Driving over the peak, or a false summit? – speech by Alan Taylor

Given at National University of Singapore

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Speech

Thank you for your introduction and for the kind invitation to be here this week as the guest of the National University of Singapore and the Monetary Authority of Singapore.

It is a great honour and a pleasure to spend this week here as a visiting MAS Distinguished Term Professor in the Department of Economics at NUS, and I'd like to thank the university for their warm hospitality and all the work that went into organizing my visit.

In addition to my speech here today at the university's Lee Kuan Yew School of Public Policy, I have also been spending time at the NUS economics department, and on Friday I will be visiting the NUS East Asian Institute.

So special thanks there to my long-time economist colleagues, coauthors, and friends, Professor David Jacks and Professor Alfred Schipke for making all that possible.

In addition, this week I am also spending a couple of days at the MAS, and I would especially like to thank Managing Director Chia Der Jiun and Deputy Managing Director and Chief Economist Edward Robinson for making that part of my visit possible.

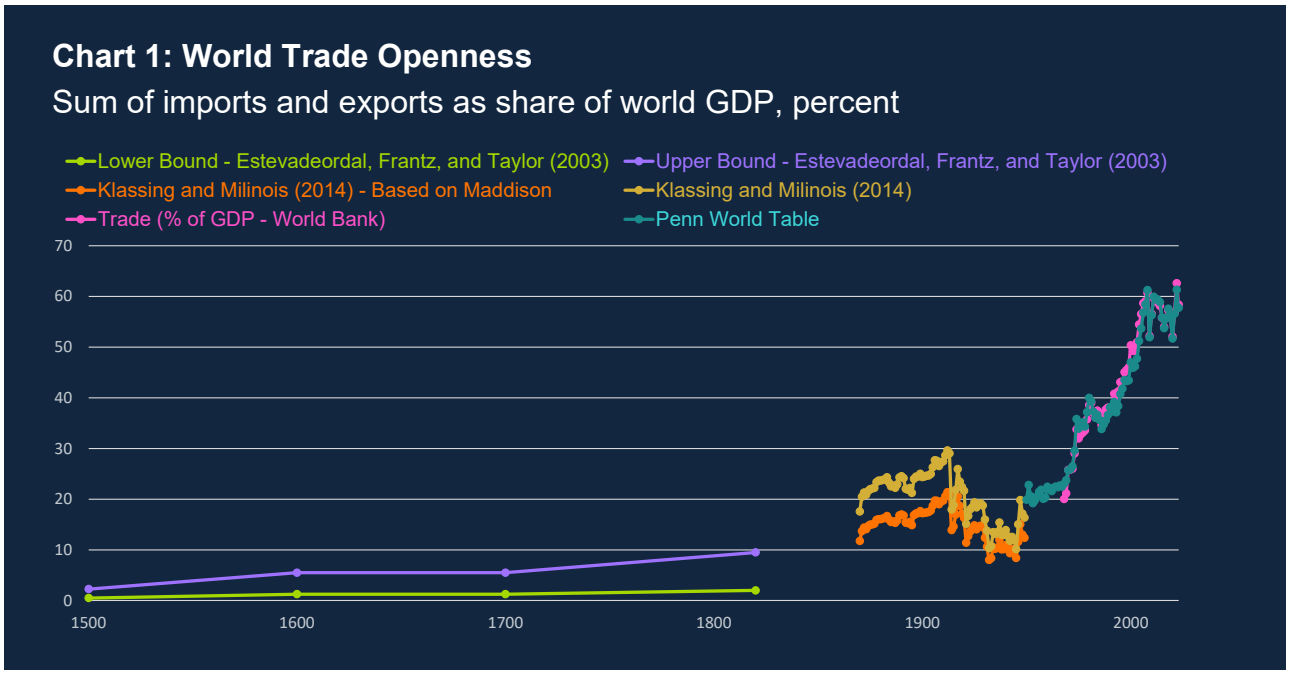
History

Today, I want to talk about an important and highly topical subject in economics: international trade and its evolution, past, present and future. Now the entire scope of economics is, in some sense, just the study of trade (in the sense of exchange), and this has been true throughout history. But my narrower focus is on the study of international trade, or what in ancient times, before the concept of nation states existed, we might call long-distance trade. As a shorthand, we could also call it global trade, in contradistinction from local trade, the latter being within the nation state, or at short distance.

In the last decade, the patterns we have seen in the development of international trade have aroused considerable interest, or even alarm, not just within the small world of academic economists and policymakers but also, increasingly, in wider debates in media and across society. Increasingly, a view has been taking hold that globalisation might have peaked, or might even be going into reverse, with the fear that this might be detrimental for economic performance and our future prosperity.

The argument may be familiar, but to start with I think it should be placed in the broader sweep of economic history. How to think about where we are now is shaped by where we have come from and our understanding of how we got here. To give some empirical

perspective, **Chart 1** shows the ratio of imports and exports in the world to total global production back to early modernity.



Source: Estevadeordal et al. (2003), Klasing and Milionis (2014), World Bank (WDI), Penn World Table. Latest observation: 2023.

What do we see? Let me very quickly go through the timeline:

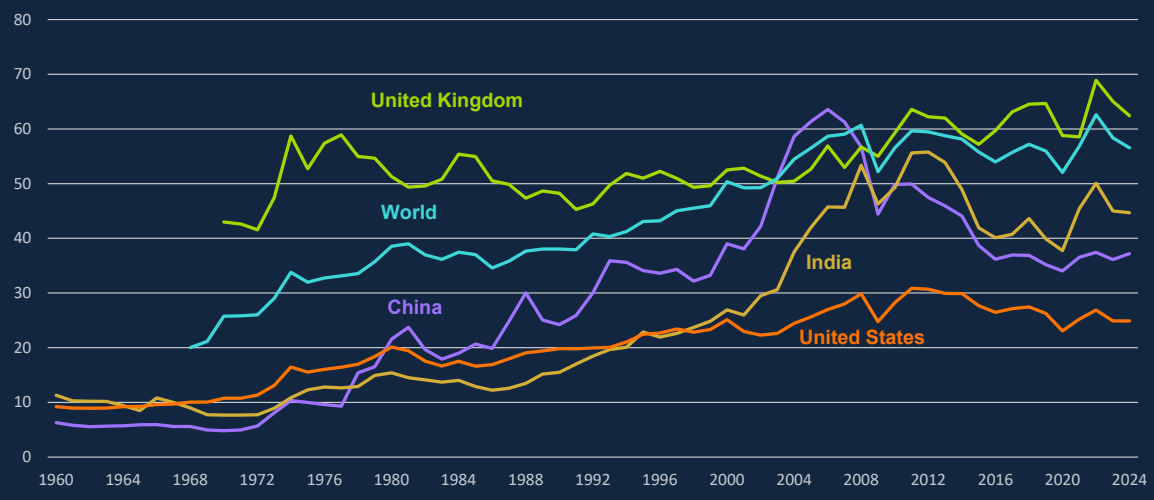
- **The valley of prehistory**: For most of human history exchange was local; notwithstanding the ancient and medieval trade networks of lore (around the Mediterranean, via the Champagne fairs, or along the Silk Road), few items, notably coinage and valuable goods and artifacts, moved long distances; economies at the time were overwhelmingly self-sufficient, so food, fuel, and most raw materials would be sourced within in a small radius or made within the household.
- **The foothills**: About 250 years ago we emerged from pre-modern history with very low levels of global trade, maybe at around 5% of world GDP or less according to very rough estimates (Estevadeordal et al., 2003); it was an age of discovery but it was also an age of colonialism, mercantilism and conflict; and, while innovations in shipbuilding enabled early long-distance trade, transportation technologies remained primitive; trade was stuck at a low level.
- **A gradual ascent**: Modernity brought acceleration and a step change in trade; from 1750 to 1913, trade gradually rose to around 30% of world GDP, obstacles to trade fell; transportation on land and sea advanced, mercantilism and protectionism went into retreat; and incentives to trade grew as starker forms of comparative advantage in technological and resource endowments emerged during the first era of globalisation.

