SPOTLIGHT 2022

THE FRACTURING OF THE GLOBAL ECONOMY

How the return of geopolitics will reshape economies and markets

CAPITAL ECONOMICS

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Foreword

An extraordinary series of era-defining events has buffeted the world economy, upending many of the assumptions that underpinned the drive for greater financial and trade integration. We had already argued in 2019, as part of our annual 'Spotlight' series of research and client presentations, that globalisation had peaked and that the risks of deglobalisation were being underappreciated. The acceleration of US-China decoupling, the pandemic and the war in Ukraine have prompted us to take that argument forward.

This year's Spotlight tackles the idea of global economic fracturing, a multi-year process in which the emergence of US and China-aligned blocs will fundamentally reshape economies and markets.

We show how the world economy now faces a challenge far broader in scope than the fallout from President Trump's trade wars. Fracturing will affect everything from cross-border financial flows and transfers of technology to labour and product standards and supply chain security. Central to this analysis is the idea that geopolitical considerations will play a far greater role in formulating economic policy than they have for a generation.

Although our central scenario assumes that fracturing will bring only gradual shifts in the global economic and financial systems, we also discuss a range of less benign outcomes – including the economic and market consequences of direct military confrontation between the two blocs.

Our Spotlight projects are a deliberate effort to step back from the daily ebb and flow of markets and consider the bigger forces that will shape the global economy in the coming years. In doing so, we're not attempting to pinpoint definitive answers to what lies ahead so much as creating a coherent framework that allows our clients – and ourselves – to think through the complex challenges facing economies and markets.

With the drivers of fracturing already reshaping the global economy, this report sheds light on the risks and opportunities ahead.

Neil Shearing
Group Chief Economist
October 2022

Executive Summary

The world economy is fracturing into China- and US-aligned blocs. This will result in shifts in supply chains and reduced technology and investment flows between the two over the coming decade. Geopolitical considerations will play a greater role in economic policy than they have for a generation. If the shifts are gradual, economies and financial markets in much – but not all – of the world will adapt without too much cost. However, antagonism between the blocs means that the risk of a more abrupt decoupling will cast a shadow over the outlook.

In the 1990s and 2000s, policymakers and corporate leaders in major economies had a common purpose of increasing economic and financial integration. The consensus that this would benefit all started to fray in the last decade. Now, concerns about supply chain vulnerabilities, energy security and, above all, growing animosity between China and the West are causing some of the integration to be rolled back.

This will not simply result in a rollback of globalisation. Some global links will be severed but others will strengthen. The global economy will coalesce into two blocs centred on the US and on China – a process we're calling "fracturing". Whereas the period of globalisation of the 1990s and 2000s was driven by governments and companies working in unison, fracturing is being driven by governments alone.

These developments may not have a major impact on macroeconomic prospects or outcomes in advanced economies, which all sit in the US-aligned bloc. Efforts by governments to secure supply chains for key products and commodities will affect only a small slice of global trade. Policies to shore up supplies of key commodities will add to the cost of greening economies in the short term but are unlikely to alter the long-term trajectory of decarbonisation. At the margin, productivity growth will be lower and inflation higher, but any changes will be small and outweighed by other factors. The movement of some high-skilled workers between blocs will slow, but this is a small part of overall migration flows. The US dollar will remain the dominant global currency and the US financial system will continue to provide the financial plumbing for the world economy.

However, the politically driven nature of fracturing will have a significant impact on the operating environment for US and European firms in those sectors that are most exposed to restrictions on trade, such as technology and pharmaceuticals. **And all firms and investors will be operating in a different environment in which political considerations play a greater role in decisions over the allocation of resource.**

In contrast to the outlook for the US-aligned bloc, the impact on productivity growth in China and some of its allies will be substantial. This is embedded in our view that China's growth rate will slow to 2% by the end of this decade.

One consequence is that even if not much appears to change for advanced economies, the shape of the world in 2050 could be very different from what many currently suppose. The share of global output accounted for by the China-bloc has increased sharply over the past three decades, from 10% in 1990 to 25% today. But this surge will peter out over the next few years, in large part due to the productivity sapping effects of fracturing. The China-aligned bloc's weight in the global economy won't increase substantially from here.

As long as a crisis is avoided and fracturing leads only to a partial roll-back of prior decades of integration, most economies will adapt gradually to the new environment. Indeed, some EMs with strong links to the US and Europe could even be "winners" from fracturing.

In this relatively benign fracturing scenario, the financial assets of China, and the economies aligned with China, could face significant negative consequences as fracturing loosens trade and financial ties with the West. However, the impact of fracturing on most DM financial assets could be small, with some upward pressure on inflation ultimately leading to slightly higher bond yields and pressure on equity valuations.

There are also more worrying scenarios within this fracturing process that must be considered.

One is that the US- and China-centred blocs don't hold, and that the global economy splinters into smaller regional or national-level groups. **This could entail a rise in supply chain nationalism and a broader pushback against the sharing of technology.** The loss of economies of scale would result in a larger hit to productivity growth in advanced economies. And a more disruptive shake-up of supply chains could create more volatility in both output and inflation. With that said, a comprehensive splintering of the blocs is unlikely – we think, for example, the ties between the EU and the US will remain fairly strong, even if they become strained on occasions.

A bigger risk is that tensions between the two blocs escalate to confrontation, resulting in a broad severing of economic and financial ties. This would be hugely destabilising: the world's major economies are now so closely intertwined that even in areas where governments are keen to become more self-reliant – such as semiconductors, batteries, core minerals, and energy – decoupling supply chains will be a lengthy process. An abrupt severing of economic and financial ties would cripple global industry, causing shortages and rampant price rises.

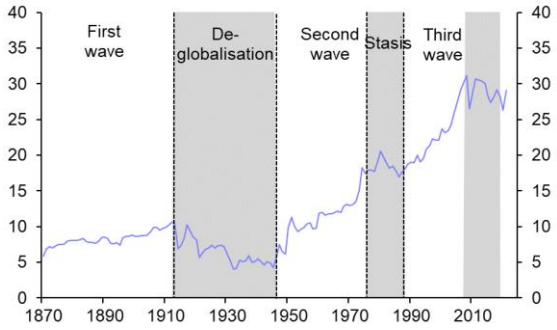
1. Why is the global economy fracturing?

Mark Williams, Chief Asia Economist

The shocks caused by the pandemic, the war in Ukraine and US-China tensions will have a lasting impact on the world economy, reversing decades of global integration in some areas while strengthening ties in others. In the following chapters we map out the likely consequences for the world's major economies and financial markets of a fracturing of the global economy.

The wave of globalisation that began around 1990 showed signs of stalling a decade ago. We define globalisation as increasing cross-border flows of goods, services, capital, people and ideas. The flow of ideas hasn't noticeably slowed and, before the pandemic, the number of migrants moving around the world continued to grow. But flows of goods, services and capital had all levelled off relative to global output or dropped back.

Chart 1.1: Global Exports (% of Global GDP)



Sources: WTO, World Bank, Capital Economics

That was a concern, particularly for emerging economies: we estimate that expanded trade was responsible for half of the acceleration in productivity growth in emerging economies after 1990. This boosted per capita income growth in the emerging world by around 1.5 percentage points per year. Globalisation had also contributed through trade links to keeping developed world inflation pressures low.

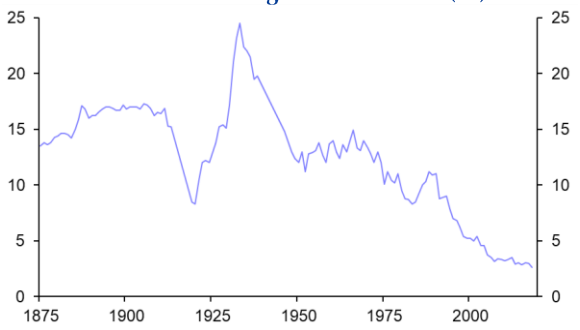
Unfortunately, there was good reason to believe that this apparent stalling of globalisation reflected a genuine underlying shift.

Previous waves of globalisation all ended and in some cases went into reverse (most notably for thirty years after the outbreak of the First World War). In this case, while several factors were at play, the key one was that the processes that had driven globalisation after 1990 had simply run out of steam.

The integration of China, Emerging Europe and other EMs into the global economy in the 1990s and 2000s, the lowering of trade barriers in all regions and the spread of the internet opened up

new markets and created opportunities for efficiency-enhancing redistribution of manufacturing supply chains. These developments also facilitated the faster dissemination of technology. Eventually though, this process was bound to run its course, unless new technologies appeared to support further unbundling of supply chains, or there were new large entrants to the open global economy. But there were no large economies left to play the role that China and the post-Soviet states did in the 1990s. By 2010, 97% of world goods exports (and 98% of commercial services exports) came from members of the WTO. Tariffs couldn't be reduced much further. (See Chart 1.2.) Instead, the focus of trade negotiations had moved onto services, where agreement over common rules has proved much harder to reach.

Chart 1.2: Average Global Tariffs (%)



Sources: WTO, World Bank, Capital Economics

Since the emergence of concerns that globalisation had stalled, the global trading and financial system has been hit by three shocks.

First, President Trump's trade war on China, which has broadened into efforts by the US and its allies on one side and China on the other to decouple their economies in areas of strategic competition.

Second the pandemic, which has made governments and companies reconsider the risks associated with global supply chains.

Third, Russia's invasion of Ukraine. This has put a spotlight on energy security, while the West's sanctions on Russia have revealed that financial and technological integration can be a vulnerability for a rival to exploit.

In this report we consider the long-run economic and financial consequences of these shocks. Each of them is likely to weaken or sever some global ties. But this will not simply be globalisation in reverse. The pressures on supply chains and on other cross-border ties will be stronger in some areas than others. Some ties between allies will be strengthened as countries work together to secure access to technology and key imports and to reduce dependence on strategic rivals.

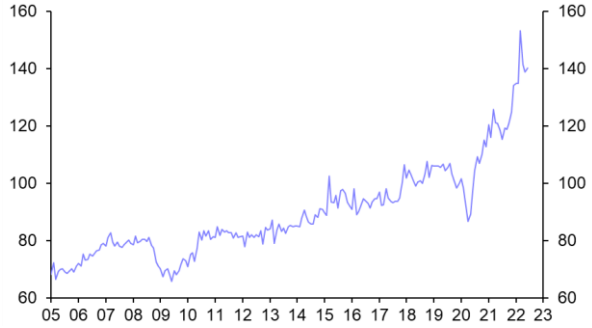
Rather than "deglobalisation", we think that a better term for what lies ahead is "fracturing". The shape of the global economy in a decade's time, in particular the extent to which economies have coalesced into rival blocs, will depend on how far this process goes.

In this first chapter, we look at the pressures that are driving fracturing and the likely outlines of those blocs.

The COVID shock to supply chains

The outbreak of the pandemic turned global attention to the state of supply chains. Shortages of semiconductors and soaring shipping costs kept it there. But despite these strains, perhaps the most of notable feature of global supply chains during the pandemic has been how resilient they have proved to be. They were able to accommodate a sudden and sizeable shift in the composition and scale of global spending. For example, real US consumer goods imports rose by more than a third in the first two years of the pandemic – more than they had in the preceding decade. (See Chart 1.3.) Without that supply response, global shortages and price rises would have been far greater than they ended up being.

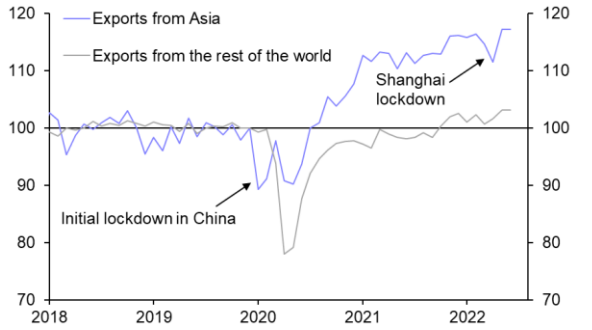
Chart 1.3: US Consumer Goods Imports (Real, Dec. 2019 = 100)



Sources: Refinitiv, Capital Economics

The world in a sense was lucky that production of many goods in high demand was concentrated in Asia, which suffered far less disruption in 2020 and 2021 than the rest of the world. Real exports from Asia had already expanded well above their pre-pandemic level in volume terms by late 2020. (See Chart 1.4.) The pandemic therefore gave corporates little pressing reason to consider major reorganisation of global supply chains. Keeping production in Asia was the sensible thing to do.

Chart 1.4: Goods Exports (Real, Dec. 2019 = 100)



Sources: CPB, Capital Economics

There are some signs that this is changing as a result of China's zero-COVID policy. Lockdowns have become a recurrent threat for industry within China and for those with close supply chain links – for example, Japan's car industry has faced repeated parts shortages.

In addition, quarantines for those in and visitors to China have complicated supply chain management. One particular complaint is that it is now extremely difficult to replace foreign staff. A recent survey from the US-China Business Council found that firms were scaling back investment in China and that nearly a quarter of respondents had moved segments of their supply chains out of the country over the past 12 months. The top reasons cited were COVID-19 shutdowns and boosting supply-chain resilience.

That said, China's exports remain buoyant. There is no sign in the aggregate trade or investment data that manufacturers are moving out of China. And previous shocks to supply chains have triggered only incremental changes. For example, the 2011 Tōhoku earthquake and tsunami in Japan caused huge industrial disruption, particularly to the auto sector, not just in Japan but globally (it led to plant closures by GM in the US and Peugeot in Europe). Japanese firms then re-evaluated their supply chains and some – most notably Toyota – introduced new policies that appear to have stood them in good stead during the pandemic. But those changes – holding larger inventories of critical parts, simplifying supply chains to use common components, adding redundancy – left the overall shape and structure of supply chains much the same. If that's a model for shifts now underway, they won't reshape global trade.

Supply shortages during the pandemic were most evident in shipping and in semiconductor production. Both are capital intensive and supply constrained in the short term: it takes at least three years to complete a new fab, or chip manufacturing plans. Semiconductor manufacturers have pledged to boost supply – TSMC has lifted capital spending this year to $40-44 billion from $30 billion in 2021. But there is no sign that commercial considerations are leading to substantial supply chain restructuring. The dangers associated with concentrating so much semiconductor production in one place, Taiwan, are evident. But the bulk of that $40-44 billion is still being utilised by TSMC in Taiwan where four new facilities are being built.

Where firms have invested in facilities in new places – such as TSMC's plant in Arizona – they appear to be doing so to benefit from government subsidies or for political rather than commercial

reasons. According to TSMC founder Morris Chang, the decision to go to Arizona, taken shortly after he left the firm, was made "at the insistence of the US government".

It is hard to disentangle commercial decisions made to increase supply chain resilience from those linked to geopolitical pressures – firms have good reason to downplay the latter motivation – but it is notable that many of those companies that have announced plans to move are in sectors where those geopolitical pressures are highest – particularly in technology and electronics. (For example, in September it was reported that Google wanted to move some its electronics production out of China.) Even decisions presented as commercial may have a strong political element.

Governments push to increase security of supply

The three shocks – the pandemic, US-China tensions and the Ukraine war – have each focused attention on the value of having a secure supply of key inputs. Governments no longer take for granted that the global economy is a dependable source of supply.

The US and the European Commission each launched reviews of supply chains last year. The US review was intended to make supply chains more resilient to "pandemics and other biological threats, cyber-attacks, climate shocks and extreme weather events, terrorist attacks, [and] geopolitical and economic competition." It focuses on four areas:

- semiconductor manufacturing & advanced packaging;
- high-capacity batteries;
- critical minerals & other identified strategic materials, including rare earth elements;
- pharmaceuticals & active pharmaceutical ingredients.

The European Commission review focuses on:

- semiconductors;
- batteries;
- raw materials (including rare earths and others on a "critical raw materials" list);
- active pharmaceutical ingredients;
- hydrogen;
- cloud and edge computing.

The significant overlap between the studies suggests that Western governments have a shared view on the inputs that are either most vulnerable to disruption or most important strategically and for which measures to address supply chain vulnerabilities are most needed.

The focus on pharmaceuticals was triggered by the pandemic. According to the US-China Economic and Security Review Commission, around 40% of the generic drugs sold in the US have a single global manufacturer, most of them dependent on active pharmaceutical ingredients sourced from China. President Macron has called for "full independence" in France's production of critical medical supplies.

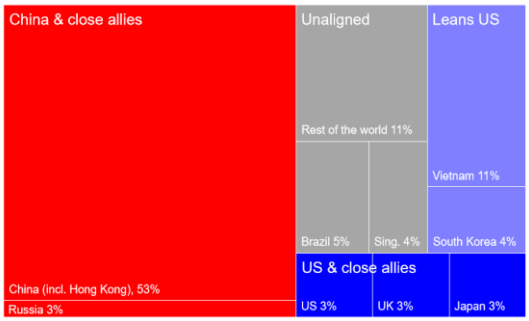
A common theme connecting the other inputs that Western governments are focused on is that they are foundational for emerging industries – electrical vehicles, high-end electronics, AI and the many other sectors that depend on advanced semiconductors. As the US report makes explicit, many of these products are also needed in modern weapons.

A second theme running through both reports is concern at the extent of European and US supply chain dependence in these area on China.

The European Commission identifies 137 products in its six focus areas for which the EU is highly dependent on imports from outside the EU. China is the source for more than half of these imports by value. (See Chart 1.5.) In mid-September, Germany's economy minister reiterated this point, saying that his government

was working on a new trade policy with China to reduce dependence on Chinese "raw materials, batteries and semiconductors".

Chart 1.5: Source of EU Imports of Critical Products



Source: European Commission, Capital Economics. The coloured country groups follow the decoupling classification discussed below.

For its part, China is taking steps to increase self-sufficiency in strategically important sectors too – and it has been at it much longer.

The Made in China 2025 Technology Roadmap that was published in 2015 included explicit targets for the domestic production share (or even the share based on domestically owned intellectual property) across a wide range of sectors. The latest iteration of the Made in China Roadmap, published in late 2020, widens the scope of the targets further, encompassing sectors from aerospace to operating systems. The targets generally come in two forms: raise self-sufficiency and become a global leader (for example, for new energy vehicles, the goal is to develop a self-sufficient domestic supply chain and have two firms in the global top ten by 2025).

The broader focus reflects the view of China's leaders that the country lags its strategic competitors in many areas and needs to catch up. But there is a striking overlap in the areas that appear to be receiving most attention with those in the US and EU reports.

For example, in September 2022, the Central Commission for Comprehensively Deepening Reform, arguably China's most authoritative economic policymaking body, said that the country's "economic development" and "national defence" required research "into core technologies relating to oil and natural gas, key raw materials, high-end chips and to accelerate breakthroughs in medicine."

Efforts to reduce dependence on rivals

The renewed government focus on economic security extends beyond supply chains. Successive US administrations have tried to leverage the technological and financial dominance of the US to pressure political adversaries – North Korea, Iran and more recently China and Russia. Sanctions have taken various forms:

- Technology export bans;
- Bans on transactions with designated firms or banks;
- Expulsion of banks from the SWIFT messaging system;
- Asset freezes on individuals, firms and central banks.

Notably, many of these sanctions effectively compel third countries to apply them too: non-US firms can't export any products embodying vetoed technology to sanctioned entities, even if no part of the product was manufactured in the US. Non-US firms that transact with sanctioned entities are at risk of being sanctioned themselves.

These moves are naturally stimulating efforts by US rivals to reduce their dependence on US technology and its financial system.

The "Made in China" project is as much about nurturing domestic technology in strategic sectors as it is about security of supply chains. Russia and China have each developed SWIFT alternatives (SFPS and CIPS respectively). China has since the Global Financial Crisis been trying to internationalise the renminbi, so that trade and other transactions can be conducted without any involvement by US banks.

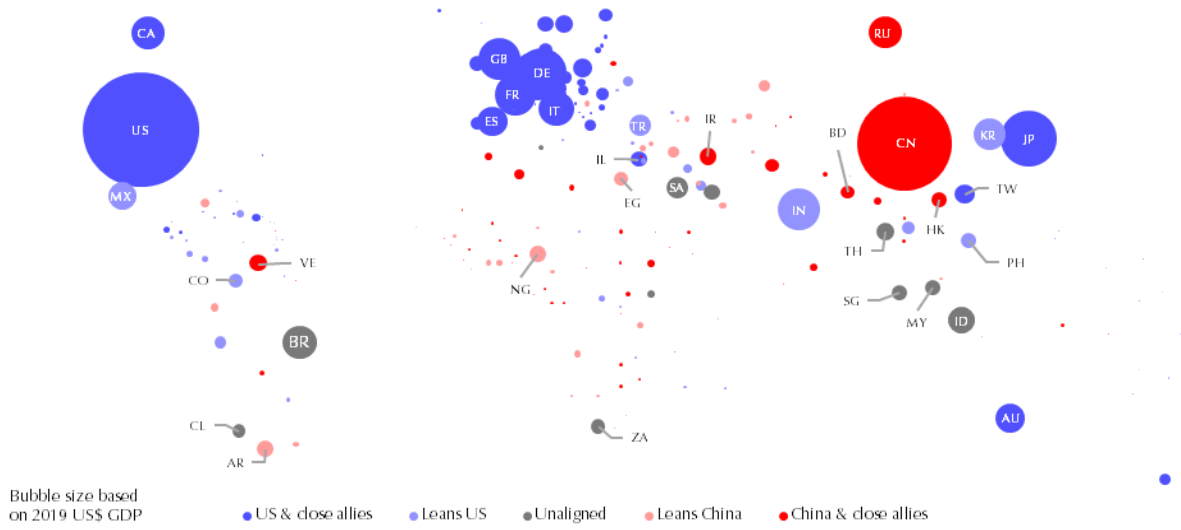
The return of geopolitics

Underpinning both sets of moves by governments – towards supply chain security and technological and financial independence – is the return of geopolitics as a central concern in economic policymaking. A rift has opened between Western governments on one side and China and Russia on the other. On each side of that divide, common geopolitical interests are binding countries closer together. Governments will be more successful in boosting supply chain security if they broaden their conception of self-sufficiency to include production by allies. Countries worried by US technological and financial hegemony will work together to reduce those dependencies.

The most likely outcome of the geopolitical pressures is that economies coalesce into two blocs centred on the US and China. Chart 1.6 below illustrates our assessment of how 217 countries line up today, as close allies of the US and China, weak allies or neutral. Our methodology can be found here.

Many countries would prefer not to have to pick a side and some will successfully straddle the divide. But we think that fence-sitting will become harder.

