at 80 words per minute. The secretary is not trained as a lawyer, so can only £0 per hour as a lawyer and types at 60 words per minute. The lawyer may have an absolute advantage in both tasks, i.e., *lawyering* and *typing*.

The secretary does not have a comparative advantage in either task. Yet, the secretary has a comparative advantage in typing, i.e., she is better at typing than she is at lawyering.

Should the lawyer and secretary trade. The trade, in this case, is Lawyer hiring the secretary to type for her. The answer is yes if she can hire the secretary for less than £per hour. Let's say the lawyer hires the secretary for £100 per hour. They both benefit from this arrangement. Every hour the lawyer is freed up from typing, she makes a surplus of £300$(= 400 - 100)$. The secretary makes £100 typing instead of making 0 £from lawyering. It is mutually beneficial for them to trade. This is exactly the situation in the world economy. Given the prevalence of new technology in production, the US has comparative advantages is most things. Yet, it is beneficial for the US to trade with the rest of the world.

Comparative Advantage

	Production if all time is spent on one good, per hectare of land
Greta	1,250 apples or 100 tonnes of wheat
Carlos	1,000 apples or 40 tonnes of wheat



Carlos lives on Apple island and Greta lives on Wheat island. Both islands are of equal size and have 100 hectares that can be used for agriculture, i.e., either produce apples or wheat.

If Carlos spent all his time on producing apples, he would produce 1000 apples per hectare. If he spent all his time on wheat, he would produce 40 tonnes of wheat per hectare. If Greta spent all her time on producing apples, she would produce 1250 apples per hectare If she spent all her time on wheat, she would produce 100 tonnes of wheat per hectare.

Following on from the last slide: It frees up its factor input to produce things that they are best at, i.e., they have a comparative advantage in. Even though iPhones are designed in Silicon Valley, the physical production takes place in China. Freeing up resources from production and specialising in designing creates a surplus for the US in principle. In principle, it will be beneficial for the US if this surplus is shared with the people negatively affected by the manufacturing of the iPhone to move to China. The natural way to do so would be through redistribution (as in the Nordic countries) or by funding high-quality public goods likely subsidised education and health care. In practice, the benefits are not shared through either channel and as a result inequality has increased over time.

Comparative Advantage

An island has a *comparative advantage* in producing a good when it is relatively cheaper in their economy (in the absence of trade).

Island	Apple (Carlos)	Wheat (Greta)
Land (in hectares)	100	100
Production per hectare per year		
Tonnes of wheat produced	400	1,000
Number of apples produced	1,000	1,250
Relative prices		
Relative price of wheat per apple	$\frac{1,000}{400} = 2.5$	$\frac{1,250}{1,000} = 1.25$
Relative price of apples per tonne wheat	$\frac{400}{1,000} = 0.4$	$\frac{1,000}{1,250} = 0.8$

Price of wheat in terms of apples is 2.5 for Carlos and 1.25 for Greta.

Wheat is cheaper for Greta to produce on the wheat island.

Price of apples (in terms of wheat) is 0.4 for Carlos and 0.8 for Greta.

Apples are cheaper for Carlos to produce on apple island.

Comparative Advantage

Island	Apple (Carlos)	Wheat (Greta)
Total production		
Total tonnes of wheat produced	0	10,000
Total number of apples produced	10,000	0
Apples exported	*4,000*	
Wheat exported		*2000*
Apples consumed	6,000	*4,000*
Wheat consumed	*2000*	8000