- **The steep fall**: From 1914 to 1945 all of those trends reversed during two world wars and the Great Depression; the new barriers to trade were man-made not technological, and the first era of deglobalisation was a product of economic links persistently damaged by a combination of intense military conflicts, rising distrust, and unprecedented tariff and quota policies; trade fell all the way back to 1913 levels.
- **Back up to even higher ground**: After the Second World War up until the Global Financial Crisis of 2008, the global economy had six decades to repair itself and rebuild trade flows in the second era of globalisation; it did so without major wars and through a steady dismantling of trade barriers, helped along by GATT and WTO, and not least by the tailwinds of high rates of economic growth which lifted most if not all boats; relative to GDP, trade rose to unprecedented levels, around 60% of GDP circa 2010 (**Chart 2**).
- **High up, but level ground**: Since 2008, the trend halted and the prevailing narrative is that global trade has stalled again; some see another local peak, while others see another downswing, a possible second deglobalisation; growth has stuttered, conflicts over inequality have simmered, geopolitical tensions have flared, and the very recent rise in some tariff barriers marks a sharp direction of change after many decades of decline (**Chart 3**).

In **Chart 2**, we zoom in on trade in the post-war era. This chart gives a flavour of the heterogeneity across countries and trends over time. For example, the UK has always been a very open economy, while the US is relatively closed. Meanwhile, China and India began as closed economies but became open trading nations within one generation's lifetime. But here again, the recent levelling off in the trade to GDP ratio is a notable feature.

Chart 2: Trade Openness across countries

Sum of imports and exports as share of GDP, percent

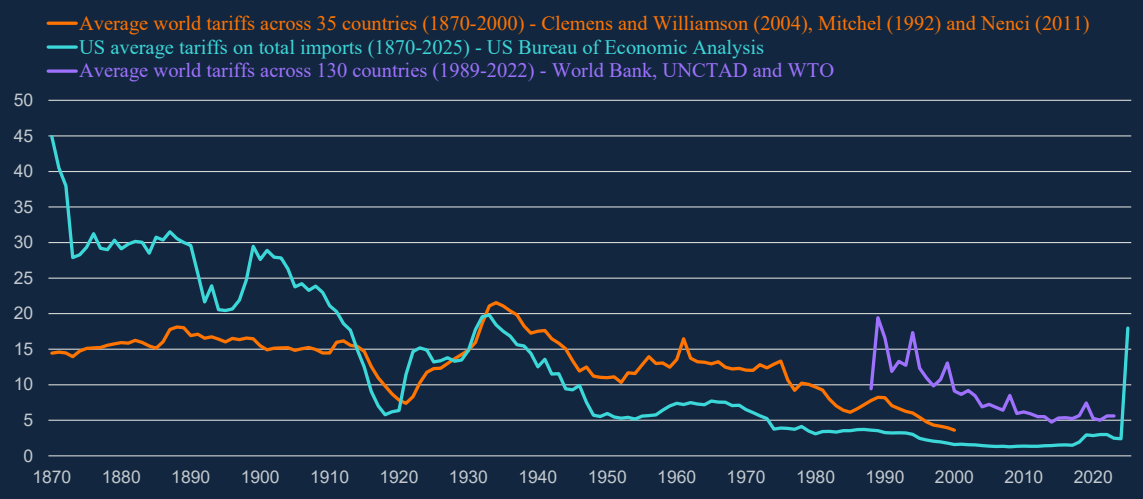


Source: National statistical organisations, OECD national accounts, and World Bank staff estimates (2025). Latest observation: 2024.

In **Chart 3** we see the evolution of world and US average tariffs since the year 1870. The very long run perspective shown here illustrates how large the recent change in US tariff policy has been compared to the past, even when we go back to the high Smoot-Hawley tariffs of the interwar period.

Chart 3: Average tariff rates since 1870

Percent of imports



Source: Average world tariffs (1870-2000) – orange line - extracted from Clemens and Williamson (2004); Mitchel (1992) and Nenci (2011), US average tariffs (1870-2025) – aqua line - from US Bureau of Economic Analysis and the Yale Budget Lab, Average world tariffs across 130 countries (1989 – 2002) – purple line - constructed using World Bank, UNCTAD and WTO data, with sample changes over time. Latest observation: 2025.

When an economic concept suddenly garners widespread attention, it is usually because people have the impression that the world has changed. This could be because a sudden and unusual crisis event has occurred or because there is a sense that a more gradual but inexorable change has gotten underway. But is this emerging consensus correct?

Given where we are now, to be prognosticating about the future direction of international trade is like being a mountain climber lost on a saddle point in dense fog. You know it's been flat for a while, but it is not yet entirely clear whether the next steps will lead you up or down.

So now, as is often the case in economics, inferences about turning points can be very much in the eye of the beholder, and it may take time to discern the true direction of travel. This not only, or even mainly, because there are imperfect data or disagreements about

which data to look at, leaving us unsure of the facts. It is because ceteris is never paribus, and there can frequently be many economic explanations and mechanisms consistent with our observations, even if we can reach a point where we agree on the facts.

For that reason, it helps to have some guidance from economic theory to help us understand what forces might be at work to account for the trajectory of international trade we have seen in the past, and then to help us anticipate what might be possible next.

Theory

So let us ask the key question. And it's basically the same question that I typically ask the students in my international economics class, in the first lecture of term, just to get things warmed up.

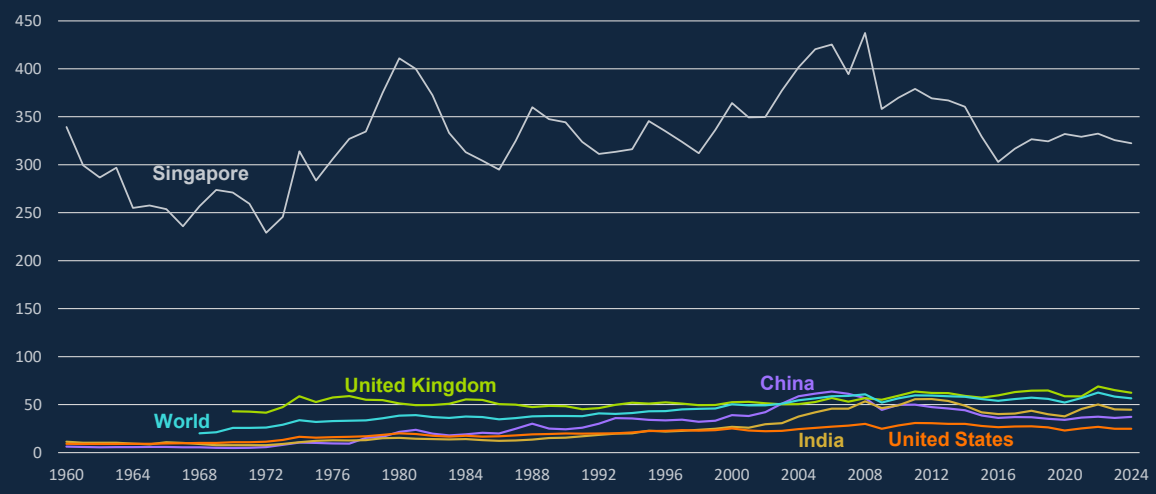
I ask: why might trade rise or fall as a share of GDP, and in particular, is there at any given time a 'natural' upper limit that restricts how high a level that ratio might feasibly reach?

And just to take an example, I will quite often prompt students to think a bit more by asking, as a follow up: do you think trade could ever be more than 100% of GDP?

Now, from the vantage point of the United States, where I teach, and looking at the recent and historical data, 100% seems big and so maybe that seems like a question with an obvious answer. But it is not, and of course the reason I wanted to bring up this little anecdote today is that I am delivering this speech in Singapore, where one imagines the same question does not elicit the same response. Because, as I am sure you are all aware, Singapore has a trade-to-GDP ratio of around 300% to 400% of GDP, and it has been at that level for decades (**Chart 4**).

Chart 4: Trade Openness across countries

Sum of imports and exports as share of GDP, percent



Source: National statistical organisations, OECD national accounts, and World Bank staff estimates (2025). Latest observation: 2024.

So maybe the answer isn't so obvious after all, and we should have a more open mind about not just the potential downsides but also the potential upsides, even now, to the trajectory of international trade.

Can everywhere be like Singapore? In ten years, or 100 years, or 500 years? Maybe in some places, maybe not everywhere, but we should try to understand why or why not.

At the very least we should go back to first principles and ask what really are the deep and fundamental economic drivers that determine the intensity of trade. What are the differences across locations that create conditions for mutually beneficial exchange? And, offsetting those forces, what are the main obstacles or frictions that operate to constrain or limit such transactions?