Chart 1.6: Current global alignment towards the US and China

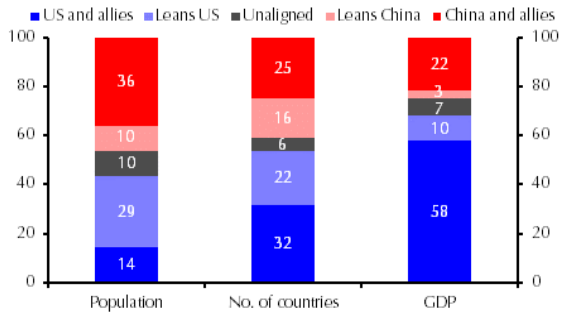


Source: Capital Economics

By our reckoning the blocs divide the global population roughly evenly. In other respects, the two sides differ in ways that will affect how fracturing plays out. China's bloc dominates production and processing of many strategically important minerals, whereas nearly all of the technologically most advanced economies are on the US side. The US side is far larger economically. (See Chart 1.7.)

The map of a divided world is the starting point for the analysis in the rest of this Spotlight report.

Chart 1.7: The Shape of a Divided World (%)



Source: Capital Economics

In the following chapters, we consider how this fracturing will play out. We look in turn at the implications for:

- supply chains and standards;
- commodity markets;
- financial integration;
- international institutions and cooperation on issues such as climate change;
- global growth and productivity;
- financial markets.

We argue that fracturing will have a material impact. But we also argue that a clean break between the main geopolitical rivals is not achievable in the foreseeable future, except at massive economic cost. Supply chains for products that governments have identified as strategically important are already too complex and intertwined. For example, according to the SIA, a semiconductor industry body, a semiconductor supply chain from raw material to finished product can cross international borders 70 times. One of its members has over 16,000 suppliers. Disentangling financial dependencies is similarly easier said than done. The respective efforts by China and Russia over recent years to move away from using the dollar to settle trade have had little success. In most circumstances we still expect significant trade and financial flows to continue between the blocs.

Some more worrying scenarios

But we think it is also worth considering other scenarios. One is that, rather than two blocs, the world fractures into smaller groupings, either national or regional. We think this is unlikely, at least for the US-aligned bloc – we expect ties between its core members, the US, EU and Japan, to remain fairly strong, even if they become strained on occasions. But suppose it did happen. In that case, security of supply, technology and finance would be even harder to achieve.

A bigger risk is that tensions between the two blocs escalate to confrontation, resulting in an abrupt severing of a broader swathe of economic and financial ties than in a more managed scenario.

The Western sanctions against Russia give an outline of what might happen but also suggest that the measures taken would depend on the degree to which the two sides had successfully already decoupled at the time of the crisis. After all, the Western sanctions on Russia had a carve-out for energy. An equivalent carve-out for China to minimise disruption in Western economies could allow significant trade to continue. The proposed Taiwan Policy Act under review in Washington includes sanctions on individuals and on Chinese banks in the event of "a significant escalation in aggression" against Taiwan, but no measures on trade. A crisis short of war (for example, aggression in the Taiwan Strait which didn't bring the US and China into direct conflict) may result in many Chinese banks and firms losing access to Western financial system but most trade continuing.

However, trade would not be allowed to continue as normal in the event of direct conflict. One alarming consequence of fracturing could be that governments feel they have less to lose from outright conflict with the other side if they believe they have reduced dependencies to a tolerable degree. In practice though, we believe the two sides will remain intertwined economically and financially. Any sudden fracturing of those relationships would be hugely disruptive.

2. The impact of fracturing on trade and supply chains

Michael Pearce, Senior US Economist

Fracturing will not be felt as globalisation in reverse – apart from a few categories of goods deemed politically sensitive or strategically important, most trade between the US and China-aligned blocs will continue as before. Where production does shift away from China, production is likely to move to other EMs within the US-aligned bloc rather than result in a great wave of reshoring. With some trade links severed while others are strengthened, world trade as a share of GDP over the coming years is likely to flatline at around 30% rather than fall.

We argued in the first chapter that fracturing is not the same as "deglobalisation". Apart from a few categories of goods deemed politically sensitive or strategically important, most trade between the US and China-aligned blocs will continue as before. And where production does shift away from China, it is likely to move to other EMs within the US-aligned bloc, rather than relocating back to advanced economies. Fracturing will not produce a great wave of reshoring. Some trade links will be severed but others will strengthen. Accordingly, in our central fracturing scenario, we assume that having increased sharply in the 2000s, trade will flatline – rather than fall – as a share of world GDP.

In this chapter, we map out how that fracturing will play out in global supply chains before considering how that central, relatively sanguine, view could be wrong.

The state of world trade

Building on the framework of US and China-aligned blocs introduced in the previous chapter, Chart 2.1 below maps the trading relationships both between and within the two blocs on the eve of the pandemic.

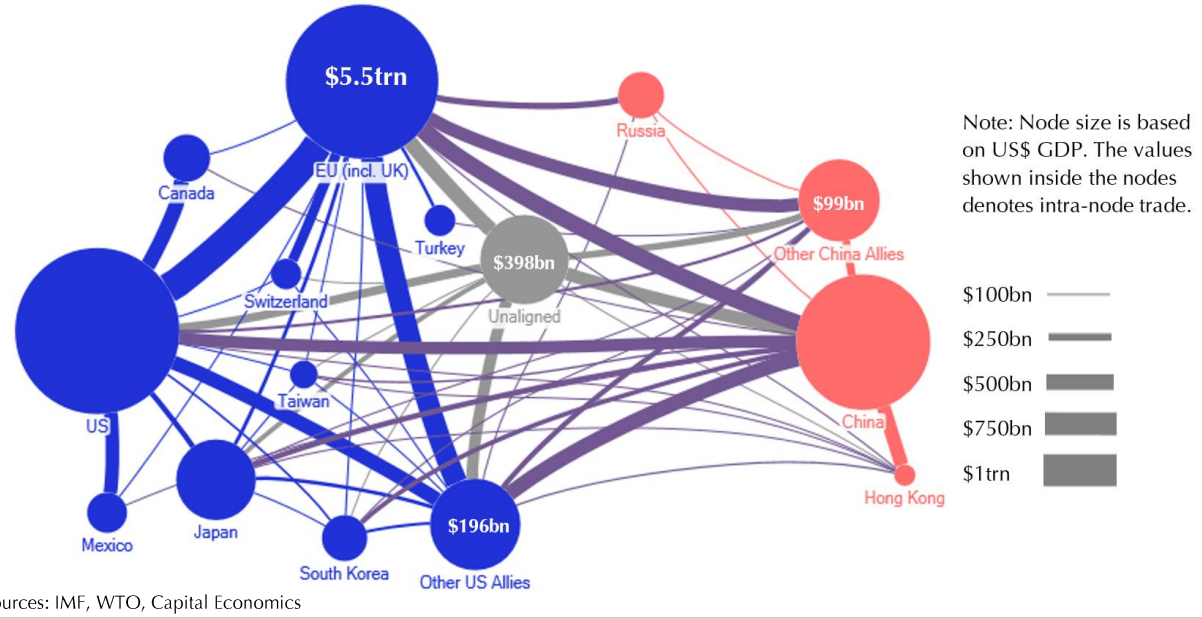
There are two key points that stand out. First, trade between the US and China-aligned blocs amounts to only a quarter of global trade. This essentially is the share of global trade vulnerable to fracturing. That share rises to a third if unaligned countries also had to limit themselves to trading with only one of the two blocs. But the majority of global trade takes place within the blocs and would be unlikely to be directly affected.

Second, the China-aligned bloc is far more dependent on demand from the US-aligned bloc than vice-versa. There is little trade within the Chinese bloc, and a large part of that is trade between mainland China and Hong Kong, much of which is re-exported to the US-aligned bloc. Overall, close to two thirds of the China-aligned bloc's exports go to the US-aligned bloc. In the

other direction, the share is just 15%. Those shares are similar for imports too.

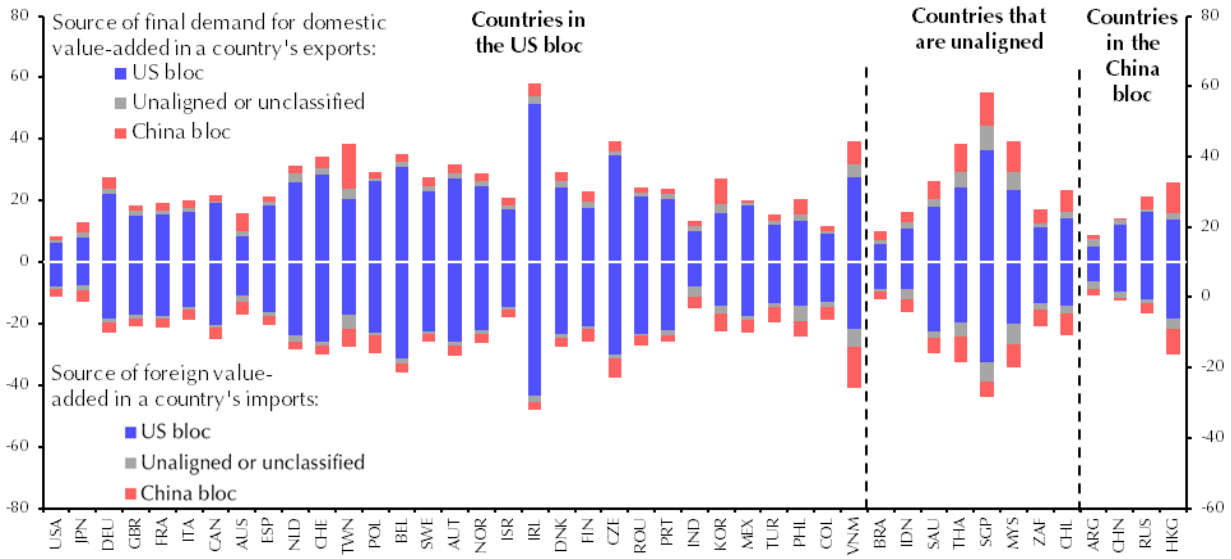
In reality, the trade figures, if anything, overstate the importance of the China-aligned bloc. China's position as the "world's factory" means that many products made in China are produced for the US-aligned bloc from components manufactured in the US-aligned bloc. The classic example is the iPhone, which is assembled in China using chips produced in Taiwan and LCD screens produced in Korea and Japan, before being mostly exported to Western countries. Trade data typically show the value of an imported iPhone as coming from China when, in reality, much of the phone was produced in the US-aligned bloc.

Chart 2.1: Goods & Services Trade ($, 2019)



Sources: IMF, WTO, Capital Economics

Chart 2.2: Goods & Services Trade (% of GDP*, 2015)



*inverted for imports
Sources: OECD, Capital Economics

One way to adjust for this distortion at the aggregate level is to look at trade in value-added terms, which accounts for intermediate steps in production. These data are only available with a significant lag and only cover a subset of economies, but they should still be broadly indicative of supply-chain dependencies.

Chart 2.2 breaks down the source of the value added in countries' imports and exports as a share of GDP. What the chart shows is that much of the value in trade in both directions is overwhelmingly dominated by the US-aligned bloc. The China-aligned bloc derives 12% of its GDP from exports ultimately consumed in the US-aligned bloc. Reliance on the China-aligned bloc is around two thirds lower – averaging around 4% of GDP in both directions for both blocs. For several countries (including Australia, New Zealand, Chile and Vietnam) demand from the China-aligned bloc generated more than 5% of GDP in 2015. For a handful (Malaysia, Singapore, Hong Kong, Taiwan), it generated more than 10%.

At the aggregate level, then, it is clear that the risks of a more fractured world economy are far greater for China and its allies than for the US-aligned bloc. It is also apparent that even a significant fracturing of ties between the blocs may not lead to a huge rollback in global trade, given that it accounts for only a quarter of all world trade, especially if that trade is replaced by more trade within each bloc.

The push to secure key supply chains

As we argued in the first chapter, it is governments, not firms, that are driving fracturing. The focus of governments so far has been to secure supply chains of key technologies and inputs seen as critical to leading the knowledge economy of the 21st century or as vital for health, as well as the defence sector, that governments wish to keep independent from strategic rivals. In light of the war in Ukraine, energy has emerged as a key priority too. Given its importance, we discuss energy (as well as other commodities, particularly those key to the green transition) in more detail in the next chapter. Here, we restrict our analysis to key manufactured products.

As we detailed previously, the US and European Commission have recently launched reviews of supply chain resiliency, both of which had substantial overlap in terms of key products. They include semiconductors, batteries, pharmaceuticals and active pharmaceutical ingredients.

Efforts to secure supply chains for those goods are already showing up in new legislation in the US, which together deliver a series of carrots and sticks to encourage firms to move production out of China and to the US and friendly third countries. For example, the recent CHIPS act included $39bn of subsidies for domestic semiconductor manufacturing over the next five years, with a ban on recipients of that money from expanding semiconductor manufacturing in China and other "countries of concern" over the next decade.

Similarly, the recently passed Inflation Reduction Act in the US, expanded Electric Vehicle tax credits, but to qualify, vehicles need to be assembled in North America and the battery minerals need to be sourced from countries that have a free trade agreement with the US. Beginning in 2024, this will exclude those vehicles which contain minerals or components sourced from "foreign entities of concern" – including China or Russia.

While the US is ahead in terms of putting those ideas into practice, others may not be far behind. In Europe, for example, there are reports that Germany is drawing up a new trade policy with China, focusing on reducing dependence on raw materials, batteries and semiconductors, with a focus on Chinese investments into Europe and potentially reducing or scrapping export guarantees.

Two things stand out from recent legislation. First, the US laws build on a framework which would allow legislators to add new countries of concern to the list of banned countries in future. That

could not only act as a precedent for future legislation, but also gives future administrations the opportunity to broaden out restrictions against a broader bloc of countries.

The second point is that the laws do not require production to reshore to the US specifically. In the case of the EV tax credits, significant parts of the production process can still take place in US-aligned bloc countries as before. The semiconductor subsidies are specifically for chip factories in the US, but those subsidies are small relative to the cost of building a fab, or chip manufacturing plant (each plant can cost $10bn-20bn). They also still allow companies benefitting from subsidies to continue investing in and expanding plants overseas.

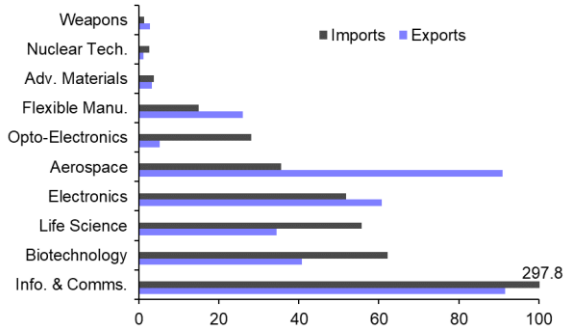
As we highlighted in the previous report, it is striking that many of China's efforts towards self-sufficiency are focused on similar areas, although its "Made in China" roadmap has a wider focus than the supply chain efforts of either the US or Europe, including areas as broad as operating systems and aerospace.

Mapping key supply chains

To help get a sense of how important trade in sensitive sectors is to the global economy, we turn to US data on advanced technology products. The data are not ideal. First, they cover only trade with the US, and the country breakdown is limited. However, they have the advantage of being published on a timely basis, and the classification used by the Census Bureau uses a fine breakdown of product categories to narrow in on sensitive products within broad categories, encompassing biotechnology, life science, parts of information and communications technology and electronics, flexible manufacturing, advanced materials, aerospace, weapons, nuclear technology[1].

On the Census Bureau definition, the US exported $356bn of advanced technology products in 2021, and imported $554bn. That is equivalent to around 20% of both exports and imports, a share that has been steady over the past decade. As Chart 2.3 shows, the majority of imports were of information and communication equipment, but there are also substantial trade volumes in biotechnology and life science. In most cases, the US is a net importer of advanced technology products, with the major exception being aircraft, reflecting Boeing's largely domestic-based supply chain.

Chart 2.3: US Trade in Advance Technology Products ($bn – 2021)



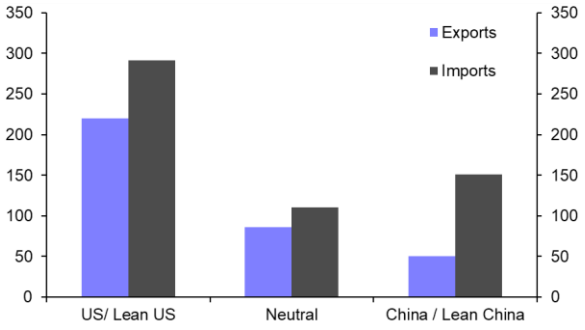
Source: US Census Bureau

Chart 2.4 shows the source and destination of those trade flows by country, grouped into our categorisations of countries in US or China-aligned blocs. The limited country breakdown in the Census Bureau data means there is a substantial fraction of trade grouped as "other" countries, which we assigned to the neutral bucket.

As with overall trade, more than three quarters of that trade already occurs between the US and countries which are closely aligned with the US, or neutral third countries. Just a quarter is with China-aligned countries. (See Chart 2.4.) Moreover, that share has actually shrunk slightly over the past decade, despite China's growing importance in the world economy.

[1] A detailed list of products included is available here.

Chart 2.4: US Trade in Advanced Technology Products ($bn – 2021)



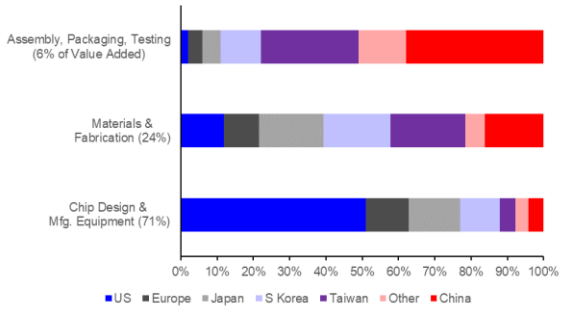
Source: US Census Bureau

One key conclusion from Chart 2.4 then is that a lot of the supply chains that the US is attempting to secure are already overwhelmingly located within closely allied countries. The $50bn of exports and $150bn of imports of advanced technology products trade between the US and the China-led bloc account for less than 5% of total trade.

For the China-led bloc, replacing any lost trade will be far harder. Turning again to the OECD's trade in value-added statistics, we can get some crude details at a broad industry level. The most relevant categories are pharmaceuticals and computers, electronic and optical equipment. As we showed in Chart 2.2, the US-aligned bloc is around four times more important than the China-aligned bloc as a source of value-added in imports and exports. The data for computer equipment show a similarly large disparity, while for pharmaceuticals, the US-aligned bloc is overwhelmingly more important – more than 15x as much value added in pharmaceuticals trade comes from the US-aligned bloc compared to the China-led bloc, suggesting that countries within the US-aligned bloc are even more central to supply chains in more sophisticated sectors.

The imbalance is far greater than the aggregate trade data imply if we focus on the cutting edge of those technologies. Take semiconductors, for example. Most of the R&D intensive steps, including chip design and the specialised manufacturing equipment to make chips is concentrated in the US and Europe, together with Japan and South Korea. The US has lost its previous lead in lower value-added parts of the process such as the fabrication and assembly, packaging and testing of chips. (See Chart 2.5.) But even accounting for that, every stage of the process is still dominated by US or US-aligned countries. The world's most advanced semiconductors are produced exclusively by TSMC in Taiwan. For some goods, then, there simply will be no alternatives for the China-led bloc if those ties are cut completely.

Chart 2.5: Semiconductors Share of Global Value Added By Production Step



Source: Semiconductor Industry Association

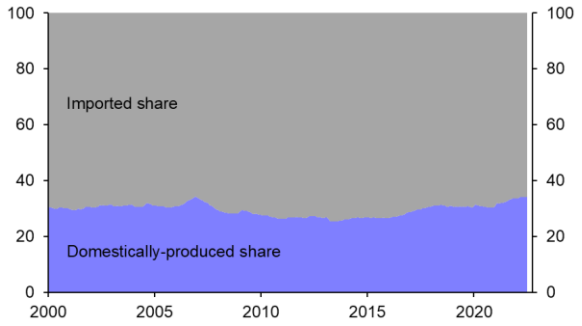
Fracturing won't drive reshoring

While the data suggest Western governments will find it easier to reduce their dependence on the China-aligned bloc in these key areas, that is only because much of the production is already located in friendly countries. Governments would find it much more difficult if not impossible to bring most of this activity back home, even if they are willing to devote significant resources.

For example, China has barely made any headway towards its goal of producing 70% of semiconductors used in Chinese industry domestically. (See Chart 2.6.) The target was set in 2015 with an original deadline of 2025. That is despite state investment and subsidies well in excess of what the US government is deploying with the CHIPS Act. Good intentions and capital alone don't determine outcomes, particularly in complex, technologically-advanced sectors. Even TSMC has struggled to replicate its own success far from home and its deep pool of specialised workers. Its first foray into producing in the US –

a fab opened in Oregon in the late-1990s – is to this day far less efficient than equivalent fabs in Taiwan. Chips made in Oregon cost 50% more.

Chart 2.6: Origin of Semiconductors used in China (%)



Sources: CEIC, Capital Economics

The main result of efforts to secure supply chains will probably therefore be to further entrench established manufacturers and supply chain hubs. For high-end components like semiconductors and other advanced electronics, the biggest winners will be countries such as Taiwan, South Korea and Vietnam. Low cost manufacturing hubs in friendly countries, such as Mexico for the US and parts of Eastern Europe for the rest of Europe will benefit as production of parts lower down the value chain are shifted out of China. Any reshoring is likely to happen on a limited scale, and only in response to very generous subsidies. That also highlights the challenges were a more nationalistic government in the Western bloc to pursue more aggressive efforts to secure self-sufficiency, beyond simply securing supply chains within allied countries.

The overall impact on global trade of governments moving to secure supply chains would be a pivot in demand away from rival blocs and towards greater integration and reliance on within-bloc networks. For the China-aligned bloc, however, the much wider range of goods that the Chinese government seeks to secure and the dearth of production currently located within the China-aligned bloc implies a much larger need to produce more domestically, which will not only prove very difficult, but would also be a drag on world trade.

Rules and standards unlikely to be transformative

As well as focusing directly on trade, governments could also seek to reduce their strategic dependency on rivals using their clout to rewrite the rule book to favour domestic firms at the expense of rivals. We're sceptical, however, that the use of technical standards will become anything more than just sand in the wheels of global trade.