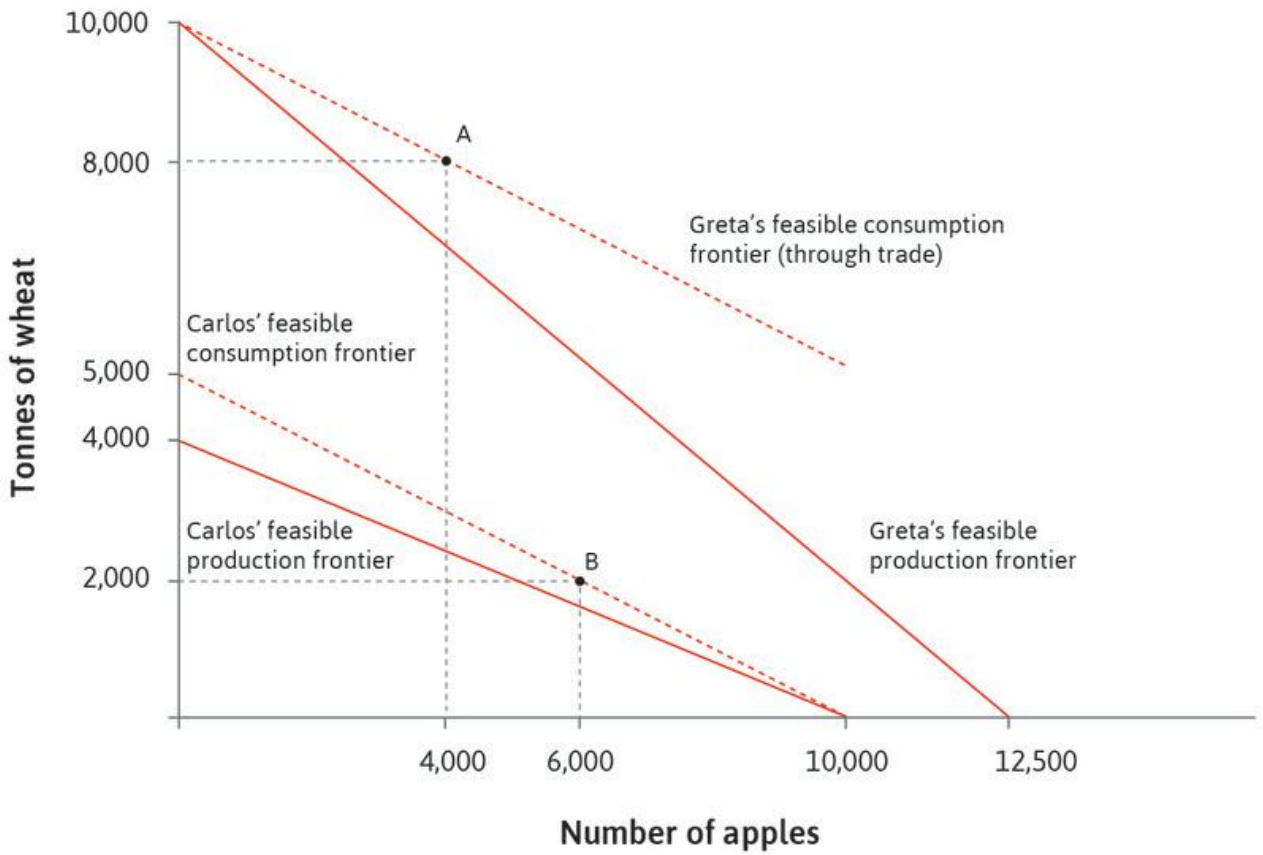
Carlos has a comparative advantage in apples and

Greta has a comparative advantage in wheat

Apples are comparatively cheaper on apple island and wheat is comparatively cheaper on the wheat island. Hence, *Carlos has a comparative advantage in apples* and *Greta has a comparative advantage in wheat*.

Comparative Advantage

With trade, *Carlos specialises in producing apples* and *Greta specialises in producing wheat*. Both of their consumption frontiers are above their production frontiers, so they are both better off



The solid red lines are Carlos and Greta's feasible production frontier under autarky, i.e., the situation where they are self-sufficient and don't trade. The dotted lines show how their feasible production frontier will move out if they were to trade at the relative price of wheat (in terms of apples) of 2.

Carlos will specialise in apples, produce 10,000 tonnes, consume 6000 and export 4000.

Greta will specialise in wheat, produce 10,000 tonnes of wheat, consume 8000 tonnes and export 2000 tonnes.

It should be clear that both Carlos and Greta end up consuming more than they would have in autarky.

Capital and Labour intensity

Capital intensive good — *requires a lot of capital* and relatively less labour to produce, *e.g., aircraft*

Labour intensive good — *requires a lot of labour* and relatively little capital to produce, *e.g., consumer electronics*

- The principle of comparative advantage is often used to analyse where capital intensive and labour-intensive goods are produced.