For the purposes of this talk, and to keep things compact, let me stack those deep drivers into five organizing themes, though, as we will see, they are not independent of one another and there are many channels of complementarity and feedback that flow back and forth between them:

1. Technology
2. Endowments, traditional and new (labour, capital, land/resources; human capital, intangibles)
3. Physical costs and infrastructure (private shipping, communications, connectivity)
4. State institutions and infrastructure (payments systems, contracting, rule of law, polity)
5. Policy-driven barriers specific to trade (monopolies, tariffs, quotas, non-tariff barriers)

Going through that list, I think it is useful to reflect on historical patterns, especially more recent developments, as we consider the future prospects. Taking that approach, leaves me, at least, with a more optimistic outlook than many. Here, to sum up, my main message can be boiled down into one paragraph, or one very long sentence.

Yes, in the short run, there is turbulence, with new headwinds showing up over the last decade, and notably in the last year, that have worked in the direction of slowing the growth of international trade relative to world GDP (specifically, in item 5); but, in the long run, we should not forget about all the other dimensions along which the growing incentives, matched with the growing possibilities for trade, might be steering us on a course towards deeper economic integration after the turbulence has passed (due to the still evolving forces in items 1 to 4).

And as is often the case, history speaks to this very problem of trends and cycles when it comes to globalisation: that is, the challenge of trying to distinguish between a true peak and a false summit.

We should here recall that period right after 1913, when the world economy disintegrated and the first wave of globalisation seen in the preceding era faded away. Even well-informed observers were at times worried and wistful, never quite sure those times would ever return again – the famous quote from Keynes[1] is overused but is just one example. And after 1945, policymakers charged with trying to put things back together were certainly apprehensive regarding the prospects of rebuilding a vibrant global economy, emerging from an era beset by distrust between nations, shocked by financial crises and wallowing in secular stagnation.

I think it is safe to say that, from the 1920s to the 1940s, anyone predicting the unrelenting growth of world trade leading to today's unprecedented peak levels of globalisation might have been regarded with a considerable degree of scepticism. And yet here we are, and we should look to the future with a suitably open mind, as we consider the possibilities for our world economy to become more integrated as all of these deeper economic determinants continue to evolve.

So let me take each of these determinants in turn.

Technology

The key insight of the first foundational model of international trade, the Ricardian model, is that trade is encouraged by spatial differences in production technology. These differences can persist if technology is slow to diffuse or if increasing returns to scale lock in the advantage of the first mover, and either force can encourage an enduring spatial divergence. Examples include the textile industry in Lancashire in the 18th century (e.g. Bailey, 1984), iron and steel production in the 19th century, aerospace industries from the early 20th century, or chip-making in the 20th and 21st centuries. Today, we see marked concentration of software development and AI production in a few locations, which can in turn become a basis for comparative advantage and cross-border exchange.

Let me take a closer look at one of those historical examples, the race for international leadership in iron and steel from 1850 to 1913, a case study that has been carefully studied by economic historians, most notably Robert Allen (1979). Allen found that in 1850, the British had a formidable technological lead, born of their pole position at the start of the Industrial Revolution. Iron bars and rails were relatively inexpensive, about half the price of similar products in their nearest rivals, the United States and Germany (130 versus

[1] '*What an extraordinary episode in the economic progress of man that age was which came to an end in August 1914!*' (Keynes, 1919).

225-275 shillings per ton). But that gap was to close rapidly by 1913, with the US pulling level and Germany even having a slight cost advantage.

Digging deeper into the sources of this catch up, Allen performed a classic exercise in productivity accounting, and the closing of the technological efficiency gap played a crucial role (see **Table 1**). For example, from 1860 to 1909, US rolling mills saw a cumulative 35% increase in total factor productivity ('A'). This was built around a shift to more capital intensive and fuel-efficient methods in the industry. US capital-per-worker ratios rose by a factor of 8, with output per worker ('Q/L') almost tripling, despite the technically constant metallic input requirements per unit of output ('Q/M'). A major part of the narrative was the adoption of the new Bessemer process which diffused quickly and levelled the playing field as the transition from iron to steel played out. Trade patterns followed suit, and Britain's position as a leading exporter of iron and steel in world markets was gradually eroded.

Table 1: Productivity growth in American rolling mills (Allen, 1979)

Year[a]	Q/L	Q/K	Q/M	Q/F	A
1860	22.77	16.88	.8047	12.71	1.000
1870	25.28	12.19	.7994	16.33	1.0264
1879	29.37	11.18	.7633	18.40	1.0420
1889	43.96	11.54	.7880	24.72	1.1935
1899	61.03	9.99	.7893	24.80	1.2803
1909	73.13	9.08	.8230	25.64	1.3497

Q = production, measured as the tonnage of products less the tonnage of rolled products consumed by the industry.
L = labor, measured as the number of wage earners plus the number of salaried employees.
K = capital, measured by installed horsepower in operating establishments.
M = metallic input, measured as the tonnage of pig iron and ferromanganese consumed plus the tonnage of scrap plus half the tonnage of iron ore.
F = fuel consumption, measured in billions of BTUs.
A = index of total factor productivity computed with equation (1).

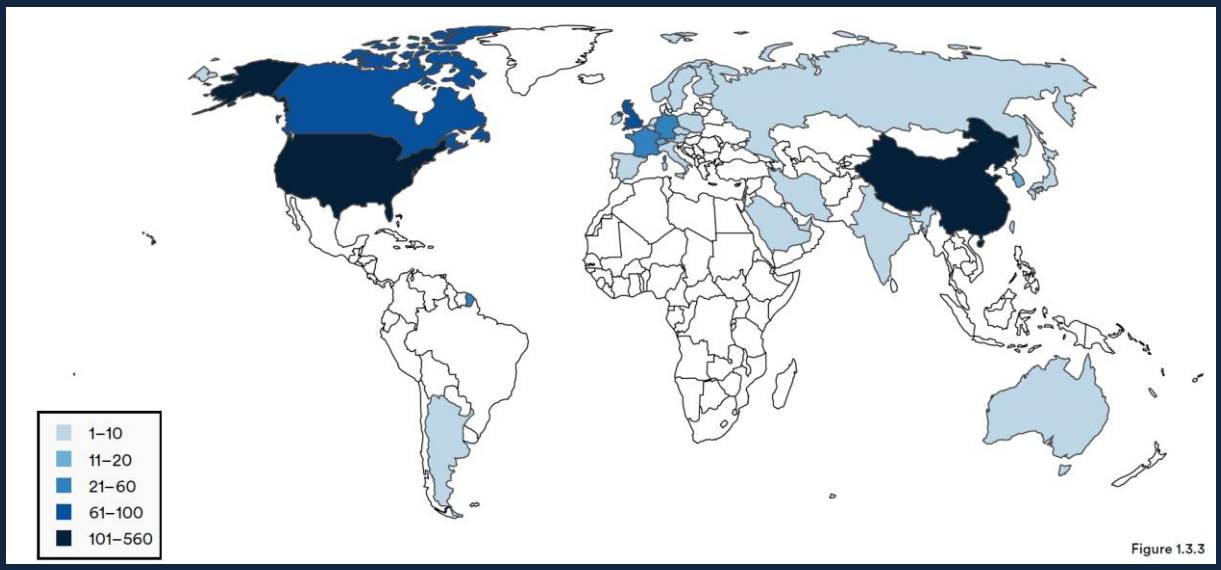
Source: Table 2 of Allen (1979).

This historical example brings to the fore an important issue. The question of how technology drives comparative advantage, and hence trade, is always about the race between innovation and diffusion, between some regions pushing the envelope with new ideas, and then others catching up. In some recent research with coauthors, we have argued that much of the divergence seen in global economic history over the last two centuries could be attributed to the *slow spread of ideas relative to the movement of goods*, but that we may have now moved decisively beyond that dynamic in recent decades when the move towards convergence has been the main story (O'Rourke et al., 2019).

Why does that shift matter and what might amplify or mitigate its economic consequences? In a world where ideas can spread without friction, then, it might seem that there is in theory no impediment to the adoption or imitation of best practice technology. But just because a technology is available somewhere, and can be adopted locally, does not mean that its full potential will be realized. As Gregory Clark (1987) showed for the diffusion of cotton manufacturing in the years before 1914, many countries imported the technology from Britain but struggled to obtain comparable overall efficiencies despite identical physical equipment. Controversy remains about the extent to which these differences in 'social efficiency' could be attributed to local environmental features such as institutions, norms, or culture. But is serves as a warning that diffusion is not a simple or seamless process in practice. If these obstacles remain then trade will have to continue to substitute for diffusion, as comparative advantage manages to stay ahead in the race.

So how do we think about the role of technology in trade, now and going forward? I believe we are at the precipice of another great race between local innovation and its eventual diffusion. To take the most prominent example, AI development and investment in related new technologies and infrastructure such as datacentres, at present, looks to be increasingly concentrated (**Chart 5**). But it is hard to know how quickly these forces will gain traction, and there is often a temptation to exaggerate the revolutionary nature of new technologies.