There are already plenty of standards that governments set that either directly or indirectly help to keep foreign competition out and protect domestic manufacturers, including safety, environmental and labour standards. But that has not stopped trade integration. For example, the auto industry is highly globally integrated, despite varying safety standards for vehicles in different countries. Auto firms are forced to sell different versions of vehicles, including different safety features, light colours or left or right-hand drive versions. Those regulations do not amount to all that much - a recent industry report put the cost of complying with US safety standards for European automakers at roughly $150-200 per vehicle, or less than 1% of the purchase price.

It is possible for governments to write rules strict enough to lock out firms from other countries. For example, China's "great firewall" blocks a range of Western internet companies and the US government has banned Huawei from providing equipment for its 5G network and encouraged allies to do the same. In both cases, the impact was marked for the individual companies in question, and is clearly an important part of the broader fracturing story in terms of technologies. But for now at least, the affected sectors are too small to make a difference to the aggregate picture. And the broader economic disruption has ended up being small because business has quickly adapted to set up parallel but separate networks. In the case of China's restrictions on internet firms, for example, a crop of domestic copycats with similar functionality fill the void, including WeChat, Baidu and Tencent.

Wider-ranging severing of ties the key risk

While in our central scenario, the impact of fracturing on world trade is relatively benign, the two more damaging scenarios we laid out in the first chapter are clear downside risks. We have already discussed how it would be much harder for the US to go it alone in a scenario where we saw more fracturing within blocs. As Chart 2.1 made clear, the risks to intra-US-aligned bloc trade would be a much bigger deal for the global economy and world trade too.

The second potential risk is that while government efforts for now appear limited to efforts to key sectors of the economy that are particularly sensitive, covering health, defence, and technological leadership, there is a clear risk that governments do not stop there and extend that framework to a broader set of goods and services. Precisely because this approach risks much broader disruption, particularly for the West, we suspect that such measures would only be deployed in a much more extreme scenario.

To an extent, we have already seen this in recent years, with President Donald Trump imposing tariffs on most imports from China and the Biden administration leaving those tariffs in place. US Treasury Secretary Janet Yellen has laid out her vision for a period of "Friendshoring", which she defined as deepening trade links with a "large number of trusted countries" which would allow the U.S. to deepen ties with countries that share "a set of norms and values about how to operate in the global economy".

This is nothing new. There has not been a major global trade agreement since the Uruguay round in 1994 which led to the creation of the WTO. The latter's much-vaunted dispute resolution mechanism, which was meant to act as an international arbiter of global trade rules, effectively ceased functioning in 2019 when the US refused to approve appointees to its Appellate Body, claiming that the body had exceeded its authority in judicating cases.

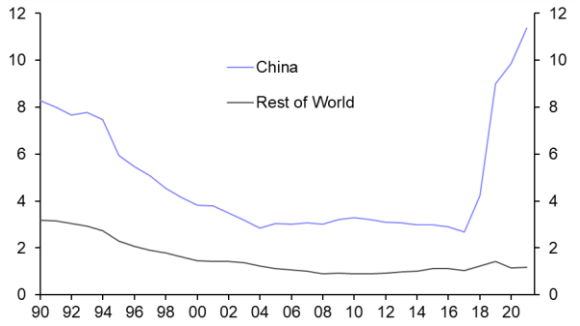
Yellen's rhetoric sounds suspiciously similar to previous US efforts to coin trade deals with large groups of allies – notably the Trans-Atlantic Trade and Investment Partnership with the EU and the Trans-Pacific Partnership with a bloc of Asian and pacific-rim countries. Both attracted little support in Congress, with negotiations on the former quietly dropped, while the latter was cancelled on the first day of Donald Trump's Presidency.[2]

Aside from the snappier name, there is little new in these proposals. There is also little to suggest the latest effort has a better chance than previous failed efforts to deepen trade ties, for the reason that most of the low-hanging fruit of reciprocally lowering trade barriers has been accomplished. The remaining trade barriers that governments would like allies to remove cover politically sensitive sectors and topics including healthcare, agriculture and public procurement.

As a result, it seems likely that in a scenario where governments would be scrambling to reduce dependency on China and its allies, it would be far easier for governments to pursue measures to divert trade away from China, Russia and others and towards allies, rather than any measures that would deepen market access. In some sense, this is the result of what US tariffs on imports from China have started to achieve. With a 25% tariff on just over half of imports from China, the average tariff rate on imports from China to the US has risen to almost 11%, significantly higher than the average rate of 1% on imports from the rest of the world. (See Chart 2.7.)

[2] (The remaining Asian and Pacific nations ultimately concluded negotiations without the US on a much smaller agreement, called the Comprehensive and Progressive Agreement for Trans-Pacific Partnership".)

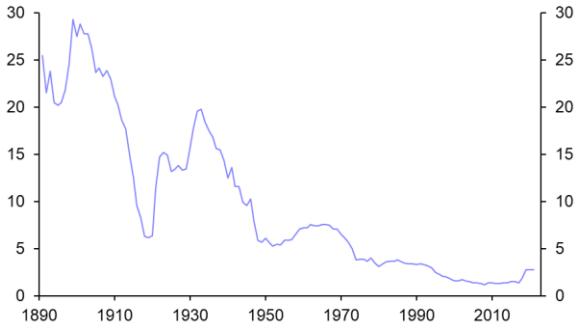
Chart 2.7: Average US Tariff on Imports (%)



Sources: US ITC, Capital Economics

Arguably the surprise is that those tariffs have not had a larger economic impact. Imports from China fell from 2.7% of GDP in 2017 to 2.2% by 2019, and have remained at close to that level throughout the pandemic. There was little overall impact on imports as there was an offsetting rise in imports from Mexico, Vietnam, Malaysia and Korea, at least some of which appears to have reflected transhipping imports bound for the US via those countries to avoid tariffs. But part of the reason why tariffs have had a muted impact on global trade is that they were limited to just US-China trade. So far, that has done little to change the broader picture of low tariffs since the 1990s, even for the US. (See Chart 2.8.)

Chart 2.8: Average US Tariff on Imports (%)



Sources: US ITC, Capital Economics

But perhaps the more important point is that US-China trade is only a fraction of total trade between the two blocs (See Chart 2.2 again.) It would take a more co-ordinated campaign to favour intra-bloc trade at the expense of trade with the China-aligned bloc, to have a marked impact on the pattern of world trade. If that were to happen, the likely winners within the US-bloc would be broader, because the goods are lower tech, easier to produce, and there are fewer agglomeration benefits to concentrating production in one location than in the case of semiconductors and other advanced products. Regional manufacturing hubs, notably Mexico for the US, and Eastern Europe for the EU would be much bigger beneficiaries in this scenario.

Conclusions

Three key lessons stand out from our analysis of global trade and supply chains. First, in our central scenario, almost all global trade would remain in place, with just 5% of global trade at risk, most of which we would expect to be redirected to within-bloc networks rather than lost entirely. Second, the US-aligned bloc would find it much easier to replace any lost trade from fracturing than the China-led bloc, especially if it were limited to key products such as semiconductors and pharmaceuticals where the US-led bloc is especially dominant. Third, only if we began to see signs of fracturing within economic blocs or a more extreme scenario involving far broader conflict between blocs would there be a serious threat of unwinding the global economic integration of the past thirty years.

3. Securing raw materials in a fractured world

Caroline Bain, Chief Commodities Economist
David Oxley, Head of Climate Economics

China's dominance in the supply of some key materials needed for the green transition means that US-aligned governments will continue efforts to secure supplies from "friendly" sources, which could add to the cost of greening economies in the short term. But the higher prices go, the greater the incentives to recycle and to innovate, and so fracturing will not derail longer-term efforts to decarbonise.

The Ukraine war has re-awakened concerns about food supplies and energy security and arguably accelerated the trend toward politically driven fragmentation. Against this backdrop, this *Chapter* examines the implications of politically driven fracturing on the supply of key commodities and the implications for global efforts to decarbonise.

It is organised into two sections: the first looks at the current state of play in commodities markets, including how the production/mining and processing/refining of key raw materials is divided between the US and China spheres of influence; the second examines how fracturing will affect the supply of commodities and impact efforts to mitigate climate change.

Section 1: The lay of the land

There is a great deal of uncertainty over the extent to which different sectors and countries will be affected by fragmentation, but the key fault line will be between China and the west, led by the US. As detailed in an earlier report, we expect economies to increasingly align themselves into one of five groups:

- US & close allies.
- Leans towards US.
- Unaligned.
- Leans towards China.
- China & close allies.

We assess how the production/mining of a number of key raw materials fits into this geopolitical framework. Specifically, we focus on:

Energy: Oil, petroleum products, natural gas, coal.

Agriculture: Wheat, corn, soybeans, palm oil, rice.

Industrial metals: steel (and iron ore), aluminium (and bauxite), copper.

Metals needed for renewable energy and battery technology: lithium, cobalt, nickel, zinc, chromium, platinum, palladium, and rare earth elements.

Note that the two metals groupings overlap to some extent. For example, as well as being 'traditional' industrial metals, copper and aluminium are heavily used in green technologies, including solar power and batteries. (See Table 3.1.)

How is commodity production distributed?

Chart 3.1 shows how the production of these key materials is distributed between the five groupings we have identified. A few key points stand out.

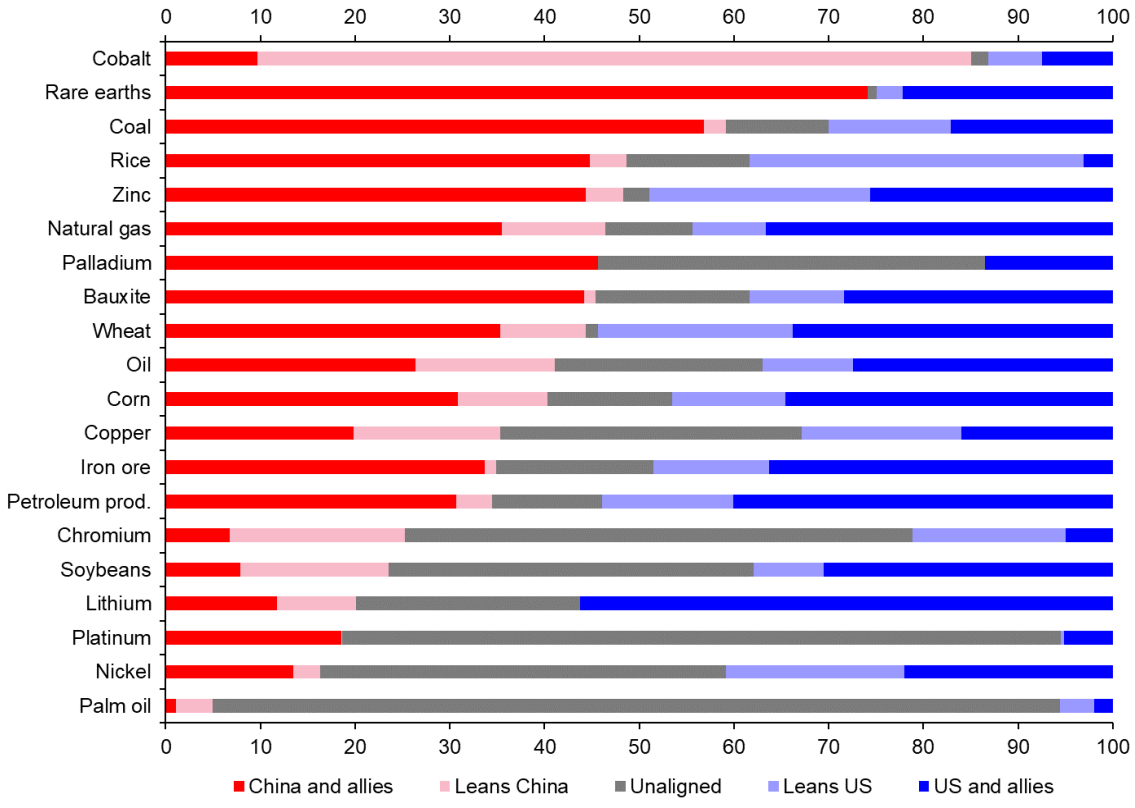
Table 3.1: Relative Importance of Minerals for Green Energy Technologies

	Copper	Cobalt	Nickel	Lithum	Rare earths	Chromium	Zinc	Platinium group*	Aluminium
Solar panels	High	Low	Low	Low	Low	Low	Low	Low	High
Concentrating solar power (CSP)	Moderate	Low	Moderate	Low	Low	High	Moderate	Low	High
Wind	High	Low	Moderate	Low	High	Moderate	High	Low	Moderate
Hydro	Moderate	Low	Low	Low	Low	Moderate	Moderate	Low	Moderate
Bioenergy	High	Low	Low	Low	Low	Low	Moderate	Low	Moderate
Geothermal	Low	Low	High	Low	Low	High	Low	Low	Low
Nuclear	Moderate	Low	Moderate	Low	Low	Moderate	Low	Low	Low
Electricity networks	High	Low	Low	Low	Low	Low	Low	Low	High
EVs and battery storage	High	High	High	High	High	Low	Low	Low	High
Hydrogen	Low	Low	High	Low	Moderate	Low	Low	High	Moderate

* Platinum, palladium, rhodium, osmium, iridium, and ruthenium.

Source: IEA

Chart 3.1: Production of Key Materials by CE Grouping (% of Global Production)

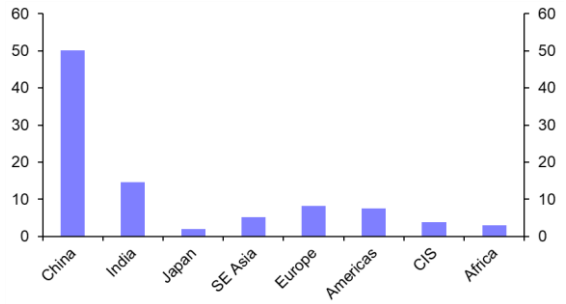


Sources: USDA, BP, WBMS, Capital Economics
Note: energy data = 2021, agriculture data = 2019, metals data = 2021 data and are the share of global mine production (ie, not refined metals)

Energy

The majority (57%) of global supplies of coal come from the China-led bloc, with China alone accounting for over half of the world's production. (Russia accounts for about 6% of global supply.) China's dominance in coal production is perhaps unsurprising given that it also leads the way on coal consumption. (See Chart 3.2.)

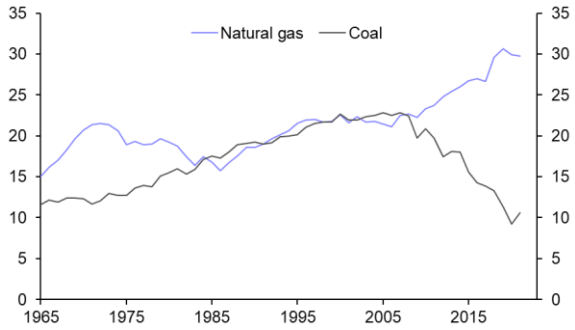
Chart 3.2: Share of Global Coal Consumption (%)



Sources: IEA, Capital Economics

While Europe has recently turned back to coal again out of necessity as gas supply from Russia has been restricted, the shift from coal to gas has been a key feature of decarbonisation efforts in the US in recent decades. (See Chart 3.3.)

Chart 3.3: US Energy Consumption (Exajoules)



Sources: IEA, Capital Economics

In contrast to coal, production of oil, petroleum products, and natural gas is much more balanced between the US- and China-led blocs, in large part because the US is itself the world's largest energy producer. And two of the world's largest exporters of oil – Saudi Arabia and the UAE – fall into our non-aligned bloc. (This could be disputed given that the currencies of many Gulf countries are pegged to the US dollar and that the US has a large military presence in the Gulf.)

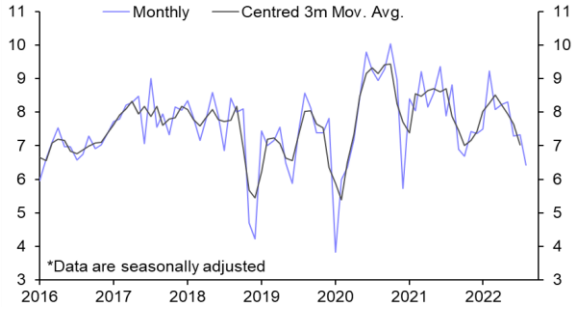
Agriculture

On the food security front, both the China and US-aligned blocs seem fairly comfortable, controlling large proportions of the world's output of grains. What's more, China also has large state reserves of grains, although these are only a temporary buffer as they can only be stored for a limited time. The fact that the China-aligned bloc dominates rice production is more a symptom of cultural factors, than a vulnerability for the US-bloc.

The overwhelming dominance of south-east Asia in palm oil production is arguably a risk for both the China and US-aligned blocs. And while China crushes a lot of soy oil, it is reliant on soybean imports.

That said, there are many substitutes for palm oil such as rapeseed (canola) oil, soy oil and sunflower seed oil, and the US-aligned bloc probably has the upper hand in production of these alternative edible oils. Moreover, while China's reliance on imports of soybeans is arguably the biggest vulnerability on the agriculture front, animal feed in China typically has a very high soybean content at over 20%, compared with a global average of closer to 12%. So, there is considerable scope for China to reduce its soybean consumption. In fact, the government is already discouraging soybean use and China's soybean imports have fallen by 8.6% y/y in January-August. (See Chart 3.4.)

Chart 3.4: China Soybean Imports* (Mn. Tonnes)



Sources: Refinitiv, Capital Economics

Metals

There is a significant concentration of metals production in non-aligned countries. They are the largest suppliers of copper (Chile), nickel (Indonesia) chromium, platinum, and palladium (all South Africa). (Again our mapping could be thrown into question here; Indonesia may be technically non-aligned but it is geographically close to China and has been the recipient of large amounts of Chinese commodity-related investment.)

Injecting a touch of nuance

Chart 3.1 is helpful but it is not the whole story and there are three other factors to consider.

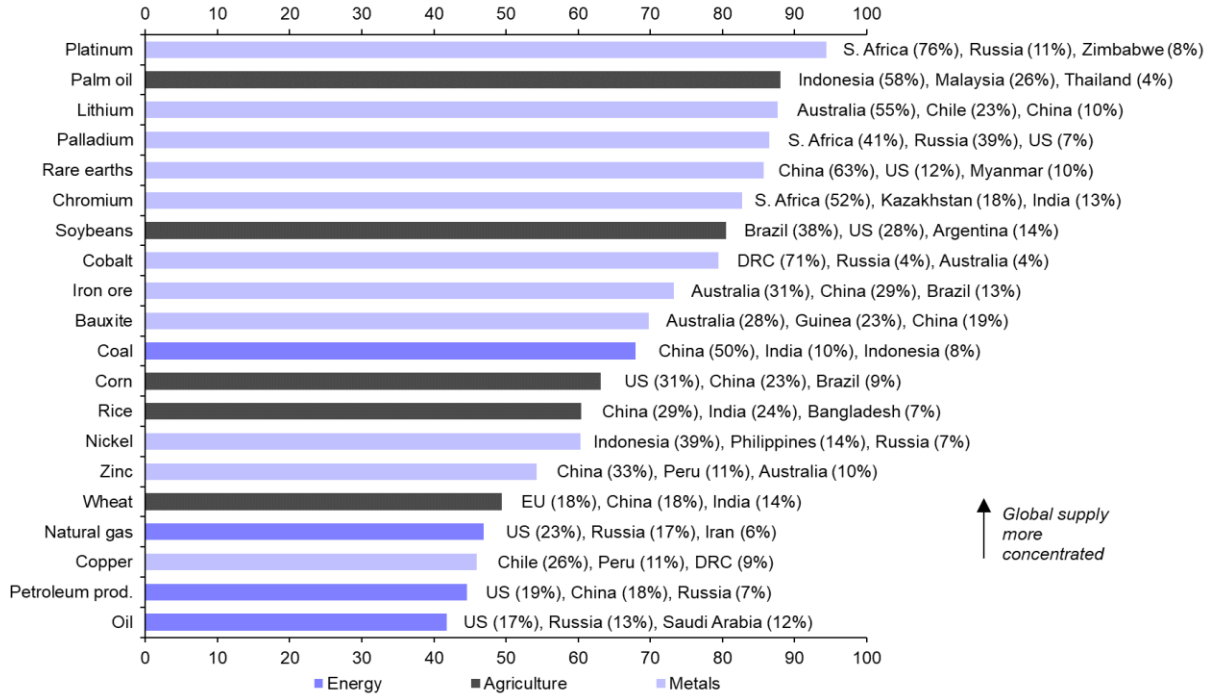
First, while Chart 3.1 focuses on geopolitically determined blocs of countries, it does not show the fact that supplies are often concentrated in only a handful of countries. (See Chart 3.5.) This raises significant questions about supply security.

After all, individual countries can quickly change their allegiance to geopolitical blocs. It is perhaps not a coincidence that so many major commodities producers are in the non-aligned bloc. They want to be in a position to sell to the highest bidder.

What's more, it is not a given that countries in a particular bloc will help out their allies in times of need, particularly if food or energy security are under threat. Most major producers of agricultural produce, including Russia, India, Indonesia and Argentina, have limited exports when domestic supply is not assured or prices are high. Sometimes exceptions are made for "friendly" countries, but national interests will probably dominate in most cases. Even in the US, the free-market champion, there have been misgivings recently about increased energy exports to Europe given that they have put upward pressure on domestic prices.

Geopolitical risks aside, the concentration of commodity supply in just a handful of countries presents other threats too, including the potential for natural disasters and more extreme weather patterns to disrupt production and/or export facilities.

Chart 3.5: Top-3 Share of Global Production (%)



Source: Capital Economics

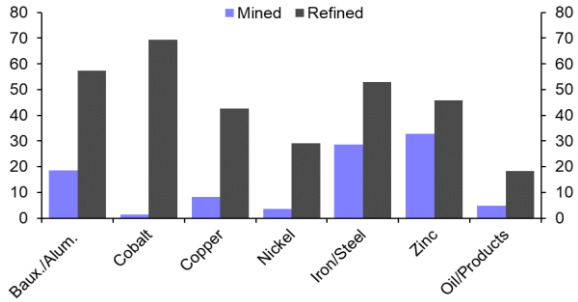
Not surprisingly, oil comes at the bottom of Chart 3.5, with the top-three largest producers only accounting for about 40% of global output. This reflects the fact that oil has been a sought-after resource for over one hundred years with countries prioritising domestic supply as part of efforts to bolster energy security. It is no coincidence that less economic oil resources, including in the North Sea, were only exploited in response to the oil price shocks of the 1970s. This demonstrates how concerns about supply security rather than financial gain can lead to resource exploitation and is something we expect to see more of in a fragmented world.