Countries	*Capital*	*Labour*	Comparative advantage
Developed	*cheap*	*expensive*	Capital-intensive goods
Developing	*expensive*	*cheap*	Labour-intensive goods

As we have discussed in earlier lectures, developed countries are relatively abundant in capital and developing countries are relatively abundant in labour. Put another way, in developed countries, workers have plenty of capital to work with. This means that capital is relatively cheaper in developed countries. The logic is simply that if capital is used more intensively in developed countries, its marginal product drops relative to the marginal product of labour. In developing countries, workers lack sufficient capital. This implies that labour is relatively abundant and used more intensively in developing countries. Thus, labour has a relatively lower marginal product as compared to capital and is thus relatively cheaper.

The assumption in the discussion above is that each factor earns its marginal product, something we discussed early on in the course.

A good can be produced in either a capital intensive way or labour-intensive way. For example, if a shirt is produced with capital-intensive technology, it is produced using plenty of machines. If it is produced using labour-intensive technology, it is produced mainly by hand.

Given their different endowments and resulting prices, developed countries tend to specialise in capital intensive goods and developing countries specialise in labour-intensive goods.

Impact of trade: Example

Let's assume there are only 2 goods in the world:

- passenger aircraft (capital-intensive) and
- consumer electronics (labour-intensive).

The US is relatively capital abundant, whereas China is relatively labour abundant

- specialisation according to factor endowments.

If US export capital intensive good to China and China exports labour intensive goods to US

- Returns to capital increase in US
- Wage increases in China

Trade has allowed the US to specialise in capital intensive goods and China to specialise in the labour-intensive goods. This means that without trade and specialisation, the US would have been less capital intensive and China less labour intensive.

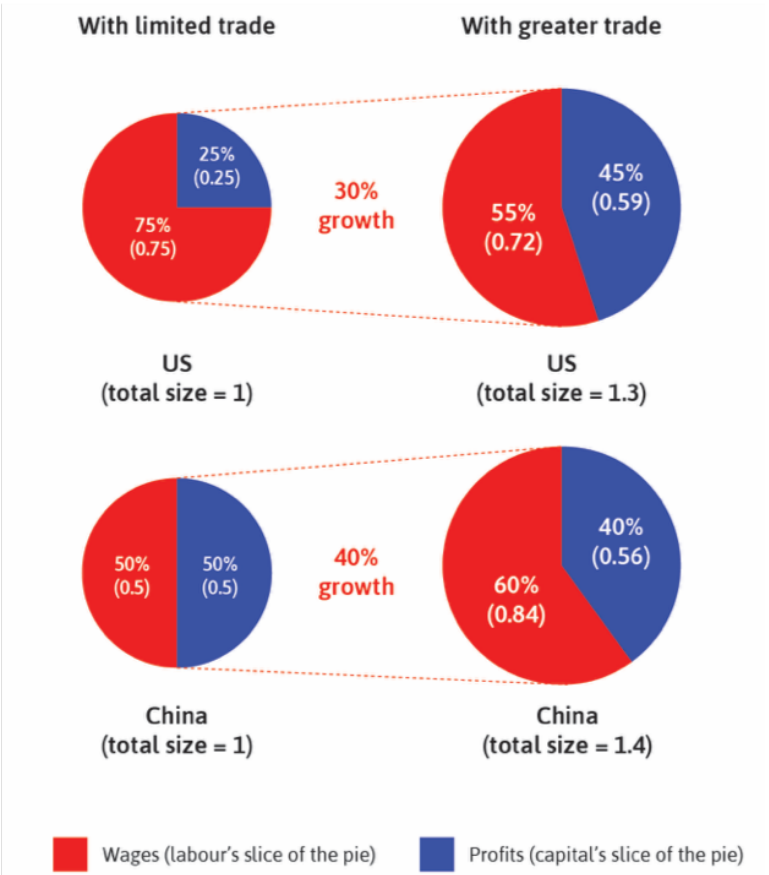
Without trade, the US's marginal product of capital (and the price of capital) would higher than China's. Conversely, without trade, China's marginal product of labour (and price of labour, i.e., wage) would be lower than rest of the world.