Chart 5: Number of notable AI models 2003-2024



Source: Figure 1.3.3 in **Chapter 1** of the **HAI 2025 AI Index Report**.

The diffusion of previous general-purpose technologies is cautionary. For instance, as with the example of the steam engine or computers, the widespread adoption of these kinds of new technologies has often taken a long time, so it may be a while until we see the effects

of the AI revolution showing up in aggregate statistics like GDP growth or total factor productivity.

However, the investment is happening right now and, at scale, in only very few places, so its impact on trade might be felt a little more quickly. Here, a big unknown is how much diffusion might be accelerated by policy to avert concentration for strategic reasons. Another unknown is how much infrastructure constraints, in particular power availability, might also limit diffusion. For now, the current direction of travel suggests to me that for AI, the concentration of supply in a few locations is quite likely, and least in the near term, and that in turn will be a new source of comparative advantage in the years to come, and therefore serve a boost to trade.

Endowments, traditional and new

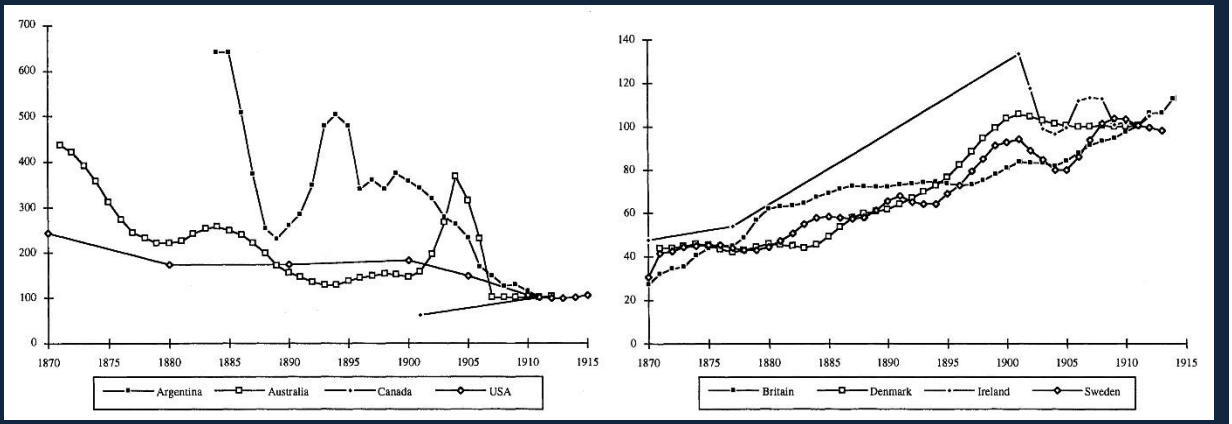
Production relies on the combination of technology and resources. So, for the question of comparative advantage, the question of differential access to technology is distinct from differential access to resources in a broad sense, what I am calling traditional endowments here. Endowment differences are perhaps the classic driver of long-distance trade, in that some regions of the world have an abundance of certain natural resources or that their climate makes them suitable for certain types of crops: there are only a few good wine regions in the world, a handful of areas suitable for cereal crops on a large scale, a few places with deposits of valuable resource like coal, oil, or iron ore, and so on.

And such differences in endowments are the basis of the other great foundational model of international trade – the Heckscher-Ohlin model (Heckscher, 1919, and Ohlin, 1933) – which provides a complementary lens through which to interpret trade patterns. And we can again look to the first era of globalisation for an example.

There, O'Rourke and Williamson (1999) looked at changes in labour and capital shares in the 19th century when the capital and labour-rich 'old world' began opening up to trade with the resource-rich 'new world', where capital and labour were relatively scarce. The H-O model predicts that the boom in trade between these regions, as trade costs fell, would cause a relative decrease in remuneration of the scarce factor (land in UK, labour in US) but an increase in the abundant factor (labour in UK, land in US), and that relative prices should convergence across countries. Indeed, O'Rourke et al. (1996) document how the old and new world saw a dramatic convergence in the wage-rental ratio in the 100 years before the First World War (**Chart 6**).

Chart 6: Ratio of wages to land values in New and Old World (O'Rourke, Taylor and Williamson, 1996)

Index, 1913 = 100



Source: Figures 1 and 2 of O'Rourke et al. (1996).

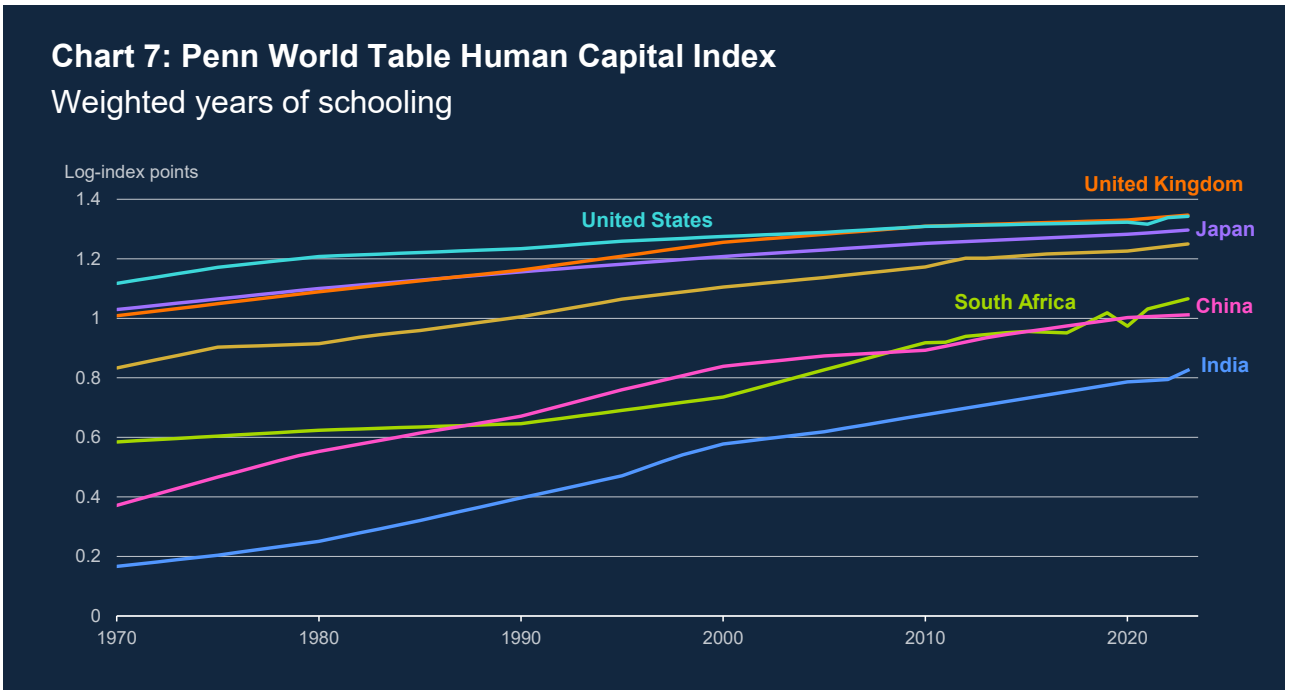
However, while the H-O model might be a decent description of the world in the 19th century, the story of the 20th century appears to be more complicated. First, it is much more difficult to find factor-price convergence across countries even though trade boomed. If anything, the 20th century was a century of capital accumulation and demographic trends first widening the gap between the global 'North' and 'South'. We do see some convergence (e.g., some middle-income economies since the 1960s, and China since the 1980s) but it is far from uniform and far from complete.

In the 20th century (and the 21st) we have also seen the interaction of natural endowments with institutions and technology and innovations. Contrary to the assumptions of the model, endowments are not static, or at least their importance in the global economy can shift on account of technological change, which has been especially pertinent to commodity economies. The Haber-Bosch process largely ended the need for guano 'mining' (see, for example, Blois, 2023), and the expansion of shale oil production in North America shook up the role of the OPEC cartel. The dearer the factor, the stronger the pressure to innovate to find substitutes or to explore to find alternative sources of supply – search is endogenous. Right now, rare earths are only produced in very few places, but in the future we may try (and succeed) in discovering deposits elsewhere or simply invent alternative production methods. Indeed, a 'trove of critical minerals' has recently been discovered in Utah (**Wall Street Journal, 2025**), and we are witnessing an accelerating race in research and exploratory trials for deep-sea mining. However, significant challenges remain unresolved – particularly regarding environmental impacts and regulatory frameworks (**BBC, 2025**).