By contrast, production of some of the more obscure resources – including lithium and cobalt, which have only recently become desirable owing to their use in electric vehicle batteries – is more concentrated. There are also resources, such as platinum and palladium, that are quite rare and only found in a few locations.

Second, one has to consider not only where key commodities are produced, but also *who* controls this production. Chinese involvement in countries such as the DRC and Indonesia is well known. But the Peterson Institute recently argued that Chinese influence on the supply chains of key mineral and rare earths "extends beyond what is commonly assumed" once one accounts for "non-transparent webs of ownership and influence".

Finally, a focus on the extraction of resources understates China's dominance given that many commodities are processed or refined there. Chart 3.6 shows how China's share of most refined goods is markedly higher than its share of natural resources, and it typically has a 50% share or more of refined metal production.

Chart 3.6: China's Share of Production (%)



Sources: WBMS, WSA, BP, Capital Economics

Even when China's share is lower as in the case of nickel, this is because Indonesia has a ban on nickel ore exports. Instead, Chinese companies have invested heavily in nickel processing plants in Indonesia and are exporting huge quantities of partially refined nickel back to China. China also prefers to refine crude oil rather than import petroleum products.

To conclude, the US-led bloc looks in a fairly good position to secure supplies of food and energy, but China holds the cards on supply of metals, notably those needed to transition to a green economy.

Section 2: Implications of fragmentation

Fears that China could exercise its significant leverage over the supply of goods and commodities for political ends are already affecting behaviour and re-shaping supply relationships for key materials.

One comparatively 'benign' consequence of this is evident in the trend and incentive for countries in the US-bloc to invest in developing alternative supplies from aligned countries (so-called "friend-shoring").

Japan's rapid shift away from China as a source of rare earths shows how countries can reduce their reliance on a single dominant supplier. It came in response to China periodically restricting rare earth exports to the country for geopolitical reasons. In 2010, China accounted for 98% of Japan's imports of rare earths but now the figure is closer to 50%. Japan invested in rare earths

mining elsewhere, notably bailing out Australia's main producer, Lynas. It substituted with other metals where possible in manufacturing and it has financed efforts to recycle rare earths. There are more esoteric examples of "friend-shoring" too. (See Box 1.)

That said, Japan's efforts to reduce reliance on China have taken many years and also demonstrates that supply-chain links cannot be reshaped instantly. Against this backdrop, prices of vulnerable commodities will probably be higher, and potentially more volatile, than they would have been in a "no-fracturing" world.

A more extreme fragmentation scenario, in which access to climate-related commodities becomes even more heavily restricted and/or unreliable – similar to the way that Russia has recently withheld gas supplies to Europe – could lead to severe near-term disruption. In an extreme case, the US-bloc could struggle to source the materials it needs to decarbonise and it may have little choice but to continue with dirtier forms of energy production.

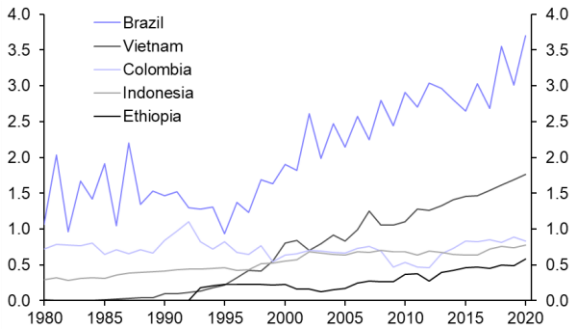
Second, higher prices for vulnerable materials would lead to greater recycling of minerals and metals, which could add significantly to supply. For example, governments could make recycling mandatory/more prevalent in the way that the recycling of lead-acid batteries has been the law in many countries for some time. Lead is obviously highly toxic, but it means that secondary (recycled) production of lead now accounts for over 60% of annual refined lead supply. (See Chart 3.8.)

Box 1: The GDR's plan to secure coffee supplies

In the late 1970s, a shortage of western foreign exchange and sky-high global coffee prices meant that East Germany struggled to import coffee. Coffee played a central role in the social fabric and the government was concerned that the shortage would cause civil unrest. As a result, the GDR government bartered weapons and machinery with countries, such as Ethiopia, to secure coffee. Eventually a longer-term plan emerged. In the 1980s the GDR invested huge sums in Vietnam, financing coffee plantations and the associated logistics to export.

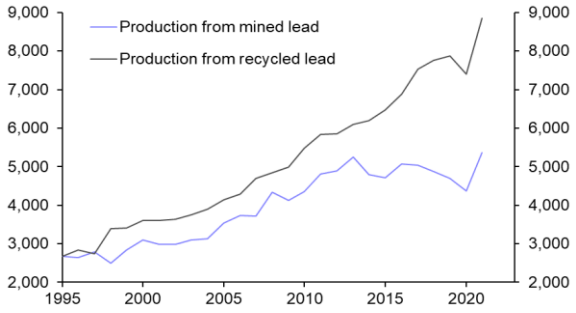
Somewhat ironically, the GDR had ceased to exist by the time the trees bore fruit, but it is an example of ingenuity in the face of supply constraints. And Vietnam is now the world's second largest coffee producer after Brazil. (See Chart 3.7.)

Chart 3.7: Coffee Production* (Million Tonnes)



Source: UN FAO *Time series of the five largest producers in 2020

Chart 3.8: Annual Refined Lead Output (Th. Tonnes)



Sources: WBMS, Capital Economics

Third, technological advances could help to reduce reliance on specific commodities. When necessity calls or prices are high, scientific advances can be very rapid. (As the old adage goes, high prices are the cure for high prices.) For example, synthetic rubber was invented in the late 1880s but it was only really adopted on a large scale during the second world war when the Axis powers controlled South-east Asia's natural rubber plantations. Moreover, there have already been successful efforts to produce cobalt-free batteries too.

These mechanisms will come into play to some extent over the coming years even in a 'benign' fragmentation scenario. But the greater the extent to which access to materials is curtailed, the faster the push will be to secure supplies from "friendly" countries, recycle and innovate.

One step backwards, two steps forwards?

Global fracturing has had some negative impacts on climate efforts so far, none more notable than the energy crisis following the war in Ukraine, which has led some European governments to put some coal plants that were due for closure back onto standby. Coupled with the fact that one-sixth of primary energy consumption in Germany in 2021 was still met by burning coal, Europe's perceived reputation as being at the forefront of climate leadership has been dented.

That said, estimates by Ember suggest that the coal power plants in Europe that have been put on standby would only add about 1% to the EU's carbon emissions in 2023. And it is encouraging that no country has reversed its commitment to phase out coal by 2030 at the latest. Moreover, to the extent that the war in Ukraine and the potential for more extreme cases of fragmentation in the future accelerates progress to recycle and to innovate, it could prove to be a catalyst for a more rapid (if costlier) transition to a greener economy in the medium to long term.

Conclusions

Bottlenecks in the supply of key commodities – particularly those needed for the transition to renewable energy – could see periods of shortages, and result in higher, and potentially more volatile, prices in the years ahead. In this respect, global fracturing will hinder and increase the cost of the green transition in the near term.

However, we do not think that fragmentation will prove an existential threat to climate efforts in the longer term. After all, despite ostensible progress on treaties aimed to limit the degree of global warming – notably the Paris Agreement in 2015 – mitigation efforts to date have been fractured and driven by national interests. (Note, for example, that a global carbon price seems pie in the sky and it is perhaps telling that the US doesn't have a federal level carbon tax.) The incentive for countries to free ride on the efforts of others will remain and makes an optimal global response unlikely. Indeed, as the need to tackle climate change becomes more pressing, you'd hope that efforts at global co-operation would increase; however, fracturing will prevent that from happening.

To be clear, we remain cautiously optimistic that emissions cuts can limit the increase in the global average temperature to about 2°C above its pre-industrial level. But this rests on our "techno-optimist" view that technological progress will increasingly make renewables more economic than fossil fuels, rather than us pinning our hopes on greater coordination on the climate front.

4. Fracturing and financial flows

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The trend towards ever more "financial globalisation" has already decelerated and will probably slow further as the global economy fractures and policymakers favour resilience over efficiency. While a disorderly rupture of financial relations remains unlikely, links between in the US and China will shrink.

The wave of globalisation that spread across the world in the 1990s and 2000s differed from earlier waves of global integration because it contained a large financial element. In this chapter, we examine how global fracturing might now affect the financial relationships that developed over the previous period of globalisation, and explore what impact this will have on global capital flows, cross-border financial claims and the role of the dollar in the world economy.

Setting the scene

In previous work, we identified three waves of globalisation. The first two – from 1870 to 1914 and 1945-1971 – were characterised by a large increase in cross-border trade and migration flows. The third, from 1989 to 2018, shared these features, but added a third element – a large increase in cross border flows of capital. Between 1990 and 2018, there was a five-fold increase in cross-border bond and equity flows and a seven-fold increase in foreign direct investment flows. All told, gross global capital flows increased from ~5% of world GDP in 1990 to over 20% of GDP in 2007. In addition to the globalisation of production, the world also experienced the globalisation of finance.

Box 1: How to think about global capital flows

Any analysis of financial globalisation requires navigating a minefield of terminologies and jargon. A key point to establish at the outset is whether we should focus on gross or net flows of capital.

Suppose $100bn of capital flows into a country, and $80bn flows out. In net terms, there is a $20bn inflow of capital. But in gross terms there are $180bn of capital flows. The effects on macro variables like GDP, inflation and the balance of payments are determined mainly by the size of the net flows. But when thinking about the risks from financial fracturing it is the gross flows, and the stocks of cross-border claims that build up over time, that matter. After all, these determine the size of the cross-border claims that can be unwound.

There are two broad drivers of gross capital flows. The first is trade – when a country imports or exports a good or service, there is an associated flow of capital in the other direction. The second is factors unrelated to trade – for example flows into bond and equity markets, or foreign direct investment. In addition, there are cross-border flows associated with banks facilitating trade and investment.

We therefore need to think about the prospects for global trade and cross-border investment and banking when thinking about how global capital flows will evolve. And we should focus on gross, rather than net, stocks and flows.

The spread of new technologies…

The globalisation of finance was driven by two forces. The first was technological in nature. The first two waves of globalisation were underpinned by new technologies that enabled a surge in world trade. In the late 19th Century, the spread of steam power contributed to a near-50% fall in ocean shipping costs. Later on, in the second wave of globalisation, the growing use of air freight and the development of bigger and more efficient ships reduced transport costs and increased the speed of moving cargo, particularly consumer goods. This produced a leap in trade: in the first wave, global trade increased by 9% of world GDP, and in the second it increased by 17%.

The third wave of globalisation, in contrast, was underpinned by the development and subsequent adoption of digital and ICT technologies. This reduced the cost and increased the speed of cross-border communications, and enabled the large-scale transfer of data between countries. These new technologies were then applied to the world of finance. For example, daily turnover in the foreign exchange market rose from an average of ~$0.5trn in 1989 to ~$6.5trn in 2019, and transaction costs plummeted.

…combines with a shift in policy

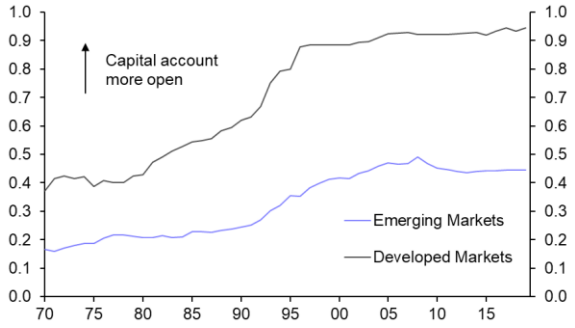
The second factor that led to the globalisation of finance in the 1990s and 2000s was a shift in policy.

The Bretton Woods system of global economic governance that emerged out of World War Two had two key features. First, major currencies were tied to the dollar through "fixed but adjustable" pegs, and the dollar in turn was pegged to gold. And second, capital controls were put in place to limit cross-border financial flows. This system, like the gold standard in the pre-war era, helped facilitate trade but kept the growth of international finance in check.

In contrast, a key pillar of the so-called "Washington Consensus", which shaped global economic policy in the 1990s and 2000s, was a belief in floating exchange rates and open capital accounts. This loosened restrictions on central banks' ability to create money (subject to them meeting their inflation targets), and then allowed that money to cross borders more freely.

During the third wave of globalisation countries steadily dismantled controls that had previously restricted the movement of capital. In emerging economies, this liberalisation often formed part of IMF programmes. Between 1990s and 2000s, everywhere from Latin America and Asia to Africa and Eastern Europe loosened restrictions on capital flows. But what's less appreciated is the extent to which advanced economies also liberalised capital accounts. This increased openness to cross-border financial flows is illustrated in various measures of capital account openness, such as the one produced by Menzie Chin and Hiro Ito. (See Chart 4.1.)

Chart 4.1: Chin-Ito Measure of Capital Account Openness (Simple Avg. DMs & EMs)



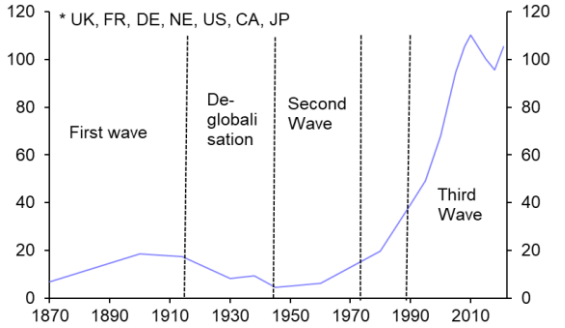
Sources: Obstfeld and Taylor (2004), Maddison, IMF, CE

The defining features of financial globalisation

As the pendulum now swings from integration to separation, three points are worth keeping in mind.

First, integration in the 1990s and 2000s produced a complex web of cross-border financial claims that wasn't a feature of previous waves of globalisation. We don't have long or accurate data on global capital flows, but have been able to construct a series tracking external assets held by advanced economies going back to 1870. This shows that, while the external assets of these economies rose in the first two waves of globalisation, the increase was modest. In contrast, during the third wave of globalisation the external assets of advanced economies rose from ~30% to over 100% of global GDP. (See Chart 4.2.) In addition to the potential for economic dislocation, fracturing could also cause significant financial dislocation.

Chart 4.2: Advanced Economies' External Assets (% of GDP)



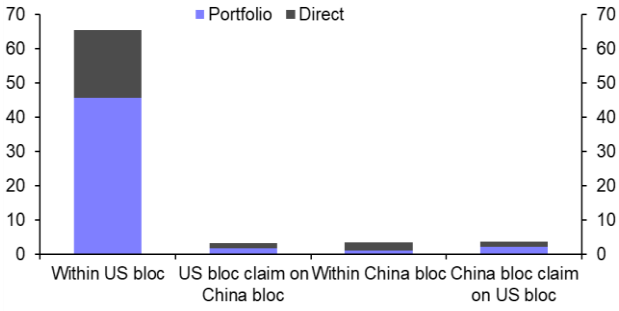
Sources: Obstfeld and Taylor (2004), Maddison, IMF, CE

Second, the cross-country distribution of those claims is critical. In Chapter 1, we split the world into three camps: countries that align with the US, countries that align with China, and countries that are non-aligned.

The greatest risk stems from the possibility that fracturing leads to efforts to unwind cross-border claims between the US- and China- aligned camps. Financial integration between these two groups has increased significantly over the past three decades. This is illustrated most vividly by China's holdings of US Treasuries, which have increased from $60bn in 2000 to $1100bn in 2021. But financial integration has in fact been much broader. By 2020, claims of China-aligned countries on US-aligned countries were $3.6tn according to IMF data. Claims of US-aligned countries on China-aligned were somewhat smaller, totalling $3.1tn.

However, despite this inter-bloc integration, the bulk of cross-border financial claims lie between US-aligned countries. These increased from $35tn in 2009 to $65tn in 2020. As of 2020, cross-border financial claims within the US-aligned bloc are ~18 times larger than claims of China-aligned countries on the US-aligned bloc. (See Chart 4.3.)

Chart 4.3: Stock of Cross-border Claims Outstanding ($trn, as of 2020)



Source: IMF

This is not to underplay the significance of the integration between the US and China over the past three decades. A rapid and/or disorderly unravelling of financial ties between the US and China-aligned blocs would have severe economic

and market consequences, which we will explore later in this chapter and in Chapter 8.

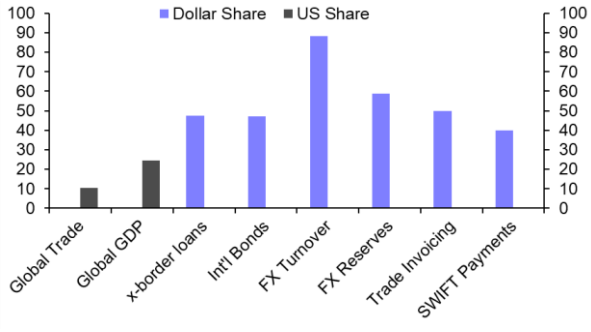
But the fact that claims within the US-bloc far outweigh claims of China (and China-aligned countries) on the US and its allies is an important counterweight to the popular notion that the defining feature of financial globalisation over the past thirty years has been China's accumulation of US assets.

The centrality of the US

This brings us to the third point, which is that, contrary to widespread opinion, financial globalisation – and in particular the accumulation of external assets by China – has not tipped the balance of global financial power in Beijing's favour. In fact, financial integration over the past three decades has increased the importance of the US within the global financial system.

This is because the bulk of cross-border flows have been denominated in US dollars. Once again, we don't have comprehensive data on the currency denomination of all cross-border flows or claims. But the data we do have reveal the dollar's dominance. Around 60% of foreign exchange reserves, 50% of trade invoices and 40% of payments via the SWIFT messaging system are denominated in dollars. (See Chart 4.4.) This far outweighs the US' share of either global trade or global GDP.

Chart 4.4: US Dollar Share Of Global Economy, Trade & Finance (%, as of 2019)



Source: BIS

The dominant use of the dollar in cross-border transactions has increased the centrality of the US within the global financial system. In effect, the US now provides the financial plumbing for the world economy. This in turn has conveyed enormous power and influence on the US. This was illustrated in the financial panics of 2008 and 2020, when the Fed ended up acting as the de facto lender of last resort to the global banking system and, perhaps even more starkly, by the ability of the US and its allies to impose heavy financial sanctions on Russia in the wake of the war in Ukraine.

Stepping back, then, three overarching points are worth stressing in the context of global fracturing:

1. The latest wave of globalisation contained a large financial element, which was much more prominent than in earlier waves of globalisation.
2. This has left a legacy of significant cross-border financial claims. Claims of China-aligned countries on U.S.-aligned countries have increased substantially over the past three decades, but most claims still lie between US-aligned countries.
3. The widespread use of the dollar in cross-border transactions has reinforced the US' central position within the global financial system, and bestowed enormous power and influence on its policymakers.

This frames our assessment of how the global financial system has grown over the latest wave of globalisation and how it is likely to evolve. We now consider how these financial relationships and dependencies will shape the period of global fracturing that we anticipate over the next decade.

Financial globalisation is already under strain

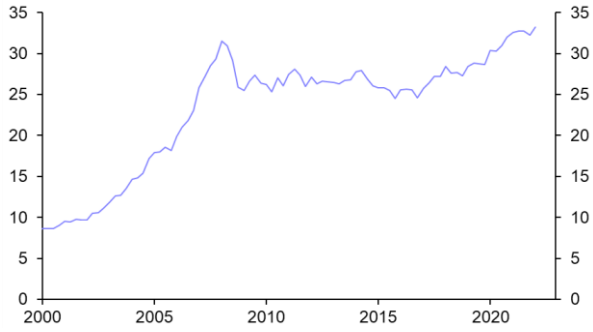
To some extent, the trend towards ever more financial integration has already started to stall. The heyday of the most recent wave of globalisation – especially in finance – was arguably the 1990s and 2000s. The financial industry experienced a secular boom as new technology and financial innovations were put to

use and regulatory barriers, both within and between countries, were dropped.

In addition to the growth in trade and FDI driving more demand for cross-border finance, investors came to favour more internationally diversified portfolios, so a greater share of global savings took the form of cross-border investment. The banking sector saw a huge surge in the amount of gross cross-border claims as short-term funding markets became larger and more complex. Meanwhile, markets in new financial instruments like interest rate swaps developed largely as "over-the-counter" transactions between a handful of large globally active banks that emerged through a spate of cross-border mergers in the early 1990s to 2007.

The 2007-09 Global Financial Crisis (GFC) brought some of those trends to a screeching halt, and slowed down many others. The banking sector went through a near-death experience and emerged at least somewhat chastened. Since 2008, aggregate cross-border claims within the banking sector, have not grown at anything like the pace that they did over the previous decades in nominal terms, and have dropped as a share of global GDP. (Chart 4.5.)

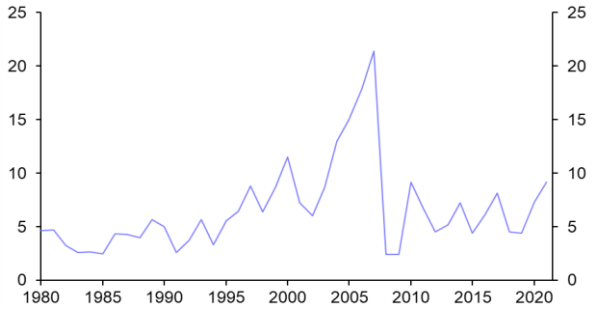
Chart 4.5: Consolidated International Bank Claims ($trn)



Source: BIS

Other parts of the financial industry weathered the crisis better. But by most measures, financial globalisation slowed markedly in the 2010s. Gross global capital flows dropped from a peak of 20% of world GDP in 2007, to 10% of world GDP in 2021. (See Chart 4.6.)

Chart 4.6: Gross Global Capital Flows (% of GDP)



Sources: IMF, World Bank

There are several plausible explanations for this slowdown in financial globalisation. One is the slower pace of global trade growth over the past decade. All other things equal this implies slowing demand for short-term cross-border finance.

The reduced growth of financial flows may also reflect the fact that many of the gains from the IT revolution in finance have already been reaped. While computing power and connection speeds have continued to improve rapidly, the past decade has arguably not seen a step-change in technological capabilities comparable to the advent of personal computers and the internet. Likewise, innovation in the financial industry appears to have slowed down.

Perhaps more importantly, the regulatory response to the GFC has made the policy environment less supportive of financial globalisation. Stricter capital and liquidity requirements on major international banks under Basel III/IV and the new "G-SIB regime" imposes constraints on cross-border activity. Many globally active banks, in particular European ones hit hard by the double blow from first the GFC and then the euro-zone crisis, retrenched their business models by focusing on domestic markets.