It follows that with trade US's price of capital falls as it productions process becomes more capital intensive. Similarly, China's wage increases as it becomes more labour intensive due to trade.

In the next slide, we construct a simple example which would help us understand the impact trade on the US and Chinese society. The size of the circle represents the size of the economy. The pie on the left of the economy represents the size of the economies before-trade and the pie on the right represents the size of the economy after-trade. To help the comparison, we set the size of both economies at 1 before-trade.

Impact of Trade

Winners in the US	*Owners of capital*	inequality should *rise*
Winners in China	*Workers (higher wages)*	inequality should *fall*



With limited trade, labour share is 75% in the US and 50% in China with the rest of the share going to capital. With trade, two things occur simultaneously. First, the price of the relatively abundant factor increases with trade. Thus, the relative price of capital increases in US and relative wages increase in China. Second, both economies grow as a result of trade opportunities, hence there is an additional size-effect. In this case, China starting with a smaller base grows by more, i.e., 40% and the US starting with a larger base grows by less, i.e., 30%. As wages increase, trade has reduced the relative share of capital and increased the relative share of labour in China. The labour share has increased from 50% before trade to 60% after trade. Yet, since the total size of the economy has by 40%, both labour and capital earn more in absolute terms.

Total labour earnings have increased from 0.5 to 0.84. Total capital earning has increased from 0.5 to 0.56. The US story is different. US worker's share has gone down both relatively and in absolute terms. In relative terms, it was 75% before trade and is 55% percent after trade. In absolute term, it was 0.75 before trade and is 0.72 after trade. Not only has the capital share increased due to trade, but the labour has also lost out in absolute terms because the size of the economy has not grown sufficiently to maintain its share. A little bit of calculation should show you that if the US economy had grown by 6.4% more than it has currently, the workers would not be worse off. That is, if the size of the circle on the right-hand side was 1.364, the workers would have got 0.75 after trade.

Winners and Losers: Long Run

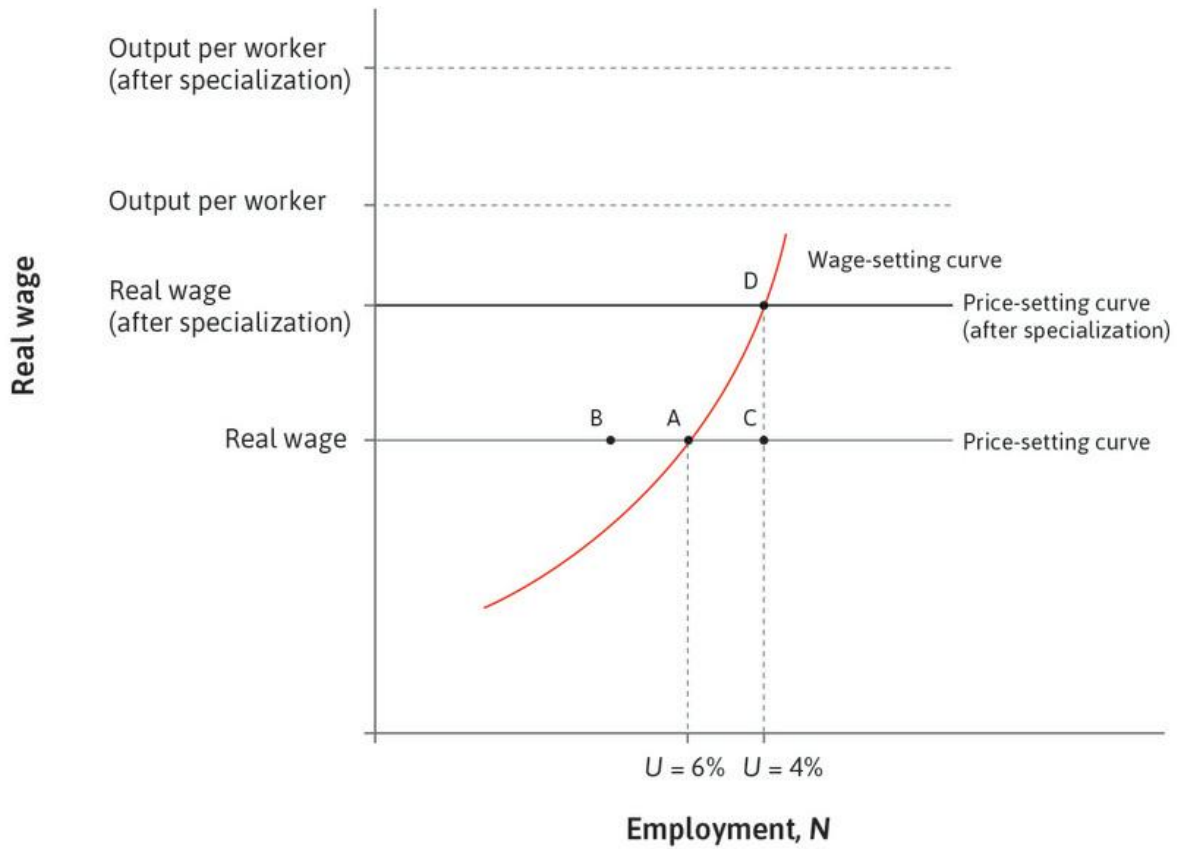
Trade leads to specialisation, which leads to increased productivity in the goods the country specialises in.