How do we think about this now and going forward? I think it is important to note that the old view of endowments focused on land, labour, and capital. But these days, other input

factors are becoming much more important in production processes, and these are also distributed unevenly across space. Here I am thinking in particular of human capital and intangible capital, which are in some senses related, and which form an increasing part of endowment differences across countries.

The 20th and 21st centuries saw the emergence of human capital as a source of comparative advantage and, therefore, trade. This part of the story is reflected in the discussion around skilled versus unskilled labour, migration and labour mobility, and the growing importance of services trade (as opposed to goods trade) in the modern economy. As **Chart 7** shows, the evolution of human capital has been uneven. The advanced economies had a huge advantage in human capital per worker in the mid-20th century, but emerging and developing economies have been catching up rapidly in the last 50 years.



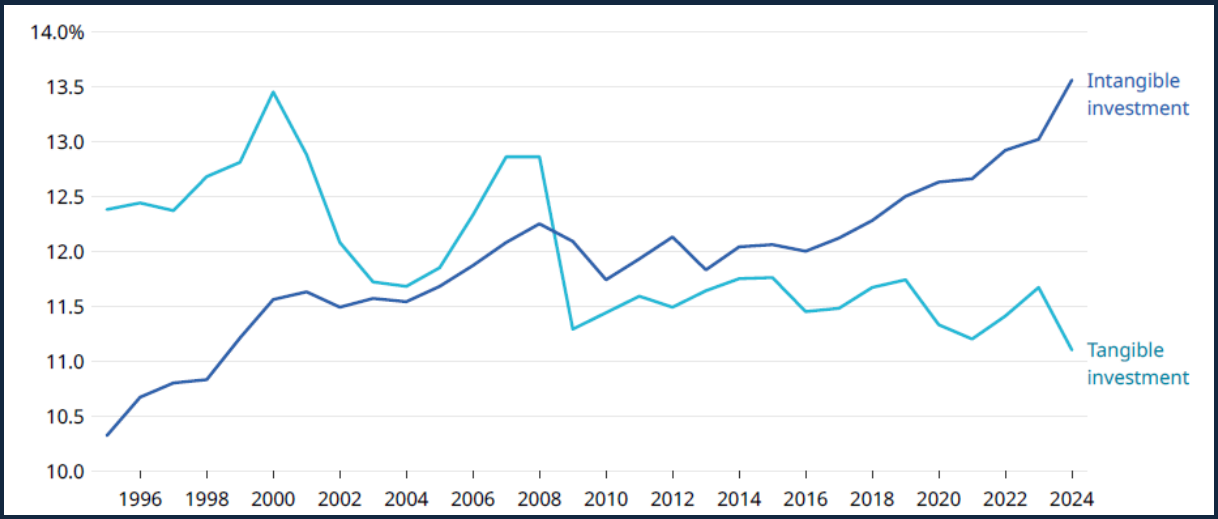
Source: Penn World Table. Latest observation: 2024.

Now, this story really is still beginning, and it is mirrored by the growing importance of intangible capital in the modern economy as shown in the recent data seen in **Charts 8 and 9**. The first shows how globally, investment in intangible capital as a share of GDP has been eclipsing investment in traditional, tangible capital for some time now. And its importance is only growing.

This is a very new factor, but it clearly has begun to play an important part in economic growth, especially in the advanced economies. However, it is not so much traditional, physical labour-augmenting technology that is driving growth here but instead much more ethereal ideas of management practices and the accumulation of within-firm skills and knowledge that determine company valuations (Corrado et al., 2022).

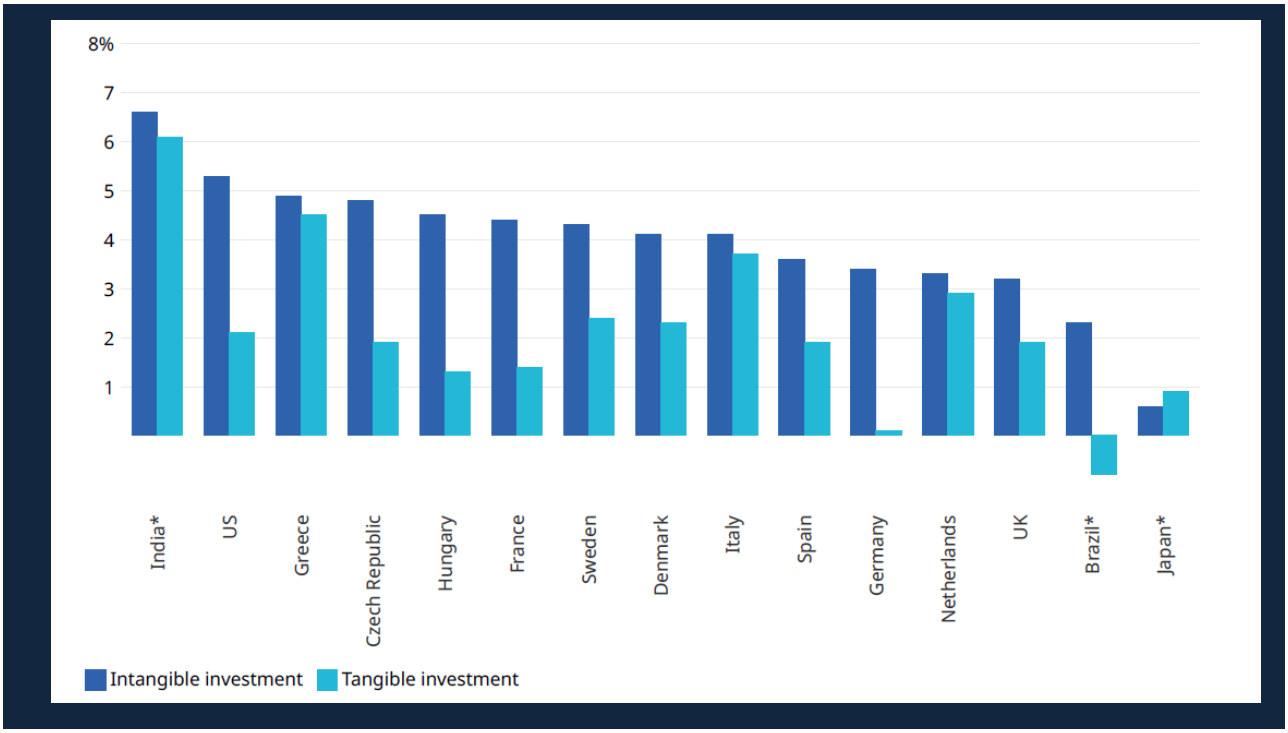
But while we know that this is an important factor and has contributed to economic growth, in aggregate and in key intangible-intensive sectors, what we know less about is the potentially equally important linkage between spatial differences in intangible capital and the degree to which those differences manifest as comparative advantage and provide a new force that stimulates trade. I think this story is very much one to watch – since intangibles appear to have accumulated quite quickly in a few countries, whereas many other places in the world have barely started on this journey. India (left-hand side of **Chart 9**) is adding intangible capital (and tangible, too) at a high pace compared to advanced economies, but this is from a low base so there is still great potential for catch-up dynamics.

Chart 8: Investment in tangible and intangible capital as a share of GDP
Percent of real GDP



Source: Global INTAN-Invest. For chart notes, see Figure 7 in **World Intangible Investment Highlights 2025**.

Chart 9: Growth of investment in tangible and intangible capital between 2014 and 2024
Compound annual growth rate



Source: Global INTAN-Invest. For chart notes, see Figure 13 in **World Intangible Investment Highlights 2025**.