The post-GFC policy response also de-emphasised the "Washington consensus" that favoured unrestricted capital flows, deregulation, trade liberalisation, and floating currency regimes. Over the past decade, the IMF has

(rightly) focused more on the potentially de-stabilising effects of flighty capital flows and embraced some forms of capital controls under the guise of "macroprudential" measures. While most major economies have maintained open capital accounts, and cross-border holdings of equities and bonds have continued to increase, the trend towards ever more financial market integration has slowed markedly.

China's path has changed

Meanwhile, policy in China has shifted. In the immediate aftermath of the GFC, China continued its push to integrate into the global financial system. The PBOC reduced capital controls and made the renminbi exchange rate more flexible. The long-term aim appeared to be making the renminbi a major internationally used currency, highlighted by the drive to get it included in the IMF's Special Drawing Rights (SDR) basket of reserve currencies. That goal was achieved in 2016.

But in 2015-16, China suffered around $1trn of capital outflows, in part due to the opening-up campaign backfiring, and policymakers reversed course. Capital controls on private entities were re-tightened. While there have been some limited steps to allow greater *inflows* of financial capital, the prospect of China fully opening its capital account anytime soon looks remote. More recently, China's policies in the wake of the pandemic – in particular the indefinite "zero-COVID" approach and the "common prosperity" drive – have reinforced the sense that policymakers are prioritising stability and control.

The upshot, then, is that on most measures financial globalisation has already peaked. This raises two questions. First, how will global fracturing affect financial globalisation and cross-border capital flows in future? And second, to what extent will fracturing undermine the importance of the dollar and the US within the global financial system?

Fracturing and cross-border flows

One way to think about how fracturing will affect cross-border capital flows is break down those flows into four categories: those related to trade, those driven by physical investment (FDI), those reflecting portfolio investment, and those associated with internationally active banks. Our sense is that the underlying trends within each of those categories point towards less financial globalisation and, in particular, reduced financial links between the US- and China-led blocs.

As we set out in Chapter 2, trade is likely to stagnate relative to global GDP, around 30%. This suggests that the need for cross-border financial flows to support the exchange of goods and services will grow in line with GDP (unlike recent decades, when trade grew faster than GDP). And to the extent that firms shift away from long and complex supply chains that may prove fragile in a less stable world, the amount of cross-border finance per unit of trade, on average, may fall, suggesting financial flows related to trade will fall relative to GDP.

Likewise, FDI flows will probably also fall relative to GDP, for similar reasons. Firms are already facing a new, less favourable trade-off between minimising costs and ensuring stable supply chains, with many starting to place greater priority on the latter. And policymakers will push for reshoring production, or at least locating it in friendly countries, in particular in critical sectors such as medical and defence-related goods. In the wake of the pandemic, governments have sought to ensure the capacity to produce vaccines and other essential medical goods. The recent US CHIPS Act provides $39bn of subsidies for the establishment of advanced semiconductor factories in the US. More such measures are probable.

Portfolio flows will probably also retrench to some extent. The nominal value of cross-border portfolio investment roughly doubled from 2010 to 2021, to around $60trn. In part, that simply reflects the very low interest rates of that period, which boosted asset values – an effect which is in

the process of at least partly unwinding as central banks ratchet up interest rates. But investors will have to reassess the trade-off between diversification and the growing risks of foreign investments. The financial sanctions imposed on Russia after the invasion of Ukraine have highlighted geopolitical risk. Investors are likely to be more wary of investing in countries where they may become subject to similar measures.

Finally, as we discussed earlier, flows related to banks have already slowed markedly after the GFC. The ten largest banking systems have broadly the same nominal stock of outstanding cross-border claims (~$25trn) in 2021 as they did in 2010, even though nominal global GDP has increased by more than 40% in that time. In a more fractured world, cross-border banking claims will probably remain stagnant as both investors and regulators favour safer domestic markets.

All this suggest that the aggregate stock of cross-border financial claims relative to GDP will plateau around its current level. But our baseline scenario is that cross-border flows remain significant, and that outstanding claims remain at a historically high level relative to GDP.

Perhaps more importantly, the composition of aggregate flows and stocks will shift towards fewer inter-bloc links. While financial links between the China- and US- blocs are an order of magnitudes smaller than links within the US-aligned bloc, cross-bloc links continued to grow rapidly in the decade between the GFC and the pandemic. The stock of US-bloc portfolio and direct investment claims on China roughly doubled from 2009 to 2020, reaching $3.6trn. Until recently, the common assumption had been that this trend would continue. Our view is that a degree of financial decoupling is more likely, especially in security-related sectors.

The role of the dollar

What about the role of the dollar and the centrality of the US financial system within the global economy? One strand of thought holds that fracturing will bring an inevitable end to US financial hegemony. While a lot of attention has focussed on the dollar's future as a reserve currency, it is its role as the dominant currency for settling cross-border transactions – and by extension the US financial system's role as the plumbing for the world economy – that is more important from the perspective of geo-political influence. Yet some argue that the extent of the dollar's dominance may become a source of vulnerability in a fractured world.

As we noted earlier, around half of cross-border transactions are settled in dollars, despite the fact that the US accounts for only 10% of world trade. That disproportionate share means that the US wields enormous power over global trade and financial flows. But it has now brought that power to bear against Russia – and in doing so has also exposed how vulnerable other economies are to the financial mercy of Washington. Some commentators have suggested that this will lead to a more general push by China and its allies to disentangle themselves from the US financial system and reduce their use of the dollar.

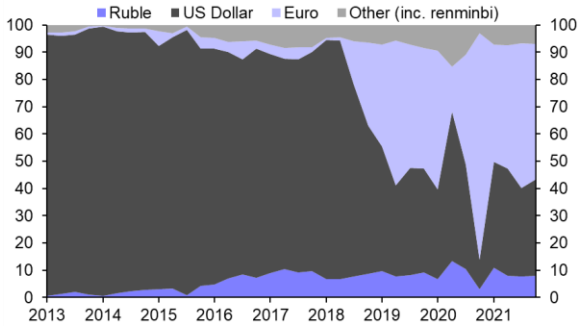
But attempting to do so wouldn't get them very far. An international currency has to fulfil three functions: it must act as a unit of account, a medium of exchange, and a store of value.

Any currency could act as a unit of account for the purposes of global trade: exports can be priced in renminbi, real or rand, just as easily as they are in dollars. But for a currency to be widely used as an international medium of exchange, it must be readily and cheaply available around the world. In turn, that depends on foreigners being willing to hold it in large volumes: in other words, it must function as a store of value. Foreign demand for dollar assets helps to create the deep and liquid markets that underpin the dollar's global dominance.

In principle, the dollar is not the only currency that could perform this role. But any alternative would need to share similar attributes: it would be backed by strong and stable institutions, and

issued by a central bank operating an open capital account and willing to act as a lender of last resort. Neither the renminbi nor the ruble meets those criteria, explaining why, as China and Russia have tried to reduce their use of the dollar in bilateral trade, they have adopted the euro, rather than the ruble or renminbi. (See Chart 4.7.)

Chart 4.7: Currency Used for Russian Exports to China (%)



Source: Central Bank of Russia

And in practice, even the euro has struggled to make headway against the dollar where these geopolitical pressures aren't present: network effects push in favour of the incumbent dollar, and the euro's institutional underpinnings remain in question. The need to act as a store of value also explains why Bitcoin (or other cryptocurrency), with its extreme volatility, is unlikely to supplant the dollar.

The sanctions imposed on Russia will accelerate the development of bilateral trading blocs that use alternative currencies. In particular, it's likely that over the next decade more trade between China and its allies will take place in renminbi. But this bloc is likely to account for a relatively small share of the global economy and even then, it's unlikely that the majority of its trade will take place in renminbi. Accordingly, we do not believe that fracturing will supplant the primacy of the dollar and the US within the global financial system.

What unwinding financial links might look like

So in our central scenario, gross capital flows will be a smaller, but still substantial, share of global GDP than in recent decades. The dollar remains the cornerstone of the global financial system, even if China and others seek to carve out alternatives. But what about a more extreme form of fracturing? Before examining scenarios in which that could occur, it is worth considering the mechanisms through which financial links unwind and what history can tell us. In principle, reducing the stock of cross-border financial claims can take many forms. Loans and other funding arrangements may not be renewed when they expire (or, in some cases, the borrower defaults). Bonds and equities can be transferred relatively easily, provided there are willing buyers. Direct investments in fixed assets such as factories and property are generally not actively traded like financial assets but can be divested over time (or, in extreme cases, be confiscated by the host nation).

Such transactions take place all the time. In recent decades, transactions in which investors acquire new claims on foreign economies have exceeded transactions in which they reduce claims on the other economies. If that balance were to reverse, cross-border financial links would start to shrink. Even if nominal cross-border claims did not decline in absolute terms, if they were to grow by less than nominal GDP, the ratio of cross-border claims to GDP would fall.

The only period over the past 150 years in which cross-border financial links in the global economy *as a whole* have fallen relative to GDP is from 1914 to 1945, a period of two global wars and severe economic dislocations across the major economies. This was a period of broader "deglobalisation": international trade fell, migration flows slowed, and the rules-based international order faltered.

But individual economies have gone through periods in which financial links with the rest of the world have fallen. In particular, there are several examples in recent decades of individual economies where cross-border financial links have shrunk significantly as a result of political decisions. The near-instantaneous exclusion of

Russia from the western financial system after its invasion of Ukraine is the most recent and dramatic example. This resulted in a combination of defaults, asset freezes and forced sales (a process which is still ongoing) that is similar to what occurred at the outbreak of the two world wars in 1914 and 1939. Going further back, Cuba in 1960, Iran in 1979, Iraq in 1990, and Venezuela in the early 2010s all suffered a similar fate after political ruptures with the US. The global impact in those cases was limited, as all were smaller economies and less integrated with the global financial system than Russia was by 2022.

Two key scenarios

While most policymakers in major economies appear to understand that a period of chaotic deglobalisation like that in the 1930s would be a zero-sum game that would leave everyone worse off, it is a worryingly plausible outcome.

There are (at least) two clear potential triggers for such an outcome. The first is a decisive turn towards isolationist policies in the major advanced economies, imposing tariffs and/or capital controls in the name of protecting domestic markets from foreign competition and influence. This could take the form of a break between the US- and China- led blocs, or it could be a more widespread splintering between previously friendly countries. It is also possible that a major reduction in financial links could take place while most trade links were maintained, if governments sought more autonomy over fiscal and monetary policy by limiting capital flows. The second trigger is a direct confrontation between the US and China, most likely over the fate of Taiwan.

Both scenarios would result in a significant and disorderly unwinding of cross-border financial claims. The first scenario would, in effect, be a modern-day incarnation of the financial deglobalisation that took place in the first years of the Great Depression. Tariffs and capital controls would disrupt economic activity, with countries relying most heavily on trade suffering the worst. The unravelling of the enormous cross-border financial web built up between advanced economies would send asset values into a tailspin, and render large chunks of the financial sector obsolete.

The second scenario would result in a rupture between China and the US-led bloc similar to that which occurred between Russia and the West earlier this year. It would be a seismic event; the economic costs and financial losses would be huge. China's economy is an order of magnitude larger than Russia's, and the second round effects on the global economy would be unpredictable. The immediate effects on financial links would resemble what occurred in 1914 and 1939: both sides would seize physical assets belonging to the adversary, and renege on financial obligations.

In both cases, there would be two broad effects. The first would be enormous dislocation within the global financial system, with a high probability of liquidity squeezes that would need to be met with large-scale emergency lending and asset purchases by central banks. In the "isolationism scenario", this would largely be left to individual countries or regions to manage as best they can: there would be limited hope of international coordination or help from the IMF. In the US-China rupture scenario, the Fed would likely step in as the ultimate lender of last resort for the US-aligned bloc, aiming to maintain at least some of the functions of the global financial system.

The second effect would be large and widespread financial losses as cross-border assets were dumped in fire sales, or simply confiscated, and their prices collapsed. The effects on the global economy would be devastating. (See Chapter 7.) Living standards would drop dramatically. It would probably mean a surge in inflation and higher risk premia. In the absence of policy action, real interest rates would rise, reducing the present value of domestic financial instruments and property. (See Chapter 8.) But central banks

would most likely step in, using their balance sheets to counter such effects – ushering in an era of financial repression far more severe than the 2010s.

Conclusions

The upshot is that many of the tailwinds that drove the globalisation of finance have stalled, and some are turning into headwinds. We see three main conclusions for the evolution of the global financial system over the coming decades.

First, gross cross-border financial flows will probably slow further over coming year and the stock of outstanding claims as a share of global GDP will plateau around current levels. And the composition of global capital flows and cross-border claims will shift away from increased inter-block links in favour of intra-block transactions, especially in politically sensitive areas such as technology and essential goods. That said, we don't anticipate an outright decline or major unravelling of the complex web of financial claims that has built up over recent decades. We think policymakers will be able to maintain sufficient common ground to stave off a 1930s-style financial and economic meltdown. Second, we think China's capital account remains mostly closed and its financial links to the US-aligned bloc will shrink. China's leaders will prioritise political control of their economy and financial system over carving out a large international role for the renminbi. But the unwinding of existing claims will be focussed on security-related sectors. Given the still-substantial dependencies between the two sides, it would take a big escalation to see a broader financial decoupling.

Third, in most scenarios the dollar will remain the dominant currency in the global financial system for a long time yet. China will aim to reduce its reliance on the dollar and the US financial system, and may be able to conduct more of its trade and financial links through renminbi-based transactions within its bloc. But the network effects associated with incumbency provide a significant buffer for the dollar and the alternatives to it all have major flaws.

In short, the global economy and financial system may be stuck in an awkward half-way house. Financial links will remain large relative to GDP but integration will stagnate. Global finance will increasingly split into two unequal but rivalling camps that are still co-dependent. And, for better or worse, the dollar will remain the dominant global currency, giving US policymakers significant sway over core financial markets and infrastructure.

5. The threat to migration flows

Vicky Redwood, Senior Economic Adviser

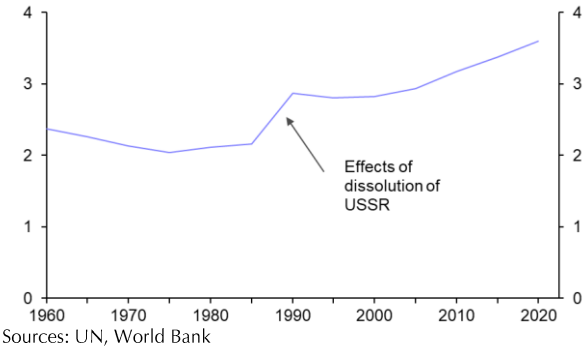
The globalisation witnessed over recent decades has manifested itself in increased flows of trade, capital and people. We have already discussed what the fracturing of the world economy might imply for the first two of these; now we explore what it will mean for global migration flows. We have stressed that fracturing does not simply mean the wholesale reversal of the globalisation in recent decades. And migration is one of the elements of globalisation that could survive largely intact, with overall migration flows even continuing to rise. That being said, governments could increasingly restrict the specific types of migration that are most beneficial for global productivity growth.

The globalisation witnessed over recent decades has manifested itself in increased flows of trade, capital and people. We have already discussed what the fracturing of the world economy might imply for the first two of these. In this chapter, we explore what it will mean for global migration flows. As we will explain, this will hinge largely on the policy choices that national governments make.

Migration so far

One key aspect of globalisation over the decades has been a significant rise in migrant flows. The age of modern mass migration began during the first wave of globalisation in the second half of the 19th century, enabled by a fall in transport costs. And it received a particular boost during the most recent wave of globalisation. Chart 5.1 shows the proportion of the world's population living outside their home country. This was steady at just above 2% between 1960 and 1990, at which point it was pushed up by the effects of the dissolution of the USSR. It then picked up from around 2000 and before the pandemic had reached 3.6%.

Chart 5.1: International Migrants as a % of World Population



Sources: UN, World Bank

While it remains difficult to assess the full extent of the pandemic's impact on migration trends, the UN estimates that net migration halved during 2020 and 2021. But it is now recovering; indeed, in some countries where restrictions have been

moved, there are even signs of "catch-up" migration, as migration rises above pre-pandemic rates (e.g. Canada).

Push and pull factors to remain in place

So what impact should we expect fracturing to have on this trend towards greater migration? The answer could be not much. After all, the fracturing of the world economy should not do much to diminish the various push and pull factors that provide an incentive for migration.

As Table 5.1 shows, the factors that push people towards leaving their home include poverty, war and weather-related reasons. These are unlikely to wane. In fact, fracturing could lead to more wars. Meanwhile, the number of so-called "climate refugees" is likely to rise, even if countries mitigate the extent to which global temperatures rise further. One-off extreme weather events (such as hurricanes) tend to lead to only a temporary rise in migration over short distances. But a permanent rise in migration is likely in countries disrupted by, for example, regular flooding or falling crop yields.

Table 5.1: Factors Affecting Migration

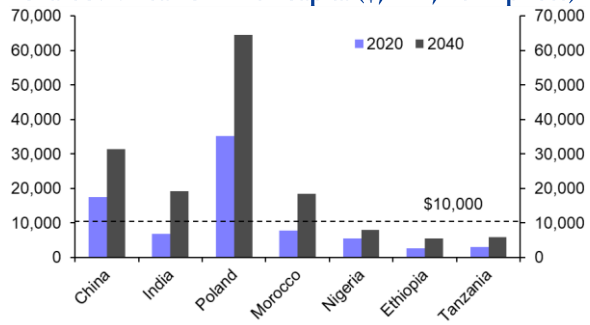
Push factors	Pull factors
Poverty	Higher incomes in other countries
Lack of jobs	Higher employment elsewhere
Political crisis/war	Political stability
Extreme weather events	Better climate
Rising temperatures	Better services including education
Lack of services	Links with family elsewhere
	Geographic proximity

Source: Capital Economics

Admittedly, rising incomes in some of the poorer countries (including China) that have driven migration in recent years will weaken the incentive to emigrate. But the gap with per capita incomes in developed economies such as the US will generally still be very large. Moreover, even if the economic incentive to migrate out of some of the richer EMs were to slow over the next couple of decades, per capita incomes in many African countries would reach a sweet spot for migration – high enough to mean people have the resources to migrate, but still low enough that they will have the incentive to do so.

Research suggests that the point beyond which the probability of emigrating due to income levels starts to fall is when GDP per capita reaches around $10,000 international dollars. Some of the countries that have been big drivers of migration in the past – such as China and Poland – have already reached this level. In contrast, many countries in Africa (in Eastern and Western Africa in particular) will, in our forecasts, stay below this threshold for some decades yet. (See Chart 5.2.)

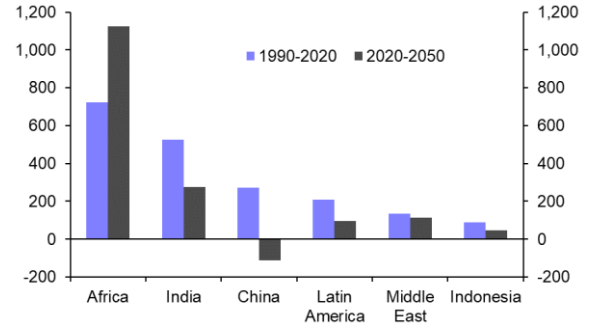
Chart 5.2: Real GDP Per Capita ($, PPP, 2021 prices)



Sources: Refinitiv, Capital Economics

This is especially important, given that it is Africa that is set to drive population growth over the coming decades. Even over the past three decades, Africa saw a bigger rise in its population than other major EM regions. And the gap is likely to widen significantly over the next 30 years. (See Chart 5.3.) Many of these extra people will be low-skilled workers and sub-Saharan African economies are generally not well placed to absorb large numbers of low-skilled workers.

Chart 5.3: Change in Population (mns)



Source: UN

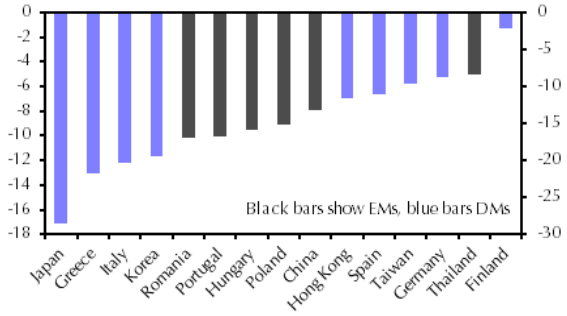
The other "pull" factors for migration will remain strong too, such as links with migrant populations in another country. Meanwhile, education is a big driver of migration flows in many cases and the desire to get educated abroad is unlikely to drop off as countries get richer, unless domestic universities become as prestigious as overseas ones.

Economic incentives versus security concerns

So we think that the incentives for people to migrate will be as strong as before the pandemic, if not stronger. The question, then, is whether in this new fractured world, governments will allow migration flows to continue.

There are clear economic incentives for many countries to allow more migration to offset the impact on their economies and public finances of ageing domestic populations. Indeed, Chart 5.4 shows that under the UN scenarios of zero net migration, many countries will see outright falls in their population over the coming decades. This includes most DMs but also some EMs (including China, Korea, Russia and some other Eastern European countries). In many of these, to prevent the population from shrinking, migration would need not just to continue, but to rise from current levels.

Chart 5.4: % Change in Population under Zero Migration scenario, 2020-50



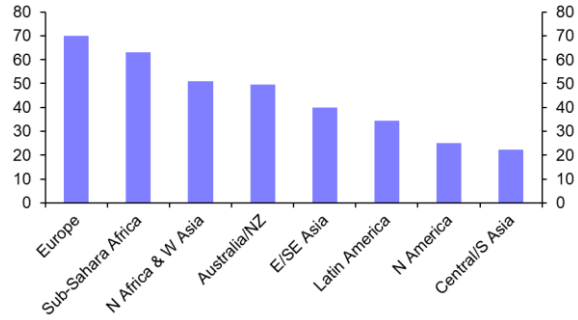
Source: UN

Moreover, the labour market shortages that are currently being seen in many countries also argue for allowing more migration to alleviate wage pressures and prevent interest rates having to rise so far in the affected economies.

The key question, then, is whether fracturing means that these economic incentives to allow migration flows to continue or even strengthen are trumped by security concerns and hostility towards opposing economic spheres.

Admittedly, geographical proximity is a key factor driving where migrants go, with many migrants staying within their geographic region. (See Chart 5.5.) So even if countries did impose barriers on migrants from another economic bloc, they might be more willing to allow the migration that happened *within* the bloc to carry on as normal.