- Specialisation shifts the price-setting curve upward:
  - In the short run, jobs are destroyed.
  - In the medium run, growth in export industries creates new jobs.
- Long-run adjustment process depends on how much wage-setting curve shifts as a result of trade.

As a country specialises, it starts producing a smaller range of goods. It is more productive in the goods it does specialise in. High productivity essentially means high output per worker. If the firm owners' mark up remains constant, this would lead to the price-setting curve shifting up.

Impact of Trade

Trade shifts up the price-setting curve. US is producing less consumer electronics now ($A \rightarrow B$) and more aircrafts ($B \rightarrow C$). Increased demand for labour leads to higher wages ($C \rightarrow D$).



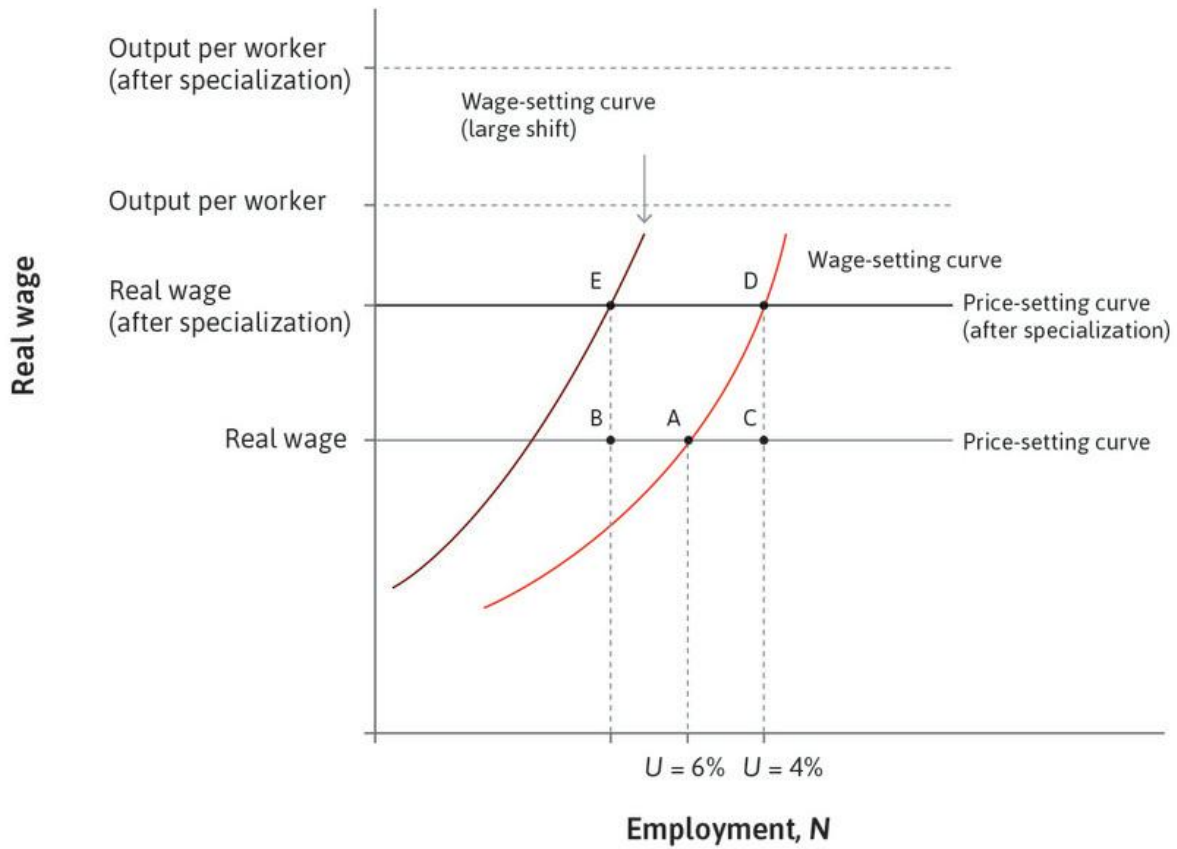
With trade and specialisation, some jobs are destroyed moving the economy from A to B and another set of jobs are created moving the economy from B to C. If the new jobs created are greater than the old jobs that are destroyed, then the economy moves from A to C.