Physical costs and infrastructure

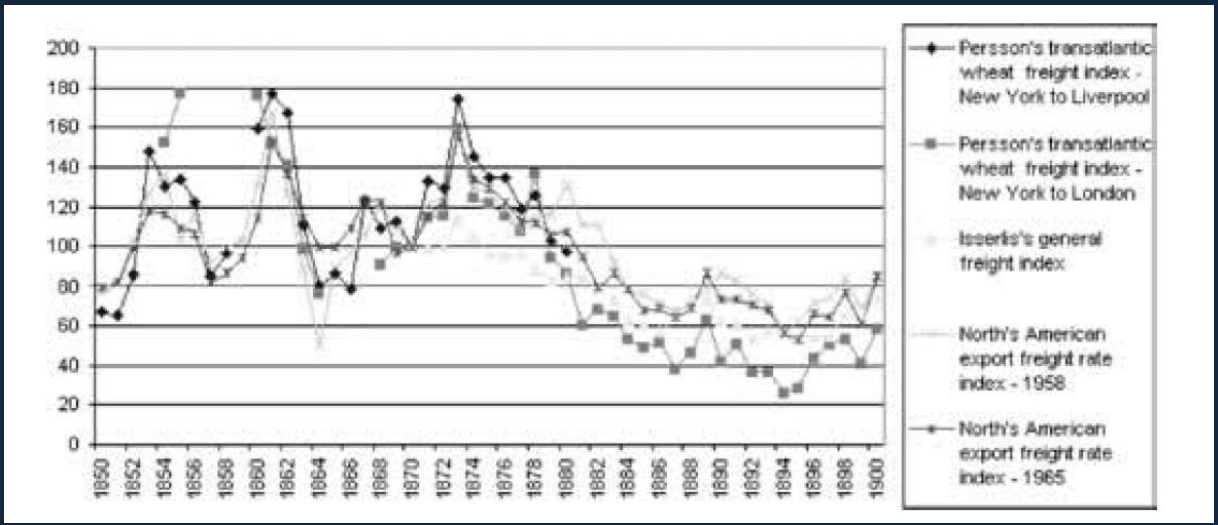
Now, let me turn to the third element in our story, the natural barriers of trade. The biggest story over the long run has probably been simply the physical limitations of transport and infrastructure. Neanderthals could perhaps trade as far as they could walk. But each innovation in transport technology brought about a flatter, more accessible world. Whereas the journey from London to Singapore would have taken more than three months in 1800, and four weeks in 1900, today it takes about 13 hours.

And this flattening applies not just to the physical world where we went from caravans and river traffic in ancient Mesopotamia to better ships and sails around the Mediterranean to the Carrack, steam power, and railways bringing us to the cusp of modernity. And further, it describes not just the great isthmus canals, aeroplanes, electrification, and the invention of the shipping container.

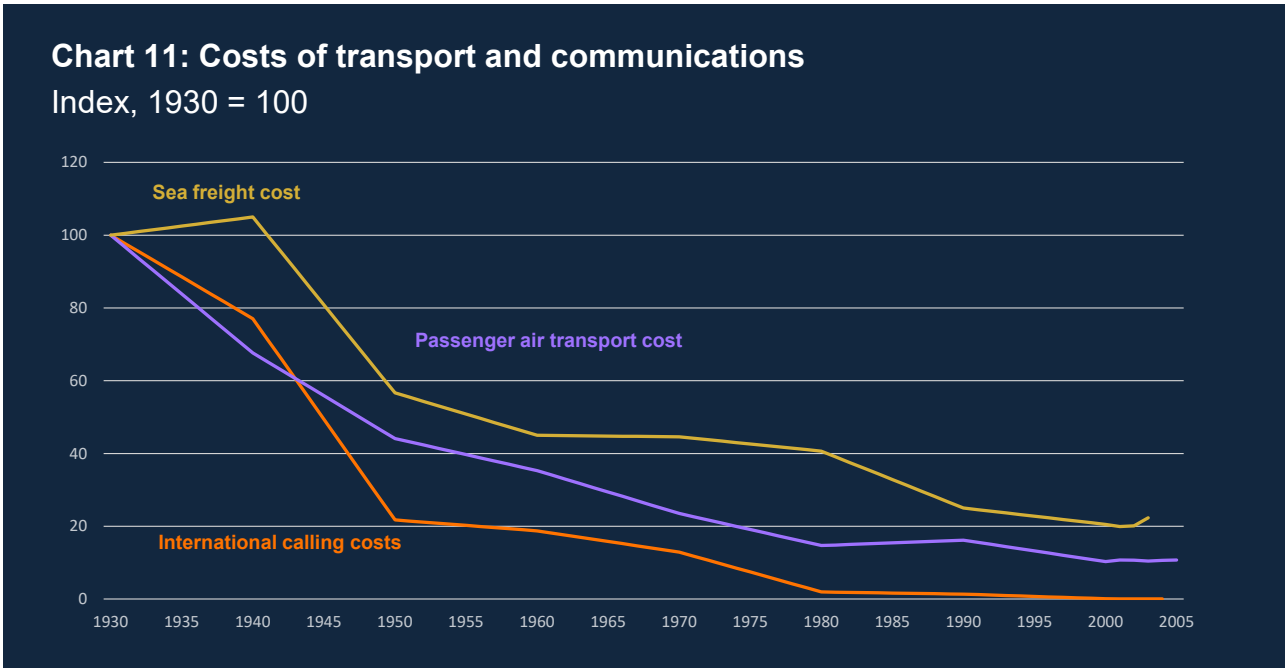
Because the flattening also critically happened in the world of communications – from messengers to semaphores, to newspapers, telegraphs, radio and TV, satellites and the internet – that not just made global trade in services possible but also critically enhanced trade in the physical world. After all, trade relies on communication to negotiate and facilitate but also to provide the economic and financial information that, when timely and efficient, incentivises arbitrage.

The pro-trade force of lower transport costs has played an enormous part in each of the two great globalisations in the last 200 years. In the nineteenth century, the costs of long-distance shipping by sea fell dramatically, by about one half, as sails were replaced by steam propulsion (**Chart 10**). This was a major technological change with slow diffusion over a century, and it was augmented by more, better, and cheaper ports. To connect these ports, and also to facilitate trade by land where possible, railroad investments provided another powerful source of international transport cost reductions: the global railway network grew from 23,000 miles in 1850 to 700,000 miles in 1913; it is only a little larger at 800,000 miles today (Rioux, 1989; Geistbeck, 1887; Rodrigue, 2024). The second globalisation saw different revolutions in shipping modes, principally the rise of container shipping technology (Levinson, 2006) and the increasing use of air freight. Another large step down in transport costs was the result (**Chart 11**).

Chart 10: International freight rate indices (Persson, 2004)
Index, 1870 = 100



Source: Figure 3 of Persson (2004).



Source: Transaction Costs - OECD Economic Outlook (2007). Latest observation: 2005.

We should also note just the progress in being able to move stuff, but also in being able to move information, and the incredible advances we have seen in communications. Economic historians have long recognised and emphasise the complementarity between information flows and market integration. In the 18th century the only way to get information from London to Amsterdam was via boat, and when boats got lost or sank in storms their incomplete journeys were felt in asset price disturbances (Koudijs, 2016). Similar impacts can be traced between London and New York with the arrival in 1866 of the first Trans-Atlantic telegraph cable (Hoag, 2006), and the cable also made a mark on commodity market integration (Steinwender, 2018).

How do we think about how these effects will play out now and going forward? Is this now a mostly spent force in our increasingly flat world? I think not, for two reasons.

First, trade costs can still fall much further for many countries, especially in many emerging and developing countries. Realising full trade potential hinges on robust infrastructure to lower costs, enhance communications, and eliminate logistical bottlenecks, so enabling more efficient global market access. The hard physical infrastructure obviously matters: Ports, roads, railways, airports, and energy grids are fundamental for moving goods efficiently, reducing time and costs. But increasingly digital infrastructure matters too: ICT and a reliable internet are vital for managing modern commerce and financial flows. Behind the scenes, the rule of law and an efficient and transparent bureaucracy, from customs to contracts, as well as better quality logistics and financial services, are all important elements of the "soft" trade infrastructure. Needless to say, many countries are far from having all of these building blocks in place, and as a result they have been somewhat left behind by globalisation.

Second, we need to think less about trade purely in final products, or even intermediate inputs. Aside from the need for raw materials to be transported, due to endowment differences that we discussed above, the first globalisation of the 1800s was about separating the consumption of manufactured goods from their location of production, what Richard Baldwin (2019) has termed the ‘first unbundling’ of the global economy. But we have come much further in the last 50 years. In the `second unbundling’ communications technology has separated stages of production within a final product from each other, with intermediate stages of goods crossing borders one or many times in sometimes complex supply chains. Ipso facto, this brought into the scope of trade a much larger range of intermediate goods, which took up an ever-larger share of global trade relative to final goods (Feenstra, 1998). Next, we are now entering a `third unbundling’ where in an increasingly digital economy the place of a labour services supplier can be remote from the actual locus of goods production, for some or possibly many tasks, creating the potential for a new large wave of previously unknown kinds of services trade, though again only for those economies where the hard and soft infrastructure make these gains from trade possible.