Chart 5.5: % of Migrants Staying Within Region



Sources: UN, Capital Economics

However, there are still sizeable migration flows *between* economic blocs, as illustrated by Table 5.2 which shows the top 20 migrant corridors. These show the number of international migrants

born in the first country and now residing in the second (and therefore show the cumulative impact of past migration). We have coloured these countries to show whether they are most likely to be China-aligned (red), US-aligned (blue) or neutral (green). Over half involve countries within the same bloc; however, 7 of the 20 involve one China-aligned and one US-aligned country.

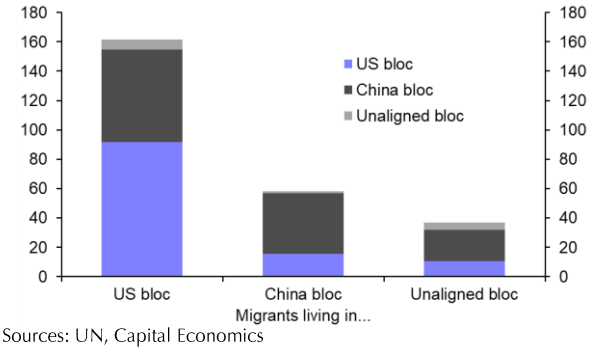
Skilled migrant restrictions might hit innovation

If countries decide to restrict migration flows, the economic impact will depend crucially on which *type* of migrant that countries restrict.

It is possible that, in a more extreme scenario, fracturing results in a rise in global tensions that triggers a general hostility to *all* migration from

other blocs. In that case, we might see countries impose blanket restrictions on all types of people and workers. Chart 5.6 shows that inter-bloc migration has historically been more important for the US-aligned bloc than the China-aligned bloc. This suggests that any drop in migrant flows would be bigger for the US-aligned bloc.

Chart 5.6: Stock of Migrants Overseas (Millions)



Sources: UN, Capital Economics

That would undermine the potential for migration to prop up the growth of the workforce in countries with adverse demographics. For example, one obvious source of migrants in future years for European countries with ageing populations is Africa. But in a fractured world, most African countries are more likely to fall into China's rather than Europe's sphere of influence.

In a yet more severe scenario of fracturing even *within* blocs, then countries might erect barriers to all types of migration from all countries, prompting all migration flows to plummet. That would most affect those mainly developed economies with a high immigration rate, including Australia and Canada.

Table 5.2: Top 20 Migration Corridors

Migration within same bloc	Migration involving one neutral country	Migration between US-leaning and China-leaning countries
• Mexico-US	• India-UAE	• Syria-Turkey
• India-US	• India-Saudi Arabia	• Ukraine-Russia
• Afghanistan-Iran		• Russia-Ukraine
• Kazakhstan-Iran		• Bangladesh-India
• Kazakhstan-Russia		• China-US
• Russia-Kazakhstan		• Venezuela-Colombia
• Poland-Germany		• Algeria-France
• Myanmar-Thailand		
• Turkey-Germany		
• Indonesia-Saudi Arabia		
• Afghanistan-Pakistan		
• Philippines-US		

Sources: UN, Capital Economics

In practice, we doubt that the more benign type of fracturing that we expect will lead to migration flows being curtailed in such a dramatic way. If we do see a big drop in unskilled migration flows, this is more likely to be due to policy decisions driven by domestic considerations (such as the impact of higher immigration on labour markets and domestic infrastructure) rather than fracturing. Note, though, that these domestic considerations are to some extent driven by the same overarching factor that is driving fracturing – namely a shift in the political climate to recognise there are limits to what globalisation can achieve.

The chances are higher, however, of fracturing prompting countries to introduce restrictions on migration in sectors or fields deemed most important to national security.

Countries might worry that allowing in students or workers with particular skills gives them access to domestic technology and know-how that they will take back home and deploy in a way that is detrimental. Accordingly, we could see more

specific measures to limit the flows of students, skilled workers or workers in high-tech industries.

The numbers of migrants involved would probably not be big. To put things into perspective, the number of Chinese students in higher education in the US in 2019 (before the pandemic pushed down numbers) was around 370,000. That accounted for less than 2% of all US higher education student numbers and was equivalent to less than 1% of the total number of students studying at Chinese higher education institutions.

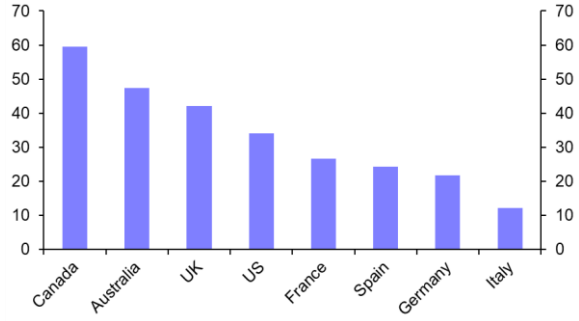
Meanwhile, many countries already have some restrictions on skilled migration, which keeps their numbers relatively low. For example, the number of US H1-B visas (a main way in which graduate level workers in occupations that require specialist skills enter the US) is capped at 85,000 and is consistently over-subscribed. That is equivalent to less than 0.1% of US employment.

Accordingly, additional targeted migrant restrictions would not have a big impact on the size of the workforce. Nonetheless, even if the numbers affected might not be that big in aggregate, these types of migrants are concentrated in those sectors that are most important for innovation and technological growth. So, restrictions could still have a detrimental impact on productivity.

There is a wealth of empirical studies showing that skilled migrants give a disproportionate boost to innovation, entrepreneurship and technological progress. One of the most notable historical examples of this is the boost to scientific progress in the US from the migration of Jewish scientists from Nazi Germany. Meanwhile, skilled migrant entry has led to a rise in patenting by ethnic Indian and Chinese innovators. At the same time, there is little evidence that skilled migrants have any negative impact by displacing domestic skilled workers; in fact, they probably *boost* native innovation through the benefits of clustering, collaboration and diversity of thinking.

The countries that benefit most from skilled migrant inflows are the US, Canada, Australia and the UK. As Chart 5.7 shows, these countries have relatively high shares of graduates that are educated to university level.

Chart 5.7: % of Immigrant Population Aged 15+ Educated to Tertiary Level, 2015/16



Source: OECD

And they have a high share of engineers and scientists that were born abroad. In Canada, 34% of workers in scientific research and development services are foreign born (versus 24% of national workforce) rising to 41% of engineers and more than 50% of chemists. And in Australia, some 56% of university-qualified STEM workers are foreign-born (versus about 29% for the overall population), with the share reaching 70% in the IT sector on its own.

A similar picture can be seen in student numbers, especially in the US which has 16 of the world's top 20 ranked universities. While overseas students account for around 5.5% of overall US higher education students, they account for 30% of science and engineering students and over 60% in some areas like computer science. (See Table 5.3.)

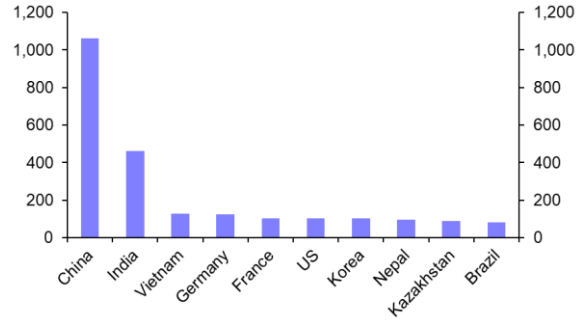
Table 5.3: Composition of US graduate students, 2020

Degree course	% that are international students
All subjects	5.5
Science & engineering	30.2
Petroleum engineering	70.8
Computer engineering	63.8
Computer science	62.4
Ind. & manuf. engineering	60.4

Source: National Science Foundation

Of course, as with migration as a whole, not all skilled migration is between opposing economic blocs. So, if countries maintained migration with countries within their bloc, then much of this skilled migration would continue unaffected. Indian workers, for example, make up the biggest share of immigrant STEM workers in the US. However, China is the second biggest group. And China tops the league when it comes to the number of its people studying overseas. (See Chart 5.8.)

Chart 5.8: Number of Citizens Studying Overseas (000s, 2019)



Source: OECD

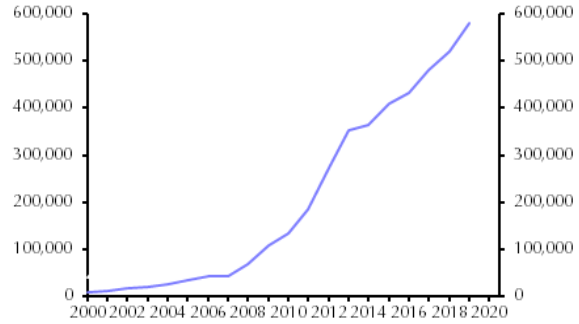
Brain circulation, not brain drain

Restrictions on the migration of skilled workers would not just hit productivity in the developed countries that typically receive such migrants. Skilled migration promotes productivity in both the destination country and the country of *origin*. So restrictions would also adversely affect the countries that would otherwise have *sent* migrants.

The country of origin benefits from migration in part because the lure of emigrating incentivises younger people to get well-educated. More importantly, some migrants return to their native country, taking knowledge and connections back with them and boosting productivity growth in their home country. (Indeed, fears of this happening are precisely why the US-aligned bloc might limit migration in the first place.)

The term "brain drain" used to be widespread; now the term "brain circulation" is more accurate. Governments of countries like China and India have introduced major programmes in recent years to attract talent back home. Indeed, Chart 5.9 shows that as the number of Chinese students studying overseas has risen, so too has the number coming back, with those returning playing a key role in sectors such as China's development of artificial intelligence.

Chart 5.9: No. of Chinese Students Returning To China

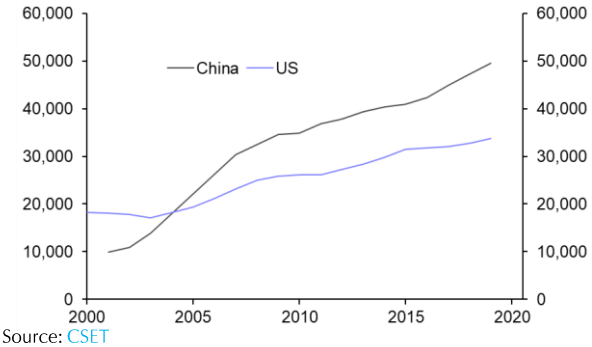


Source: China Statistical Yearbook 2021

Indeed, the adverse impact of skilled migration restrictions would probably hit the China-aligned bloc hardest. The US-aligned bloc is at the forefront of technological progress for a number of reasons other than its ability to attract skilled labour. These include its high spending on R&D, investment in education and strong institutional framework.

That said, China has been catching up on many of these fronts. Indeed, in some areas, it has overtaken the US, for example in the number of STEM PhDs awarded. (See Chart 5.10.) The quality of the qualifications, while arguably still below that in some other countries, has been rising too. Indeed, there is no doubt that China's ability to compete in the STEM sphere has been improving. And going forward, China's centralised regime is arguably best-suited to driving top-down government-directed research, replicating the US's R&D effort that drove the big productivity improvements after the Second World War. (See here.) It is certainly willing to put large amounts of money into achieving its goals. And unlike most advanced countries, it is willing to subsidise and protect domestic innovators until they are strong enough to compete on their own.

Chart 5.10: No. of STEM PhDs Awarded



Source: CSET

Indeed, the extent to which any disruption to skilled migration flows adversely affects productivity in either bloc will in part depend on what actions governments take in the coming years. For China, the question is whether any progress on the technological front can filter through into wider productivity gains throughout the economy. This will hinge on whether China improves the allocation of resources in its private sector, which is bound up in reform of the political system. For the US, the main question is probably what action it takes to regulate or break up the big tech firms, given concerns their monopoly positions are stamping out innovation at the start-up phase.

That said, trumping any of these issues is the question of whether technological progress has simply hit a wall, regardless of how much money or talent is thrown at it. We are relatively optimistic that new revolutions that are hard to foresee always come along. Whether we are right or not is what will have the greatest bearing on the outlook for global productivity growth in the coming years.

6. Fracturing and the impact on geopolitics & institutions

William Jackson, Chief Emerging Markets Economist

In a fractured world, the role of global institutions is likely to decline even further. The consequences of weakened multilateral economic institutions (e.g. the IMF and World Bank) would be felt most heavily in emerging markets by reinforcing the trend of slowing productivity growth. At the same time, a diminished global security architecture could make conflict more prevalent. In extreme cases, this could trigger an abrupt rupture of relations between China and the West with disastrous economic consequences. And even if conflicts did occur that wouldn't have such seismic effects, they could still trigger sporadic bouts of financial market volatility and inflation.

Government policy is playing a key role in driving fracturing, and fracturing will have an impact on global policymaking and institutions too. So, in this chapter we also explore the future of global institutions and multilateralism. There are many angles to this, but we will focus on two that are particularly important from an economic perspective: i) how this will affect global economic institutions; and ii) how this will affect the threat of violence and conflict.

Economic policy anchors risk being hollowed out

Starting with multilateral economic institutions, the likes of the IMF, World Bank and WTO have played an important role in the coordination of economic policy across the globe and in providing an anchor for market liberalisation.

However, the influence of these institutions is on the wane and this process could accelerate if they become enmeshed in global fracturing. Their powers might be hollowed out or weakened as one bloc (or both) perceives them to be unjust, forcing bilateral or regional agreements (e.g. trade deals) or institutions (e.g. development banks) to take their place. Or these institutions could fall into the orbit of one of the major global powers, perhaps akin to how the IMF was seen as heavily influenced by the US during the Cold War (particularly after founding members such as China and Poland pulled out in the late 1940s and early 1950s).

These trends are already underway. At the WTO the US has blocked appointments to the Appellate Body (partly out of concern that it unfairly favours China), making it difficult for the WTO to enforce obligations. While this hasn't been an economic disaster – and the institution had been effectively side-lined anyway – it is symptomatic of the move away from global policy coordination.

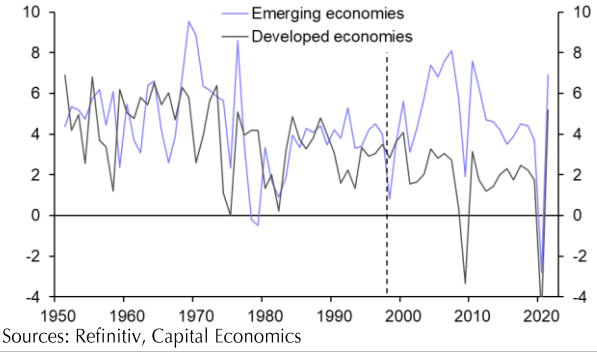
Similar things could occur at other institutions. The US has an effective veto over major decisions at the IMF. And in more extreme cases, a broad coalition of countries in one bloc might be able to secure enough votes on the IMF's Executive Board to prevent decisions that require simple majorities, such as holding back a lending programme to country aligned with a different bloc. The Chinese and Western blocs have roughly the same share of voting rights at the IMF; one bloc might be able to muster a majority by swaying a few countries.

In terms of the economic implications of weaker global economic institutions, an oft-mentioned key is that it would become much harder to coordinate policy responses during an economic crisis. We're not convinced that this is the most important aspect though. For example, much is made of coordinated interest rate cuts in October 2008 amidst the Global Financial Crisis (GFC), but this formed a small part of the overall policy response and rates would have been cut anyway. (These interest rate cuts amounted to around 10% of total interest rate cuts during the GFC for the central banks involved.) If anything, the pandemic-era stimulus was provided more quickly and was larger than the GFC stimulus, even though it lacked coordination.

The key point here is that the optimal economic response at a country level was also optimal at a global level. A lack of global policy coordination will be most keenly felt in areas that require collective action, such as responding to climate change or, indeed, vaccine distribution during the pandemic.

Otherwise, the biggest impact of weakened multilateral economic institutions would probably be felt in emerging markets. After all, these institutions provided an anchor for many of the reforms that paved the way for the 'golden age' of EM growth from the late 1990s to the early 2010s. In that period, EM growth surpassed that of DMs by a considerable margin. (See Chart 6.1.)

Chart 6.1: GDP (% y/y)



Sources: Refinitiv, Capital Economics

In the case of Mexico, for example, the IMF (backed by the US) encouraged the government to liberalise the economy, including the trade regime, during the country's bailouts in the 1980s. This culminated in NAFTA, which came into force in 1994. In a similar vein, IMF deals after crises helped to restore macroeconomic stability in Brazil, Turkey and much of Asia in the 1990s and early 2000s.

Elsewhere, China reduced tariff and non-tariff barriers, and opened sectors to foreign investment in order to meet the conditions set for its accession to the WTO. And the Central and Eastern European economies had the lure of EU membership (with its free movement of goods, capital and labour, as well as large structural funds) to encourage them to pursue transitions to market-based economies.

Of course, given that these reforms are positive for growth, countries could adopt them independently. Indeed, the Asian growth miracle that began in the 1960s in Korea, Singapore, Hong Kong and Taiwan was largely based on home-grown policies. But multilateral institutions often help to spur the adoption of reforms by providing something enviable (be it the need to secure financing during a crisis, or a political goal such as EU membership) that helps to overcome vested interests at home.

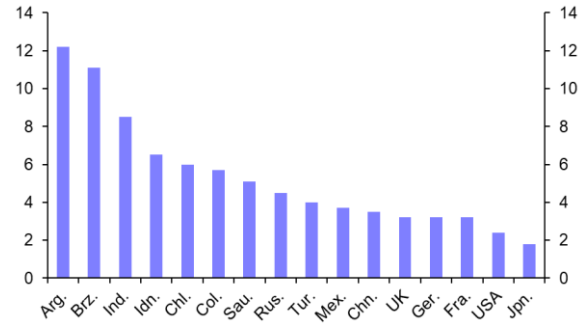
And history suggests that without these external anchors in place, policymakers in some countries might turn inwards instead. The impact of protectionism after the Great Depression, as well as of autarky imposed by the Second World War, was a catalyst for import substitution industrialisation (ISI) policies. These took hold across Latin America as well as parts of Africa and Asia from the 1950s. Generally, ISI was characterised by: trade barriers to protect domestic industry and encourage import substitution; support for national champions; looser monetary and fiscal policy; capital controls; and heavily managed (and overvalued) exchange rates. These policies set the ground for economic turmoil in these regions in the 1980s and 1990s.

EMs still need to liberalise further

To be clear, we're not saying that, in a fractured world, the gains in economic policymaking of the past few decades will be lost. Central bank independence is now enshrined in constitutions, which limits political influence on monetary policy and the ability of governments to monetise budget deficits. In any case, the benefits from taming the high inflation of the 1980s and 1990s are widely acknowledged (and politically popular). And some emerging markets – such as those that are EU member states – will continue to have strong anchors for economic policymaking in place.

However, in many EMs, there is still much more work to do to liberalise economies – and progress is likely to be slower in a fractured world. Labour and product market competition in many EMs still falls well short of that in developed economies. And while trade barriers have come down significantly, with most-favoured nation (MFN) tariff rates falling from double digits in the 1990s to 5% or less now, some countries, such as Brazil, Argentina and, to a lesser extent, India, still have high import tariff rates. (See Chart 6.2.) High tariff rates reduce competition and hinder the efficient allocation of resources that comes from specialisation.

Chart 6.2: MFN Import Tariff on Manufactured Goods (%, Simple Average, Latest)

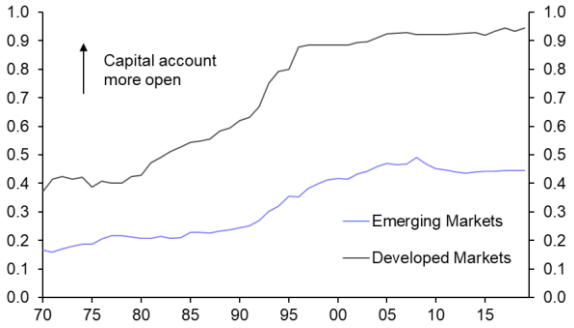


Source: Refinitiv

In previous research, we found 20 cases since 1985 in which major EMs have lowered their average import tariff rate by 5%-pts or more within a few years. The average increase in productivity growth over the next five years was 0.75%-pts, in a context in which EM labour productivity growth averaged 4-5% per annum. (See here.)

In a similar vein, while emerging markets liberalised their capital accounts significantly in the 1990s and early 2000s – which helped to encourage larger foreign investment – this process has since slowed. And capital accounts are, overall, not as open as in developed markets. (See Chart 6.3.)

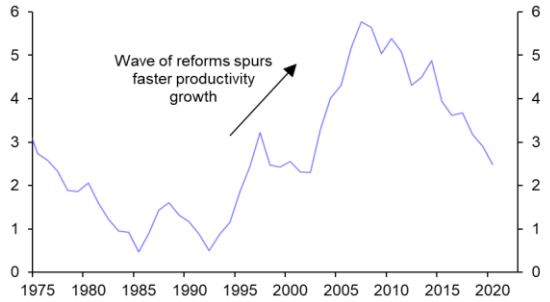
Chart 6.3: Chinn-Ito Capital Account Openness Index (1 = Fully Open)



Sources: Chinn-Ito, Capital Economics

In short, in a world in which the power of global economic institutions has waned, the biggest effects are likely to be felt in those EMs in which there is still ample scope for market liberalisation to increase productivity. That would reinforce the trend of slowing productivity growth that has been underway across the emerging world over the past decade. (See Chart 6.4.)

Chart 6.4: EM Labour Productivity (% y/y)

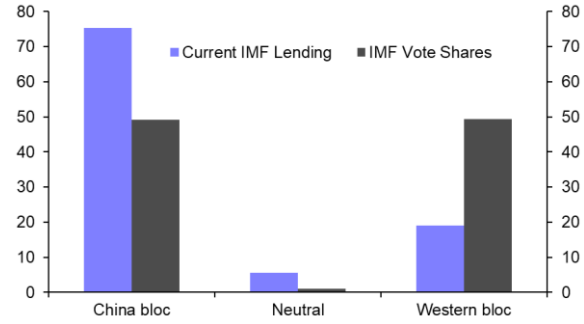


Sources: Conference Board

The issue is likely to be most acute – particularly in the event of severe global fracturing – in EMs that fall within a China-aligned bloc. This bloc includes many of the lowest-income emerging markets where the need for reforms to improve macroeconomic stability (e.g. reduced reliance on foreign currency debt, greater fiscal discipline, tackling inflation) is much higher.