New jobs are more productive in the economy because they have resulted from trade led specialisation. The higher productivity from its definition means higher output per workers. If the firm owners' markup remains constant, the price-setting curve shifts up. If the wage-setting curve remains unchanged, the economy moves from A to D in long-run. This higher wages increase and lower unemployment in the economy.

This is the case when the trade is unambiguously beneficial for the economy. The benefits from trade critically depend on the increase in productivity and no change in the wage-setting curve. As we see below, under certain conditions workers and unions that represent them may ask for higher wages as a result of trade.

Impact of Trade

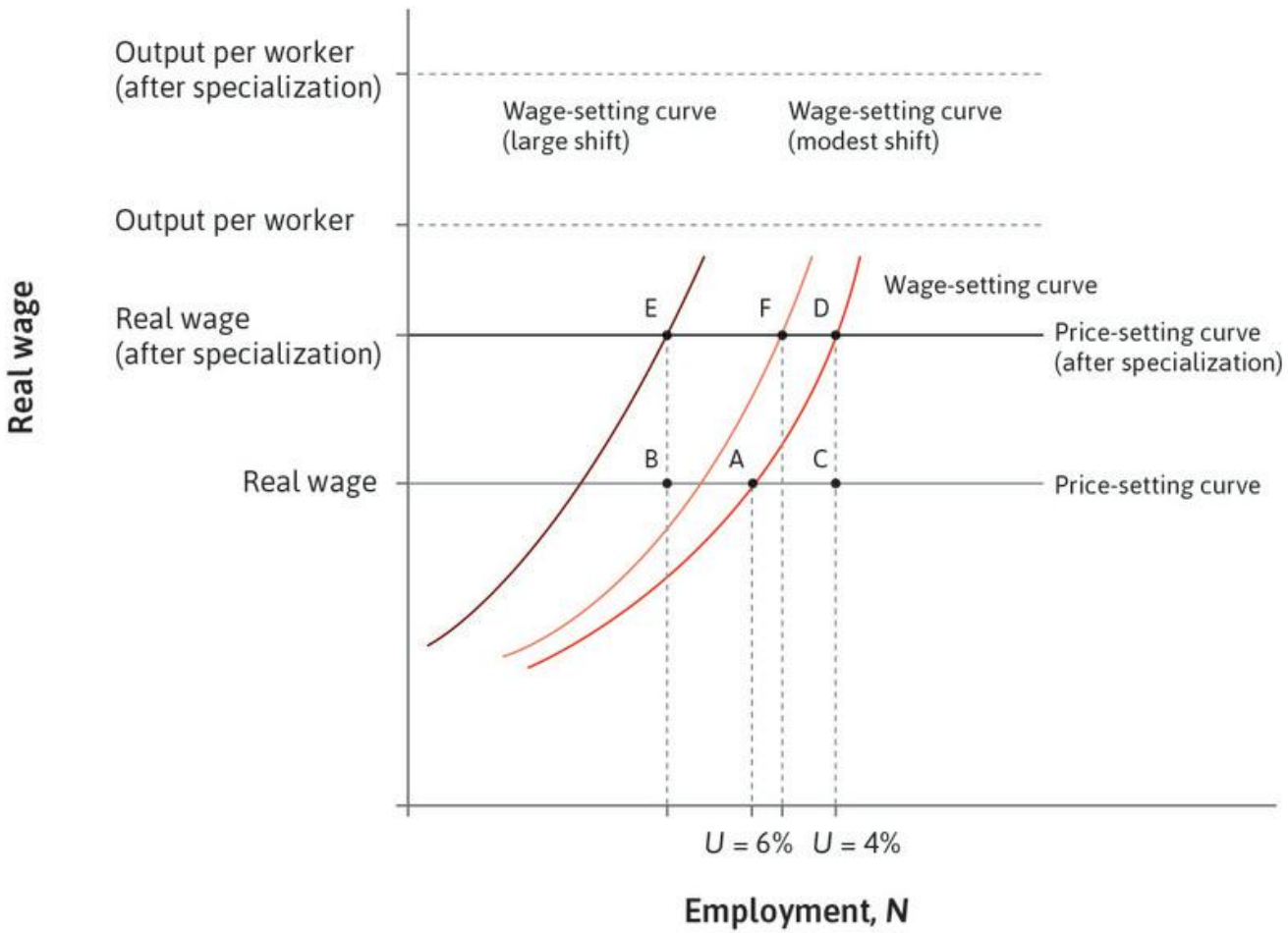
Increased job turnover leads to workers asking for more generous unemployment benefits, leading to wage-setting curve shifting left and leading to higher unemployment ($D \rightarrow E$).