Thus, in fact, the world is far from flat. Trade costs have a long way to fall, and even just in terms of the old-fashioned all-in costs of moving goods from A to B we still have a long way to connect all of the world’s economies to one another. And beyond that, while the first unbundling is quite pervasive, I believe we have only scratched the surface on the second in a few key locations, and we have barely even started on the third unbundling.

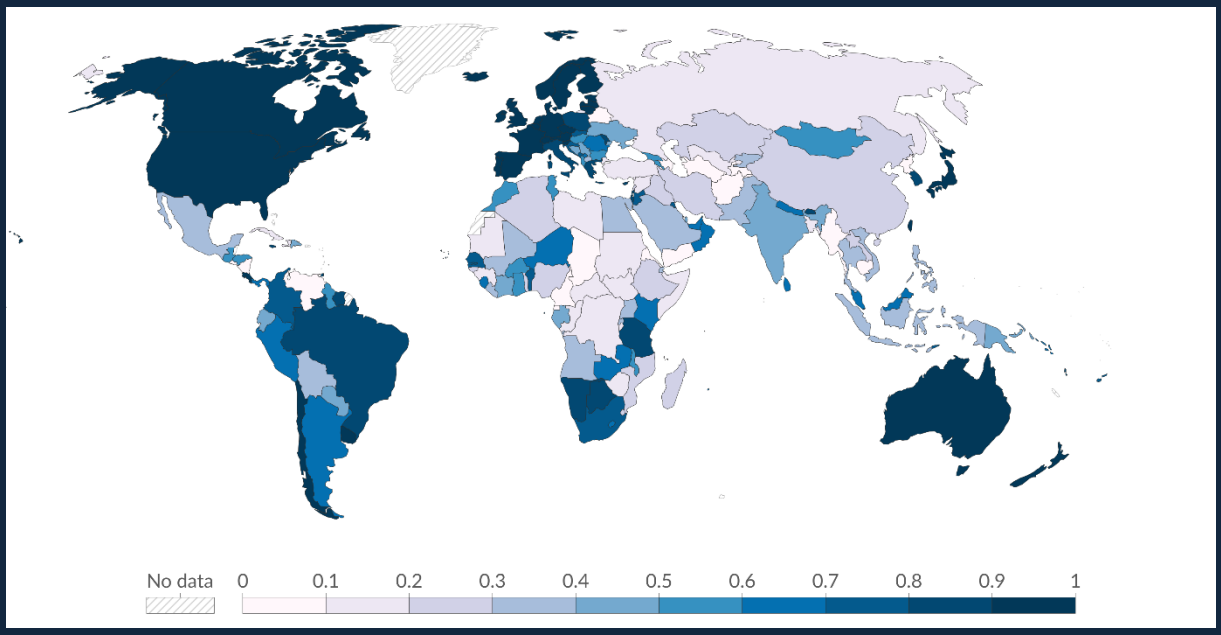
So, do we think this story is over? I do not.

State institutions and infrastructure

I will focus my discussion here on a couple of points where state choices can particularly shape trade.

The first is institutional quality, and especially the rule of law, which still today is very unequally distributed in the world (**Chart 12**). Beyond geographic boundaries, these institutions critically shape trade patterns. For a long time, poorly defined property rights, underdeveloped contract enforcement mechanisms, and other institutional quality measures have varied enormously across countries. And this variation, especially in the quality of the rule of law, has shaped international trade, because trade relies on the predictable and robust meaning of contracts.

Chart 12: Rule of law index 2024



Source: V-Dem via Our World in Data.

As we have seen with the growth of trade in recent centuries, it is often the state's capacity to guarantee order and its ability to resist corruption and arbitrary use of power that sustains growth and exchange. For example, one enduring historical question has been whether we can have long-distance trade at all without the robust contractual substrate provided by rule of law and sound institutions. Many centuries ago, in the Mediterranean, the legal and contractual systems were weak, but some trade was still able to take place. Researchers studying the institutions supporting that trade have argued about how and why that was possible (Greif, 1993; Edwards and Ogilvie, 2011; Nunn, 2007; Goldberg, 2012).

Now back in those times, trade was certainly possible to some extent, but not very much, and probably not the efficient amount. In this view, poor institutions are a trade friction, making trade of all kinds more difficult via cost or risk. Another focus has been on how differences in institutional characteristics across countries can also become a source of comparative advantage. If rule of law and contracting is poor, then trade might be more confined to types of goods and services which are not so 'intensive' in their need for these institutional characteristics, creating a source of comparative advantage.

But one can see how these effects could work in opposing directions. Future trends could cut either way when it comes to the potential for trade to grow. If institutional quality converges, then the latter force of comparative advantage may recede, which is trade reducing all else equal. But all would not be equal, if the former effect also comes into play and dominates. And I think that is much more likely to be the case, as better institutions will, across the board, reduce trade frictions, and therefore support more trade.

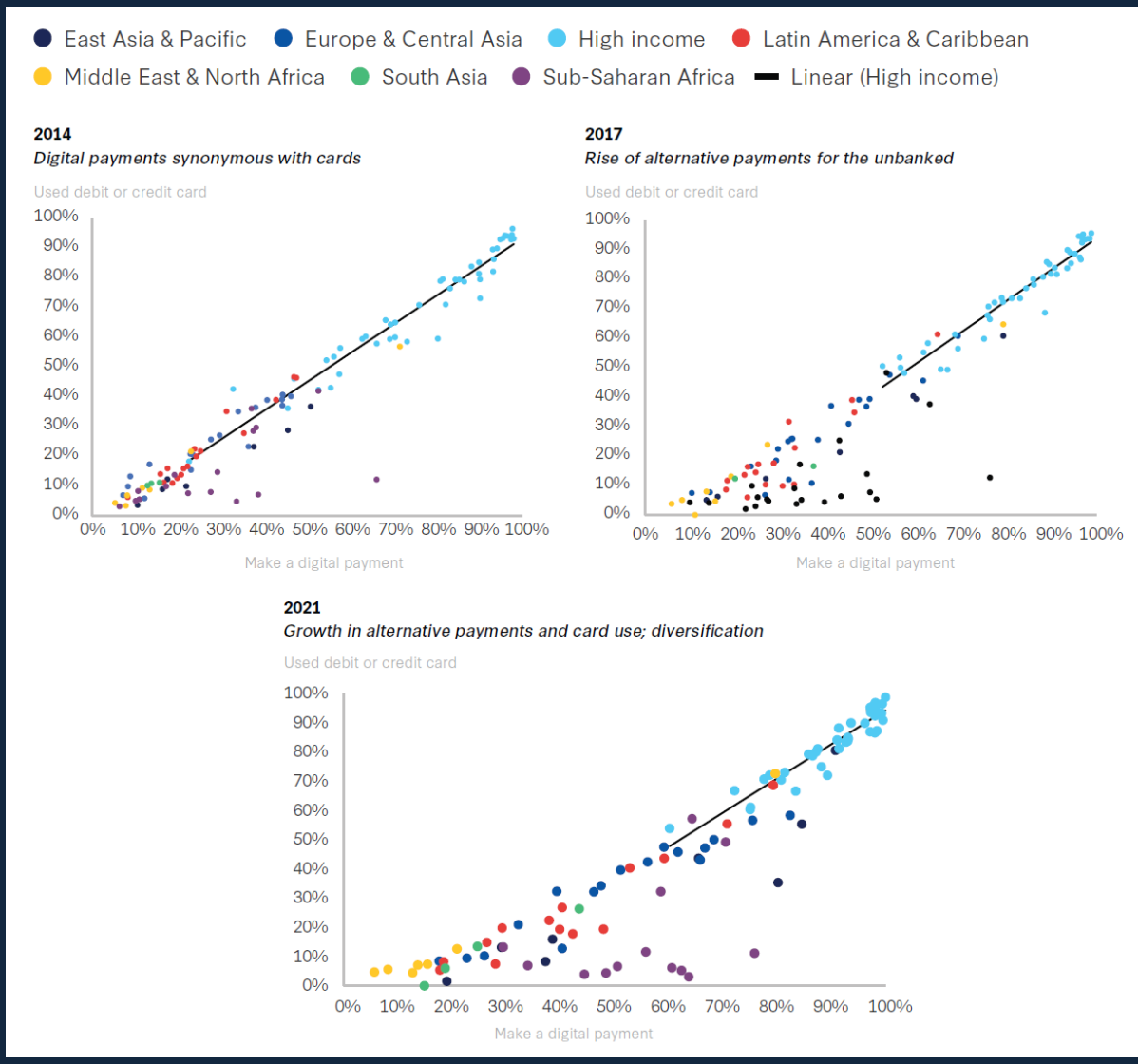
The second element I think that is worth mentioning here is how the state can potentially support international trade through choices made about payments systems. For example, I would argue that the establishment of the European Payments Union after the Second World War was crucial to the rebuilding of the European economy. But today our international payments infrastructure has been fairly static for decades, and only now do some new private technologies such as stablecoins look poised to shake things up. If payments systems can become more efficient, in more countries, this too can be a spur to more trade.