With that in mind, it's perhaps unsurprising that, currently, countries within the China-aligned bloc are more dependent on IMF financing. (See Chart 6.5.) But China might use bilateral lending to bring countries closer to its orbit – particularly if the Fund is perceived to be aligned with the Western bloc. For the debtor country, that lending would come without the politically difficult conditionality of an IMF programme, but it would also reduce the likelihood that the country undertook market-oriented reforms. And the experience of countries like Zambia during the pandemic is that, if they do default, restructuring debts owed to China can be a very lengthy process.

Chart 6.5: IMF Voting Rights & Lending (% of Total)

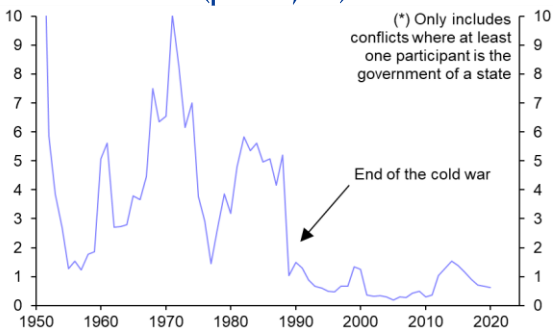


Sources: IMF, Capital Economics

Conflict risks may rise

The second key angle to consider is the risk that fracturing leads to an increased prevalence of violence and conflict. The end of the Cold War coincided with a dramatic decline in levels of violent conflict. (See Chart 6.6.) Superpowers no longer supported proxy wars or vied for geopolitical influence in the same way.

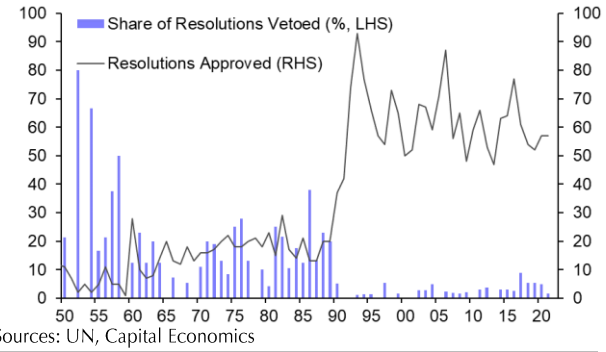
Chart 6.6: Global Deaths in Conflicts* (per 100,000)



Source: OWID

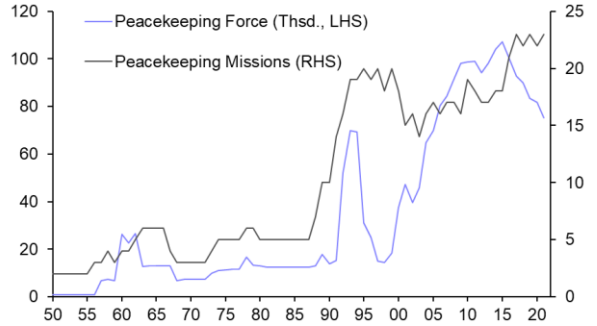
One area where this showed up was on the UN Security Council. The Soviet Union (then Russia) and the US became less likely to veto resolutions, allowing the Security Council to become more effective and adopt more resolutions. (See Chart 6.7.) In turn, the UN was able to play a greater role through increased use of peacekeepers and securing negotiated settlements of wars. (See Chart 6.8.)

Chart 6.7: UN Security Council Resolutions (No.)



Sources: UN, Capital Economics

Chart 6.8: UN Peacekeeping Missions & Force (No.)



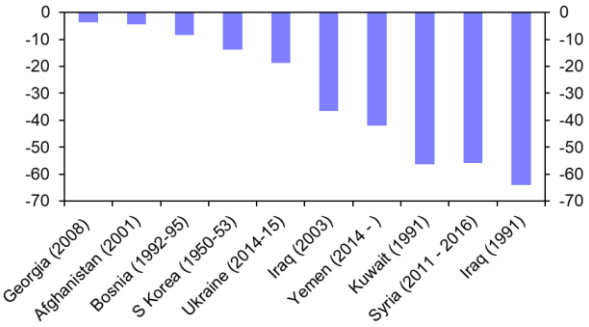
Source: OWID

The world won't return to one divided by the deep ideological schisms of the Cold War. But even so, it is reasonable to think that fracturing could result in major powers contending for influence and, as a result, an increased likelihood of armed conflict. In some ways the War in Ukraine may be sign of this – at its heart, it reflects Russia's desire to have Ukraine within its sphere of influence, and Ukraine's desire to be aligned to the West.

Of course, it might not be whole blocs vying for influence. In the Ukraine war, support for Russia from its allies (such as China) has been lukewarm and (Iran aside) stopped well short of military support. And were, for example, the Western bloc itself to fracture, it's plausible that the US could compete against China or China's bloc, while European countries remained on the sidelines.

In any conflict, there would, of course, be enormous humanitarian and social consequences for the countries involved. And enormous economic costs too. In major conflicts, GDP has typically fallen dramatically (see Chart 6.9), and we estimate that Ukraine's GDP will contract by around 35% over the course of this year. The reconstruction costs would also be very large. (See *here*.)

Chart 6.9: GDP Change During Conflict (%)



Sources: World Bank WDI, IMF, University of Gronigen

And the economic effects wouldn't be isolated to the countries involved. Outbreaks of violence could trigger periods of turmoil in financial markets and in global commodity markets and supply chains due to the conflict itself, sanctions on the party(ies) involved and/or their retaliation to sanctions.

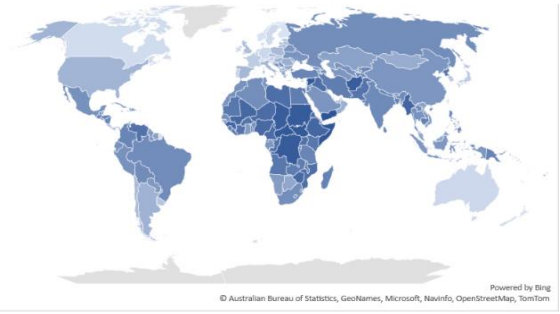
Taiwan is one obvious flashpoint and even efforts by China to coerce Taiwan to submit to its control that fall well short of a military invasion would, at the very least, disrupt global semi-conductor production and trade. And tensions in the Taiwan Strait would have the potential to trigger an abrupt rupture between China and the West, with the major economic ramifications.

Other countries could also prove to be important triggers for a more abrupt global fracturing. It might just take an error of judgement or miscommunication for a conflict to escalate to that point. This is perhaps most likely to occur in countries that are not (yet) closely aligned with either bloc but are in geographical proximity to one of the blocs (and therefore national security interests might be greater), for example in parts of Asia or the Caribbean and Central America.

And there are many other countries which probably couldn't cause seismic geopolitical shifts in the way that Taiwan might, but which are fragile, may be torn between China and the West and provide key inputs in global manufacturing supply chains. For example, the Democratic Republic of Congo was at times a focal point of Cold War tensions and accounts for around 70% of global cobalt production, a key input into products such as aircraft engines and lithium-ion batteries used in electric vehicles. And as the war in Ukraine highlighted, countries can play a key role in the supply of goods that – while a small part of global trade – are critical inputs in manufacturing supply chains (in Ukraine's case, this includes some industrial gases and wire harnessing).

We have no particular insight into where conflicts will develop. But measures of state fragility, such as the Fund for Peace's Fragile States Index provide a reasonable guide. This would suggest the risks are highest across parts of the Middle East, Africa and South Asia. (See Chart 6.10.)

Chart 6.10: Fragile States Index (Darker Blue = More Fragile)



Source: Fund for Peace

So, if conflict does become more prevalent, the world could find itself hit by sporadic spikes in commodity prices or shortages of certain parts, resulting in higher inflation and weaker output, and could incentivise the near-shoring discussed elsewhere. Conflicts may also trigger refugee crises that increase fiscal costs for recipient countries.

Another implication is that a greater likelihood of conflict will be accompanied by higher defence spending. Indeed, that shift is already underway in Europe amidst the war in Ukraine. There may be some positive economic effects. Higher military spending (without offsetting tax increases or spending cuts) would lift demand and, in an economy with an output gap, raise GDP.

It can also be associated with improvements in the supply-side of the economy. For example, military-related spending on some infrastructure (e.g. roads and airports) may have spillover effects on the rest of the economy. And technological and scientific developments can lift productivity more broadly. After all, the internet developed out of the US military's ARPANET. And Israel's success as a high-tech economy has, in part, roots in high military spending and military service. Nonetheless, the bulk of the evidence suggests that the multipliers on defence spending are typically low compared with forms of spending such as infrastructure.

Conclusions

To bring this all together, the further weakening of global economic institutions is probably not a major problem for advanced economies and some large EMs, but it would be a damaging development for many other emerging markets that are in need of reform (particularly lower-income EMs that fall within the China orbit). This reinforces some of the conclusions from our work on the end of the golden age for EMs – that productivity growth will be weaker and, while aggregate incomes will still converge with those in DMs, it will happen at a much slower pace.

Similarly, EMs also look most vulnerable if conflict becomes more prevalent. EMs are generally more fragile than DMs – particularly in the Middle East, South Asia and much of Africa – and account for most of the countries that fall between the US and China-aligned blocs. As a

result these countries are more likely to be the object of competition between major powers. That could impose enormous costs on those countries if conflict arose.

But there could be feedback globally – depending on where the conflict is and how it evolves – if it disrupts trade in critical goods or leads to a more extreme breakdown in relations between the China and US-aligned blocs.

7. The macroeconomic effects of fracturing

Jennifer McKeown, Head of Global Economics Service

Fracturing of global economic and financial ties will lead to shifts in supply chains, and reduced technology and investment flows between US- and China-centred blocs over the coming decade. Geopolitical considerations will play a greater role in economic policy than they have for a generation. If the shifts are gradual, economies and financial markets in much (though not all) of the world will adapt without too much cost, but destabilising shocks will be a greater risk than they have been the past.

We have set out elsewhere in this series how the fracturing of the global economy into US/Europe and China-led blocs will have far-reaching effects. It will influence not only trade in goods but also flows of capital, commodities, technology and people, as well as the institutions that govern them. In this chapter, we describe the key macroeconomic implications of these changes and how they might influence different economies to varying degrees.

The story so far

We previously laid out several key conclusions about how the fracturing of the global economy will evolve across four dimensions. In short:

- DMs will seek to reinforce supply chains and there will be a change in the make-up of trading relationships, with more diversification and a greater reliance on friends. World trade will split more clearly into China and US/Europe blocs. But a major re-shoring of production to the richest economies seems unlikely.
- Key commodities will sometimes be restricted in supply and prices will be volatile, with those required to green the economy such as copper coming under particular upward pressure. But efforts to tackle climate change will be uncoordinated so progress is unlikely to accelerate. Extreme weather events will be more frequent and the adverse economic effects of global warming will intensify, especially in Africa and South Asia.
- Financial flows between blocks will slow, but China will not reverse existing investments in the US-aligned bloc due to a lack of alternatives. China will push its allies to use the renminbi and hold the currency in reserves, but the US dollar will remain the dominant global currency. That conveys significant power on the US and its allies and we might see greater use of financial sanctions on the China-led bloc.
- Limits on unskilled migration seem unlikely to increase to a significant extent. But restrictions on skilled workers might rise due to security concerns, reducing such migration between blocs. A further breakdown in global relations will reduce the reach and

importance of international institutions such as the UN and IMF and weaken the global safety net.

In the rest of this chapter, we outline the macroeconomic effects of these changes and consider how they might change if fracturing were to occur in a more abrupt or dramatic manner.

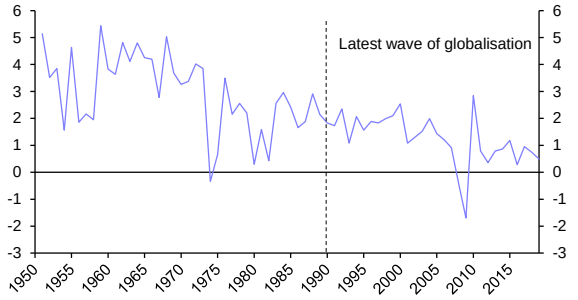
Macro effects on US-aligned bloc will be small

On the face of it, fracturing might mean slower growth of the western economies. Limiting the efficiencies of specialisation, forcing firms to hold greater inventories and reducing flows of knowledge, technology and skilled labour could all dent productivity growth. Meanwhile, any reduction in migration could further reduce the growth of the labour force, adding to the challenge posed by demographic shifts.

But in our central scenario, we have argued that limits on migration are likely to be focused on the relatively small number of highly skilled workers, implying that any implications through that channel will relate to productivity rather than to the size of the labour force. And even as far as productivity growth is concerned, we are not convinced that the effects on advanced economies will be significant.

After all, globalisation itself had little obvious impact on productivity in advanced economies. Indeed, growth in output per worker has slowed significantly since the latest wave of globalisation began around 1990, from around 3% to closer to 1%. (See Chart 7.1, which excludes 2020 and 2021 when data are distorted by the pandemic.) That slowdown cannot be pinned on globalisation itself. Instead, it has probably reflected factors including underinvestment, population ageing, restricted credit following the global financial crisis, and poor diffusion of new technologies. (See here.)

Chart 7.1: Advanced Economy Output Per Worker (% y/y)

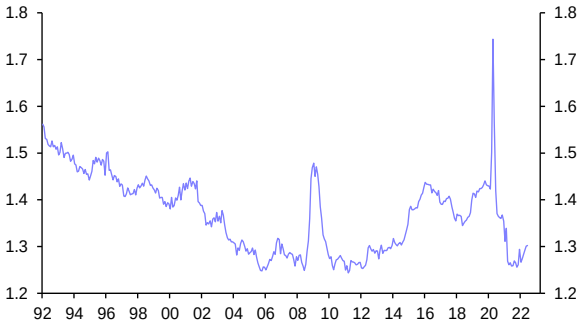


Sources: Maddison, IMF

However, it would be very difficult to argue that globalisation had had a significant *positive* impact on advanced economy productivity growth. Trade virtually eliminated production in some lower value-added industries while providing a boost to higher value-added sectors. But the associated modest productivity gains on the supply side were partly offset by a shortfall in demand as a result of idled factories and unemployed workers in import-competing sectors.

Admittedly, the drive to secure supplies of key goods could result in firms holding larger inventories, which would raise costs and reduce efficiency. Chart 7.2 shows how the US inventory to sales ratio dropped during the most recent wave of globalisation between the early 90 and late 2000s, partly because firms became able to source inputs to production "just in time" from overseas.

Chart 7.2: US Inventory to Sales Ratio



Sources: Refinitiv, Capital Economics

The shift to new, friendly suppliers is likely to result in some loss of productivity too. For

example, while certain electronic components could feasibly be sourced from Poland rather than China in future, it would take time for it to become as efficient.

But it is not true that diversification will inevitably lead to reduced productivity. Note, for example, that Japan's auto industry has made great efforts to disentangle and diversify supply since the Fukushima earthquake crippled parts of the supply chain in 2011. Manufacturers including Toyota and Nissan have ensured that separate parts of their business can operate independently and sought out additional or alternative suppliers with no obvious impact on productivity in the sector or on their competitiveness in global markets.

What's more, global fracturing carries some potential *benefits* for productivity in advanced economies. To the extent that any production of intermediate goods is shifted from the China-aligned bloc to economies within the US-aligned bloc, this will involve major investment with positive spillovers to the rest of the economy. The energy transition should also boost productivity, while increased spending on defence related to geopolitical strains might yield technological improvements.

While none of these effects is likely to be huge, together we think they will serve to offset the small drag on productivity from reduced efficiency and specialisation. And all of these fracturing-related effects are likely to be dwarfed by other influences on productivity in advanced economies, most notably any developments in technology or the way that existing technologies are utilised. We expect better technology use to boost advanced economy productivity growth in future.

Some economies in emerging Europe will increase their standing as manufacturing hubs for the euro-zone, allowing productivity growth to outpace that elsewhere by a wide margin. Meanwhile, Mexico has the potential to become a more important supplier to the US and to benefit from technological catch-up.

Fracturing is unlikely to have a major impact on inflation in advanced economies. While the inclusion of China in global supply chains has been one factor driving down inflation over the past few decades, its influence has not been as big as many imagine. (See here.) And we have argued that the weakening of trade links with China will mainly affect sectors deemed strategically important, such as high-end technology. The key channel for imported disinflation has been imports of consumer goods, which we have argued will continue. In addition, any reorganisation of supply chains is likely to favour other export manufacturers in Asia that sit within the US-aligned bloc (such as Taiwan, Korea and Indonesia). They, too, are low cost suppliers. As long as the relocation happened gradually, the inflation impact would be small.

In any case, most studies find that the "China shock" was only one of many to affect developed economy wages and prices from the 1980s and probably not the most significant. Institutional changes such as the weakening of unions and more credible inflation targeting by central banks probably mattered more and those things will remain in place.

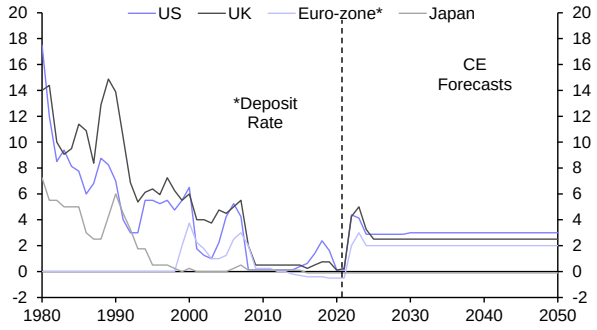
Admittedly, there will be more commodity price shocks in a fractured world and we have explained that the prices of commodities crucial to greening the economy are likely to rise markedly. But we doubt that the types of commodity shocks that we expect will be very inflationary. Commodities such as cobalt and lithium will continue to be a very small share of the price of finished goods. And since there are several suppliers unaligned to either bloc, the threat of dramatic price swings is lower than it has been for oil and gas recently.

Similarly, we doubt that fracturing will have a major impact on "risk-free" interest rates. To the

extent that reduced efficiency reduces productivity growth, real interest rates should beset somewhat lower. This effect could be compounded by greater uncertainty related to fracturing, which all things equal would reduce the desire to invest and increase the desire to save, pushing down the neutral real interest rate.

But the overall effect is likely to be small and all things are not equal. We have previously argued that real interest rates are likely to be set slightly higher in future for other reasons, most notably a pick-up in productivity growth related to technological progress and better use of existing technologies. (See here.) So while fracturing adds to a list of reasons to expect risk-free interest rates to remain very low, we suspect that they will end up marginally higher in future than they have been in the past decade. (See Chart 7.3.)

Chart 7.3: Policy Rates In Major Developed Economies (%, End Of Period)



Sources: Refinitiv, Capital Economics

Rather than in key macroeconomic variables such as GDP and inflation, for the US-aligned bloc the biggest impacts of fracturing will be felt within sectors. The politically driven nature of fracturing will have a significant impact on the operating environment for US and European firms in those sectors that are most exposed to restrictions on trade, such as technology and pharmaceuticals. And all firms and investors will be operating in a different environment in which political considerations play a greater role in decisions over the allocation of resource.

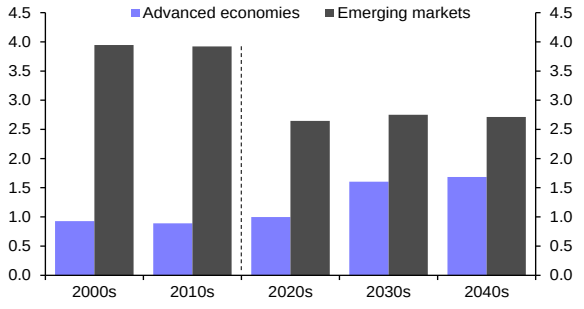
China-aligned bloc to suffer weaker productivity

Fracturing will have much greater macroeconomic consequences within the China-aligned bloc, the most notable of which being a decline in productivity growth. The emerging markets, particularly those in Asia, saw the biggest boost from the latest wave of globalisation as the splitting of supply chains allowed even small economies to develop large manufacturing sectors. Meanwhile, an influx of investment and production know-how from the West spilled over to local firms. The drive among advanced economies to bring production closer to home will reduce those spillovers, while a reduction in financial flows will limit research and development. We have also explained that a reduction in skilled migration flows between blocs will hurt R&D in the China-aligned bloc more than that in the US. This will all amount to a significant reduction in productivity growth, reducing the pace of catch-up with the advanced economies.

As noted elsewhere in this report, multilateral economic institutions such as the IMF, World Bank and WTO helped to spur the reforms that lay behind the 'golden age' of EM growth in the 1990s and 2000s. In many EMs there is still much more work to do, but as these institutions are weakened by fracturing the incentives for reform will weaken. What's more, in the absence of collective global action, climate change will take a particularly heavy toll on the economies of Africa and South Asia, further dampening productivity growth there.

Chart 7.4 shows how productivity growth in emerging markets outpaced that in advanced economies by a wide margin in the 2000s and 2010s, but also how we expect it to slow and that gap to narrow in future.

Chart 7.4: Output per Worker in Advanced and Emerging Economies (% y/y)



Sources: Refinitiv, Capital Economics

Greater uncertainty will raise risk premia

The emerging economies of the China-aligned bloc will also feel the greatest effects from a rise in economic uncertainty and, in some cases, higher risk premia.

Their financial systems are less developed and hence less able to absorb shocks then those of advanced economies. Investments are generally not well diversified and provisions against default are weaker than in advanced economies. Public finances are typically less stable and more vulnerable to a loss of investor confidence, such that fiscal policy might have to be tightened rather than loosened during downturns (see Athanasoulis and Wincoop, 2000). What's more, emerging markets typically lack the economic diversity of advanced economies, depending heavily on tourism or the export of particular commodities. So when foreign trade fluctuates, as we have argued that it might during periods when global relations are strained, the impact can be enormous. The economies most affected in this regard will be the likes of Argentina and Venezuela, who have large external vulnerabilities. We will discuss this in greater detail in the next chapter.

Winners and losers

Given that we expect overall productivity growth to be weaker, the global economy will be worse off in a fractured world than would otherwise have been the case. But different economies will be affected in different ways, with varying degrees of damage and perhaps even some benefits for a few.

Our conclusions on the broad impact by economy are summarised in the Heat Map below. (See Table 7.1.) Starting with the worst affected, China and those aligned to it will suffer particularly from the reorganisation of supply chains in the US-aligned bloc. This will not only limit their exports, but also reduce the scope for technology transfer and economic catch-up. A reduction in financial flows from the west will damage inward investment and the threat of conflict will lead to higher uncertainty and perhaps reduced investment at home.