This is the case where even though some jobs are destroyed and others that are created, the workers and Unions ask for higher real wages, shifting up the wages setting curve in the process.

Impact of Trade

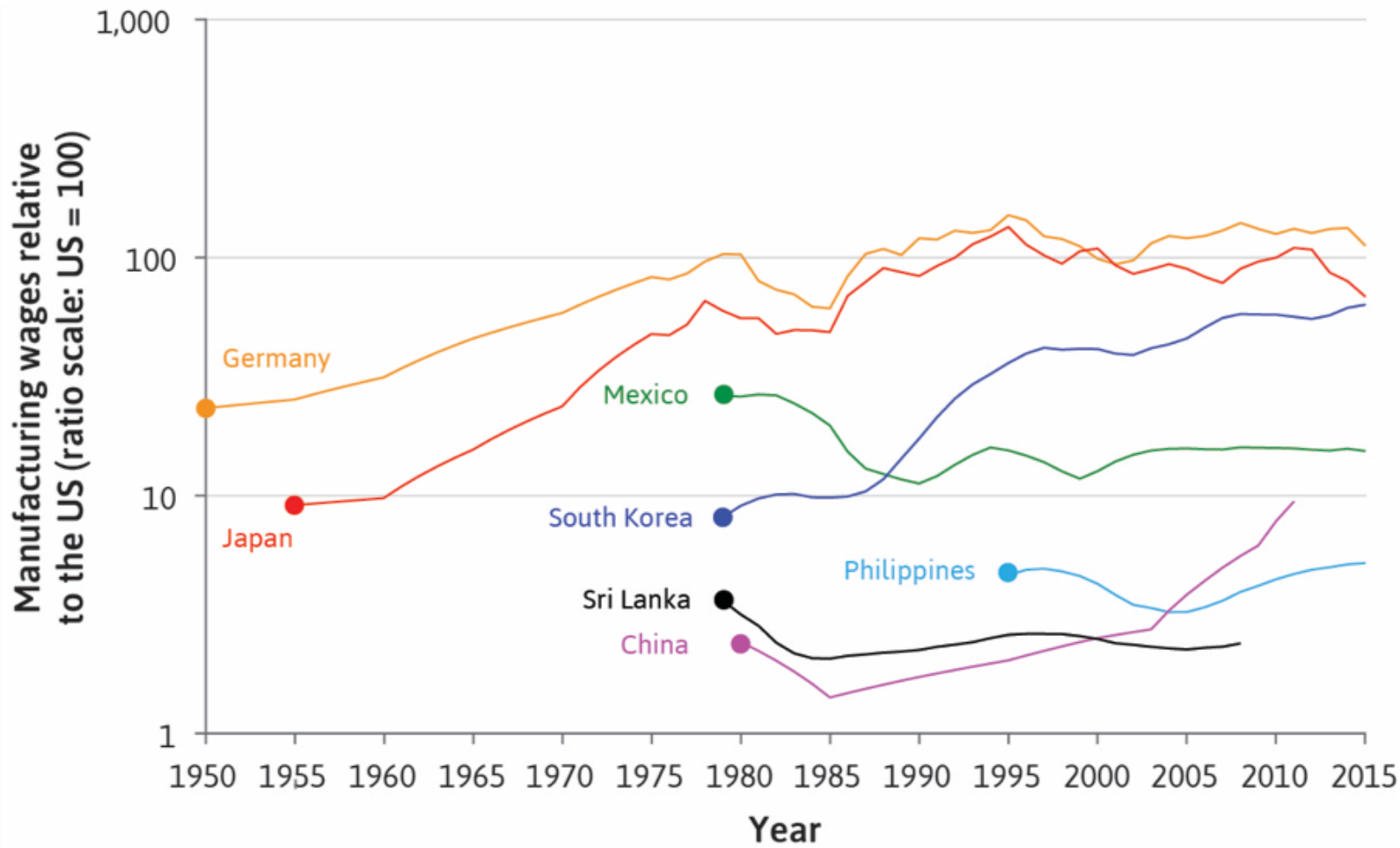
A more modest shift in wage-setting curve would lead to lower unemployment ($D \rightarrow F$).