Domestically, states can obviously diverge in these systems, and the recent rise of new, digital payments systems in developing countries as a substitute for standard banking and credit card services, indicates how some countries have made rapid advances (**Chart 13**). But at the same time, these systems often suffer from a lack of interoperability at the global level, so they support small transactions for the unbanked, consumers and SMEs alike, at a local level. What they cannot do so well is provide much help for cross-border transactions, since standardisation is the key, and some international coordination is required.

In Singapore, as in most advanced economies, we may take for granted the existence of good institutions and international payments infrastructure, albeit not perfect. But many regions in the world are further behind, in some places very far behind. Thus, many places in the world simply cannot engage with global opportunities as easily because costs, and equivalently risks, are too high. Extending infrastructure and institutions to these places has the potential to greatly enhance international trade in the coming decades. Again, there is still plenty of room for growth here.[2]

[2] Indeed, greater international cooperation and harmonisation of payments system is currently on the agenda, see for instance the **G20 Roadmap for Cross-border Payments**, although there is a risk that 'the current trajectory of change will not deliver the improvements that G20 members have targeted' (**FSB, 2025**). I should note here that Singapore, in particular, has been leading initiatives to internationally disseminate domestic improvements to payments infrastructure, see **Project Nexus**.

Chart 13: Growth in the use of digital payments



Source: Figure 1 in Suominen (2024).

Policy-driven barriers specific to trade

Finally, onto the obvious: tariffs. In the end, while the factors that I have described so far can be thought to determine something like an epoch-level upper bound to international trade, in actuality, countries can always end up inside, possibly far inside, that frontier by instituting policy barriers to trade. This includes levying tariffs or quotas, or introducing other types of barriers like rules of origin or rules relating to product regulation.

However, as I argued in another speech in Cambridge, in October (**Taylor, 2025**), I am not expecting the new tariffs of 2025 to lead to a global trade contraction similar to those seen in the last great era of trade protectionism, the 1930s. Now, it is certainly true that, as we saw in an earlier chart (**Chart 3**), the United States has recently imposed an average tariff similar in level to the tariffs imposed in the US by the Smoot-Hawley Act in 1930.

So, in that respect we have a similar situation to the 1930s. But there is a key difference. In the 1930s the trade wars were very much symmetric. Lots of countries simultaneously went into a protectionist stance. For example, the UK adopted Imperial trade preferences, and many other countries increased trade barriers as a response to the economic downturn of the Great Depression.

In contrast, in this current episode, trade barriers are appearing in a more asymmetric fashion. The US has increased tariffs substantially. And some countries have imposed retaliatory tariffs, but only a few, notably China. Many countries have chosen not to retaliate, however, and they have also not raised trade barriers against each other. So this time is quite different: instead of many countries erecting trade barriers between each other, it is largely a case of increased trade barriers between the US and the rest of the world, with little change in other bilateral trade policies.

This asymmetry matters, and it could even lead to more trade in the rest of the world, even if there is less trade to and from the US. For example, exports that can no longer go to the US from China, may now flow to other places, and the current data suggest this is indeed starting to happen, with no contraction in volumes, just a change in destination. This would be a case of trade diversion. Overall, in theory, this may not fully offset trade destruction, but it seems so far to be mitigating the risk of a major decline in world trade.

Just as water finds a level, trade tends to find a way. If one path is blocked, arbitrage of goods and service will seek out the next best alternative, and in a still mostly open world, there remain plenty of such alternatives.

Of course, as long as a few suppliers control certain critical commodities, industries, or trade routes, there is a risk of geopolitical concerns leading to inhibited trade and increased tensions, and this applies quite broadly. But we are still for the most part far away from the past times of global monopolies and mercantilism. And any reconfiguration of supply chains may even stimulate measured trade for a while, although global welfare will of course be reduced.

On a more medium-term outlook, there seems to be scope for the change in US trade policy to encourage other parts of the world to work more energetically on new trade agreements which might then be a force for trade creation in those cases.[3]

It is also worth recalling here that in many parts of the world, tariffs and other trade barriers remain high, especially in many developing countries. Many countries joined the trade liberalisation trend after the 1980s, but very many did not (Irwin, 2022). If in those places,

[3] Indeed, other parts of the world seem to be continuing trade integration. See, for example, the recent advances in the EU–Mercosur trade agreement, which would create the **world's largest free-trade area by population**.

trade barriers still have room to fall this creates further scope for overall world trade to grow in the years ahead.

In sum, the major developments so far suggest that the bilateral imposition of tariffs on the part of one country, albeit large, may not materially reduce the global amount of trade. For sure, trade flows will rearrange and this may take some time, especially for complex and specialised supply chains. But most trade routes still remain free from any spike in tariffs. This, then, is not the 1930s when beggar-thy-neighbour policies crashed the global trading system.

Conclusion

Summing up, in the last 15 to 20 years, international trade has faced some strong headwinds. The global financial crisis caused a deep recession in many economies, and in terms of composition this even more forcefully affected traded goods, especially capital goods and durables, for obvious reasons (Levchenko et al., 2010). The slow recovery was followed by the pandemic, which threw sand in the wheels of international trade again, as global supply chains struggled to remain resilient amid a series of rolling shutdowns and shipping disruptions. Progress on trade liberalisation, which had made steady progress under GATT since the 1940s, ground to halt under the WTO, and debates over the distributional impact of free trade came to the forefront in times of slow growth. These challenges to trade manifested in a downside trend compared to the postwar trend as a whole.

That should not obscure, however, the enduring upside potential for trade in the longer run. In this lecture I have tried to step back from the current state of affairs and look at trade through a longer-run, historical lens. And I think from that perspective there is, at the level of the deep economic fundamentals driving trade, a lot of reason for optimism about the scope for international trade to remain robust and even grow, in the years ahead.

Globalisation is still very partial, the world far from flat, except in a few places. Many gains from trade remain unrealised. Actual physical costs are substantial in many cases, and manmade policy and institutional barriers persist. The continued advance of technology means we can now and will in future trade more things than ever before, as we unbundle the production of goods and services, and find better ways to produce them in the most efficient locations. Those left out from past inclusion in the world economy can still elect to join, and when the gains from trade are substantial, they will eventually have strong reasons to do so. These pro-trade drivers are generally slow-moving forces, but they eventually grind their way through.

I shall conclude with what the implications are for monetary policy. My basic message here is that these are very welcome forces. Smoother international trade is, at the end of the

day, a positive supply shock – for those countries who choose to participate, at least. It brings more and more affordable goods and services into the home economy. As such it is clearly disinflationary, and helps central banks maintain low and stable inflation while boosting economic growth and welfare.

In the short run, however, trade diversion will be the bigger story. I will again repeat, from my speech in Cambridge, my sense of how this is playing out in the UK. I think we are seeing signs of substantial trade diversion into the UK and also into the EU, our main trading partner, with the latter more clearly evident from some of the policy response to import surges in some sectors.

The Bank of England has considered various scenarios and estimates that trade diversion could lower inflation in the UK by some 0.2 percentage points in 2026 and 2027, abating to 0.1 percentage points in 2028, most via lower import prices (see Box C of the **May 2025 Monetary Policy Report**). This is a baseline figure, and arguably quite conservative. My judgement of the volumes and elasticities is a bit higher than this baseline and has been one factor therefore in my judgement throughout 2025 that UK inflation would end up on a lower trace than in our central projection. We now have further confirmation of that outcome, coming from other factors: tax and administered price hikes will fall away in April, new Budget measures will then lower inflation by an estimated 0.5 percent, food inflation has fallen materially, and energy prices have stabilised at lower levels.

We can now see inflation at target in mid-2026, rather than having to wait until 2027 as in our previous projection. I see this as sustainable, given cooling wage growth, and I now therefore expect monetary policy to normalise at neutral sooner rather than later, as I said in the December minutes. Interest rates should continue on a downward path, that is if my outlook continues to match up with the data, as it has done over the past year.

In the medium term, the economy should return to long-run trend productivity growth. And as I said today, the adjustments to the 2025 trade shock should eventually feed through, trade should prove resilient. Both of which would be welcome disinflationary forces that keep inflation well anchored.

Thank you.

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