If the wage-setting curve shifts up by a modest amount, then the increase in unemployment due to trade would be limited. Whether the demands for wage increases are modest of more strident depends on the institutions that the country puts in to support the people who lose their jobs and help them retrain and transition to the new jobs that are created in the economy as a result of trade. A coal miner may not be retrained as a software engineer but she or he can be retrained as a call-centre worker or someone working in the Amazon warehouse. Hence, how far the wage-setting curve moves up depends on the internal policies that are in place in the country.

Impact of Trade

Manufacturing wages relative to the US (1950-2015)



The striking things about this graph is that despite its high inequality, the manufacturing wages in the US remain relatively high. While Germany and Japan has closed up the gap, other countries still have a long way to go. The opportunity of trade based on comparative advantage remains high in a world economy where there is a huge variation in manufacturing wages.

Globalisation and economic performance

- Some countries have benefitted more from globalisation than others.
- Economic success depends on how well policies have managed growth due to economic integration.
  - During industrialisation, Germany and the US achieved high economic growth despite high manufacturing tariffs.
  - Scandinavian countries prospered through openness, with policies that help displaced workers.

With globalisation, the world is trading more than ever before. Capital is flow across the world more freely than ever before, leading to expansion of capital markets. The flow of labour across the world ebbs and flow. We are closer to hyper-globalisation than we are to autarky. A nation state can advantage of trade opportunities offered by world economy. Trade allows a country opportunity to specialise. Concomitantly, some jobs are created and others destroyed. The country would naturally specialise in goods and services where its productivity (or output per worker) is high. These are the new high productivity jobs that are created to replace the lower productive jobs. This pushes up the price-setting curve (if the firms' markup does not change).

Summary

- Economies have become more integrated over time
  - Specialisation and trade can be mutually beneficial
  - Winners and losers in the short run, both within and between countries, depending on relative factor abundance
  - All parties can benefit in the long-run with good policymaking

Whether it results in lower or higher unemployment depends on the Unions and workers wage demands (Wage setting curve). Countries that facilitate the transition of labour forces from jobs that are destroyed to the new jobs that are created are the ones that are likely to fully reap the benefits of the trade. Countries that do not facilitate this churn would experience high unemployment and great deal of resentment towards the forces of change. Trade can be force for good if its a nation state puts appropriate guardrails that prevent it from running aground.