These losses will be mitigated in part by a relatively secure supply of commodities within the bloc, including those required to green the economy in China's case. But Russia will lose out as economies around the world reduce their reliance on fossil fuels, pushing it further into pariah status.

African economies, which are loosely aligned to China, will also suffer from reduced technology transfer and scope for catch-up. But on top of that, they will feel particularly adverse effects from the weakening of multilateral institutions, which will increase the risk of messy defaults, reduce the pressures for beneficial reforms and raise risk premia and borrowing costs substantially. Africa (and to a lesser extent South Asia) will suffer additionally from their exposure to the effects of global warming.

Turning to the unaligned bloc, the implications of fracturing are slightly less adverse on the whole. Brazil, Chile and parts of the Middle East will also feel the adverse effects of a weaker safety net in the form of multilateral institutions. But they will suffer less from reconfigured supply chains than economies in the China-aligned bloc. For the most part, these economies also have a good supply of raw materials and will benefit from rising prices.

Finally, in our central scenario of a gradual shift in relationships, the adverse effects on the euro-zone and US will be small and dwarfed by other factors. Productivity growth may be slightly weaker as supply chains are reconfigured and uncertainty might reduce investment somewhat. But at the same time, any efforts to produce key inputs to production or commodities at home will promote R&D, as will increased defence spending. Meanwhile, inflation-focused central banks will limit the potential damage from frequent price shocks, stemming particularly from an increasingly unreliable supply of key commodities.

If there are any winners from fracturing, they will be the emerging markets with the greatest attachment to the US-aligned bloc, such as Mexico, and parts of central and eastern Europe including Poland and Czechia. They will profit from reconfigured supply chains in the US and euro-zone as they become more important suppliers of products such as lower end electronics and automobile parts. Meanwhile, financial centres in Asia like Singapore might also benefit from financial fracturing as economies in the China-aligned bloc seek to rely less on the west in this regard.

Adverse scenarios

We have set out a central scenario of a relatively gradual period of fracturing in which the world splits into two separate spheres, driven in part by government decisions over supply security and political interests. But in this scenario, geopolitical tensions stop short of actual conflict and each side avoids policies that would do significant damage to their own economies. However, it is not difficult to imagine a more adverse scenario in which tensions escalate to the point at which economic considerations are no longer paramount.

Table 7.1: The effects of fracturing on the world's major economies

		Supply chains and standards	Energy security and climate	Financial fracturing	Geopolitics, institutions and migration
US bloc	US				
	Euro-zone				
	Central and Eastern Europe				
	Developed East Asia				
Largely unaligned	Brazil/Chile				
	Middle East				
China bloc	China				
	Russia				
	Pakistan/Bangladesh				
	Africa				

Source: Capital Economics

This could play out in many different ways, but earlier in this series we outlined two main adverse scenarios. In the first, US- and China-centred blocs might not hold together, such that the global economy splinters into smaller regional or national-level groups. And in the second, tensions between the two blocs could escalate to confrontation.

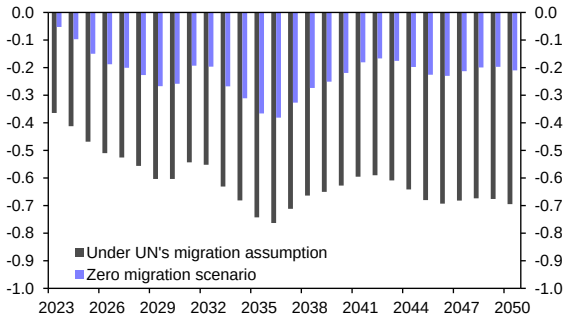
Under the first adverse scenario, the loss of economies of scale would result in a much larger hit to productivity growth in advanced economies. Rather than relying on each other for supply, each economy would need to become much more self-sufficient, which we have explained would come at a far greater cost to efficiency. Remember, for example, that Chips made by TSMC in Oregon cost 50% more than those manufactured by the same firm in Taiwan.

We estimated in research in 2019 that globalisation had led to gains of around 0.3ppts in the growth of global output per worker, so in this adverse scenario we could expect that to be fully reversed not only in the China-aligned bloc but also in the US-aligned bloc. What's more, we estimated during our previous Spotlight series that globalisation (and particularly China's integration

into the world economy) had reduced G7 annual core inflation by around 0.6ppts. Accordingly, the full unwinding of these trade linkages could boost core inflation by a similar amount. Interest rates would be set higher than in our central scenario.

This scenario would result in a reduction in migration within blocs, which would hit the US-aligned bloc particularly hard. Chart 7.5 shows that the G7's working age population is set to fall by between 0.2% and 0.3% per year even if migration continues in line with the UN's central assumption. In an extreme scenario of zero net migration, the fall in the potential workforce would be around 0.3ppts sharper per year. This would imply a similar hit to GDP growth unless there were offsetting gains in productivity or labour force participation rates. Reduced migration would also put considerable strain on the public finances of economies where the domestic population is ageing rapidly, including Italy and Germany.

Chart 7.5: G7 Working Age Population (% y/y)

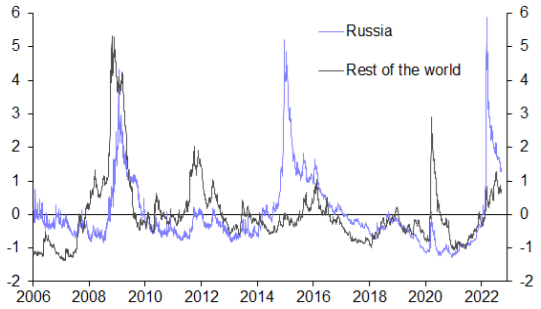


Sources: Refinitiv, Capital Economics

Under the second adverse scenario where the two blocs stay together but there is a deeper rift between them, some of the gains from trade within blocs could remain in place. But there would be an abrupt severing of a broader swathe of economic and financial ties between the two blocs than in a more managed scenario.

The Western sanctions against Russia give an outline of what might happen. Chart 7.6 shows how sanctions led to a dramatic tightening of financial conditions compared to the rest of the world. This kind of effect could be much broader based.

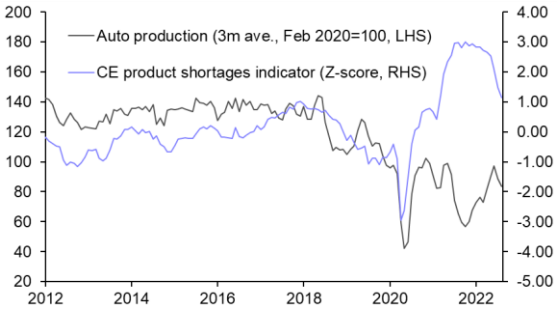
Chart 7.6: Financial Conditions Indices



Source: Capital Economics

What's more, there would be a renewed surge in shortages of key commodities and other inputs to production which could hit the industrial sector hard. Chart 7.7 shows that product shortages in Germany last year coincided with a 40% drop in vehicle production, for example, and we could see similar effects across many economies and sectors. Geopolitical tensions involving producers of raw materials and key inputs to production such as semiconductors would be particularly worrying. These include China, Taiwan, Chile, Australia and the Democratic Republic of Congo. Meanwhile, restricted food supply could cause major unrest and malnutrition in EMs including Kenya, Ethiopia and parts of the Middle East.

Chart 7.7: German Product Shortages and Auto Production



Sources: Refinitiv, Capital Economics

More generally, an environment of much greater uncertainty globally would weigh on investment and boost risk premia.

Conclusions

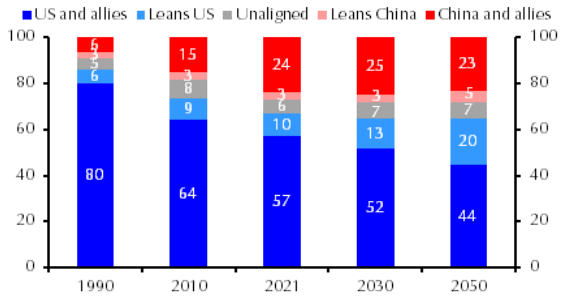
The fracturing of global economic and financial ties will lead to shifts in supply chains, and reduced technology and investment flows between US- and China-centred blocs over the coming decade. Geopolitical considerations will play a greater role in economic policy than they have for a generation.

These developments may not have a major impact on macroeconomic variables in advanced economies, which all sit in the US-aligned bloc. At the margin, productivity growth will be lower and interest rates lower, but any changes will be small and outweighed by other factors.

However, the politically-driven nature of fracturing will have a significant impact on the operating environment for US and European firms in those sectors that are most exposed to restrictions on trade, such as technology and pharmaceuticals. And all firms and investors will be operating in a different environment in which political considerations play a greater role in decisions over the allocation of resource.

In contrast, the impact on productivity growth in China and some of its allies will be substantial. This is embedded in our view that China's growth rate will slow to 2% by the end of this decade. One consequence is that even if not much appears to change for advanced economies, the shape of the world in 2050 could be very different from what many currently suppose. The share of global output accounted for by the China-bloc has increased sharply over the past three decades, from 10% in 1990 to 25% today. But this surge will peter out over the next few years, in large part due to the productivity sapping effects of fracturing. The China-aligned bloc's weight in the global economy won't increase substantially further. (See Chart 7.8.)

Chart 7.8: GDP Shares of the World's Economic Blocs



Sources: Refinitiv, Capital Economics

As long as a crisis is avoided and fracturing leads only to a partial roll-back of prior decades of integration, economies and financial markets will adapt gradually to the new environment. But there are less benign possibilities. If fracturing evolved into a splintering of the world into regional or national groups, the effects on productivity in developed markets would be much more severe. Alternatively, a deeper schism between the two spheres could prompt acute supply shortages, inflation spikes, higher interest rates and a dramatic tightening of financial conditions across the world.

8. What might fracturing mean for the markets?

Oliver Allen, Senior Markets Economist

Fracturing will be felt very differently by markets in different parts of the world. Sectors within US-aligned markets where ties with China are most likely to fracture could see significant ructions. But we expect little impact on most bonds and equities in developed markets and assets of emerging markets within the US-aligned block could receive a boost. In contrast, we see fracturing as a major headwind for asset markets in China and some other countries in its bloc.

DM assets: fracturing, not deglobalisation

The form of fracturing that we envisage as our base case would have a fairly limited impact on DM financial markets in aggregate. This is mainly because we expect fracturing to have only a limited impact on key macroeconomic variables in DM economies.

We think that fracturing will have only a small impact on average inflation in DMs, providing little reason to expect higher nominal government bond yields through this channel. Slightly weaker productivity growth and greater uncertainty around key areas of economic policy would, all other things being equal, lead to lower real equilibrium interest rates and therefore lower real bond yields too. But, in practice, we suspect that this downward drag would be fairly small and overwhelmed by other key structural trends such as technological development and demographics.

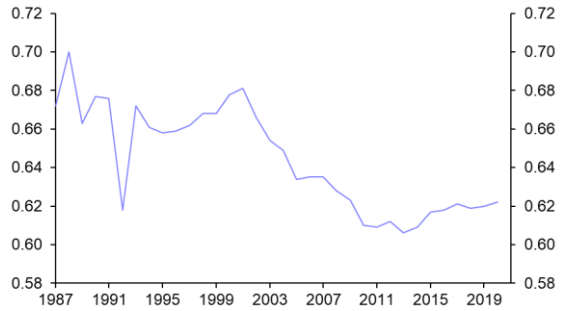
Equally, greater policy uncertainty might be a reason to expect slightly higher equity risk premia and lower stock market valuations. But, partly because we envisage only a modest impact on economic growth and real interest rates in advanced economies, we do not expect fracturing to have a big bearing on the long-term performance of most DM stock markets.

At first sight, this relatively sanguine conclusion appears to jar with the widely held belief that the previous wave of globalisation had been a boon for many types of financial assets. After all, the integration of hundreds of millions of workers in EMs into the global economy acted as a positive labour supply shock and contributed to downward pressure on labour's share of income in advanced economies. (See Chart 8.1.) The flip side of this was a rise in the share of income flowing to company profits. This boost to profits was aided by the fact that firms could more easily offshore production to low cost centres (see here), and that multinational companies could expand into a larger global market.

At the same time, globalisation contributed to downward pressure on nominal and real bond

yields (and thus discount rates and valuations) in developed markets too. Admittedly, a higher profit share should, all else equal, encourage investment and result in higher equilibrium real interest rates. But, in practice, it seems that the greater income and wealth inequality that resulted from the rise in the profit share *lowered* equilibrium rates in advanced economies during the era of globalisation, by increasing desired saving by more.

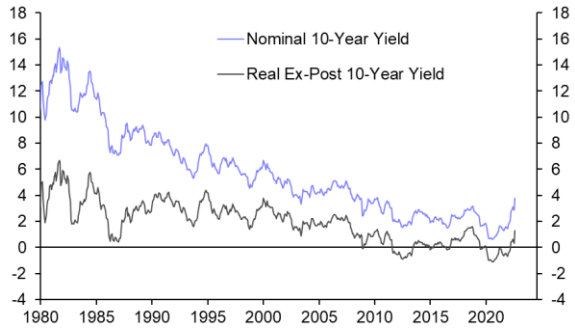
Chart 8.1: Labour Share Of US National Income (%)



Sources: Refinitiv, Capital Economics

Accordingly, the major trend over the "third wave" of globalisation was towards ever lower bond yields. (See Chart 8.2.)

Chart 8.2: 10-Year US Treasury Yields (%)



Sources: Refinitiv, Capital Economics

The net result of this is that globalisation gave a boost to both equity and bond markets in DMs. It would therefore seem sensible to assume that fracturing would have the opposite effect.

However, a key point to stress is that the process of fracturing is not simply globalisation in reverse. Our base case is that, apart from a few categories of goods deemed as politically sensitive or strategically important, most trade between the US and China-aligned blocs will continue as before. And where production does shift away from China, it is likely to move to other EMs within the US-aligned bloc, rather than relocating back to advanced economies. Fracturing will not produce a great wave of reshoring.

If we're right, then fracturing is unlikely to result in a rise in labour's share of income, and therefore higher bond yields or weaker corporate profits, through this channel. It also points to most multinational companies retaining access to a large global market.

A second key point to stress is that while globalisation was an important structural factor working largely in favour of asset prices in DMs over recent decades, it was not the only one. We suspect that the lower inflation that had prevailed until recently in DMs owed more to the advent of independent, inflation-targeting central banks than to globalisation. What's more, *real* bond yields have also been suppressed by weaker productivity growth and an ageing of populations. Meanwhile, technological change, the decline of unionised labour and a trend towards weaker antitrust policy, particularly in the US, were also key structural factors that have worked in favour of the profits of large companies.

Challenges and opportunities for certain sectors

That said, while we do not expect fracturing to have a major impact on DM asset prices in aggregate, it will have important consequences for certain sectors, industries and companies within DM stock markets where geopolitical considerations mean that ties to China look most likely to rupture.

Governments in the US-bloc are pushing to remove firms within the China-bloc from its supply chains for strategically important goods, such as semiconductors, pharmaceuticals, batteries and other key raw materials, including, rare earth elements and other minerals.

At the same time, China wants to reduce its reliance on US-bloc firms for an even wider range of goods. This includes semiconductors,

technological hardware, pharmaceuticals, marine and defence equipment, aerospace, and some high-end capital goods. This decoupling may also affect US-aligned firms involved in extracting and processing certain strategically important commodities.

In a recent example of how the forces shaping this fracturing might look in practice, funds distributed as part of the US CHIPS Act – which is intended to support the development of advanced semiconductor manufacturing in the US – are granted only if firms agree not to expand their manufacturing capacity for these kinds of chips in China for ten years. For some sensitive goods, governments may also discourage companies from supplying those in the other bloc. For example, the US government has banned American firms from supplying certain technologies to Huawei.

Whether this shift will ultimately be bad news for these companies' bottom lines is a more difficult question to answer, and one that is likely to vary from industry to industry and firm to firm.

On the one hand, those companies that already have a significant manufacturing base in China or China-aligned economies, or that rely on economies within the China-aligned bloc for key inputs, may shoulder large costs to either move production or find new suppliers in "friendlier" nations. For others, losing access to Chinese companies as a customer base could entail a significant loss of revenue too.

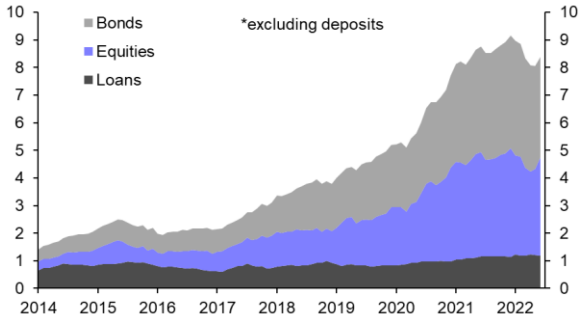
On the other hand, some firms in these industries will presumably face less competition from rival firms based in the China-aligned bloc and could benefit from becoming the new suppliers for "allied" economies. They might also enjoy sponsorship from their governments. One example is the large subsidies for US semiconductor manufacturing projects provided by the CHIPS act.

Another key point to make is that the consequences of removing China from certain supply chains might be a short-term cost, but much less of a headwind to the long-term development of these industries. For many of these goods, including semiconductors, Chinese firms generally operate lower down the value chain, rather than in higher value-added areas. We think that alternative low-cost suppliers could eventually be found for most goods. The size and diversity of the US-aligned bloc helps.

Fracturing will therefore present both challenges and opportunities for investors in these sectors. Much will hinge on the government response and how the carrots of fracturing, such as subsidies and tax breaks, stack up versus the sticks, such as new regulations and the threat of sanctions.

The financial fracturing that we envisage may also have some consequences for some DM companies in the financial sector. There are limited signs in the data so far that worries about geopolitical tensions are causing foreign portfolio inflows into China to reverse course. (See Chart 8.3.) What's more, a few large US financial institutions have continued to expand operations in China over the past few years.

Chart 8.3: Foreign Holdings of RMB Assets* (RMBtrn)



Sources: Refinitiv, Capital Economics

However, governments in both the West and Beijing seem to have some reservations about the status quo. China's inward direct investment into the US and EU, for example, has fallen sharply since 2016, partly due to a clampdown on capital outflows by the Chinese government, but also due to more screening of investments from China on security grounds.

The threat of delisting from US exchanges also hangs over many Chinese companies. This is

driven in part by the US authorities wanting greater scrutiny of the Chinese firms that raise capital on its markets. But Beijing also has concerns about both security and the reliance of Chinese companies on the US financial system. This was evident in the cancellation of the New York IPO of Chinese ride-hailing firm DiDi last year.

If the main consequences of financial fracturing are merely that Chinese companies seeking international capital do so in Hong Kong rather than in New York, and that less direct investment flows into the US from China, then the economic and financial losses will be small. But there is a risk of a more marked financial fracture between the China and US-aligned blocs, which would pose a much bigger challenge for banks in the US-aligned bloc that have substantial business in China and other economies within its bloc, most notably Hong Kong.

A significant drag for China-bloc assets

In contrast to the minor impact that we expect on most DM financial assets in our central scenario, fracturing is likely to have greater consequences for economies in the China-aligned bloc.

This is particularly true in the case of China itself. Our view is that fracturing will add to the downward pressure on Chinese productivity growth, which in turn points to weaker earnings growth for Chinese companies. What's more, by heavily restricting the possibilities for technology transfer between the US and China-aligned blocs, fracturing will also make it more difficult for China to develop the kinds of world-beating firms in certain high-tech sectors which could generate significant revenues globally.

All else equal, weaker trend growth would tend to mean lower equilibrium interest rates and therefore lower bond yields. This is one reason why we expect 10-year yields in China to drift towards 2.00% by 2030. Weaker productivity growth in China is also likely to translate into less real-terms appreciation of the renminbi. This might hold back long-run returns for foreign investors in common-currency terms.

Over and above this, our view that the US dollar will remain the dominant global currency and that the US financial system will continue to provide the plumbing for the world economy will leave open the prospect of financial sanctions on China and its allies in the event of a significant escalation in fracturing. Admittedly, at this stage this remains a tail risk rather than a central scenario. But, as foreign investors in Russian assets have found, the imposition of sanctions could result in their assets in China and China-aligned countries becoming effectively worthless overnight. It's possible that this tail risk leads foreign investors to demand increasingly higher risk premia from their holdings of Chinese assets, especially during periods of heightened geopolitical tensions.

This might not have a large impact on Chinese government bonds or domestically-listed shares, given these markets only have very small involvement from foreign investors. But it could show up in the form of lower valuations for the shares of US and Hong Kong-listed Chinese companies, and perhaps more downward pressure on the renminbi.

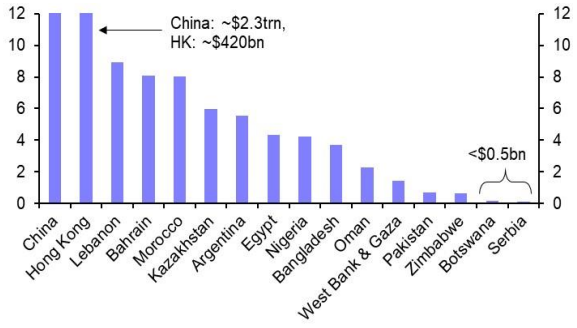
Elsewhere within the China-aligned bloc, Hong Kong looks very likely to retain its US dollar peg and continue importing US monetary policy for the foreseeable future. But the fortunes of the territory's listed companies might also suffer if financial fracturing pushes the territory further along its path of becoming an offshore financial centre for China, rather than an international city connecting East with West, with its appeal built in large part on investors' faith in the rule of law in the territory. (See here.)

Besides China and Hong Kong, many China-aligned bloc members are smaller EMs or frontier markets with less developed financial markets. Indeed, the bloc contains several countries, including Russia, Iran and Venezuela, that are

already effectively cut off from the global financial system.

The MSCI China Index of mid- and large-cap Chinese equities has a market capitalisation of about $2.3trn, roughly 7% of the size of the MSCI USA Index. The MSCI Hong Kong Index has a smaller market capitalisation of about $420bn. But of the other 87 countries that we designate as either China-aligned or leaning towards China, just 14 have investible stand-alone MSCI equity indices, a crude proxy for significant involvement from international investors in these stock markets. What's more, the combined market capitalisation of these 14 countries is only around $50bn. (See Chart 8.4.) For context, that is less than half the size of the MSCI Finland Index

Chart 8.4: Market Capitalisation Of MSCI Equity Indices Of "China-Aligned" EMs (US$bn)

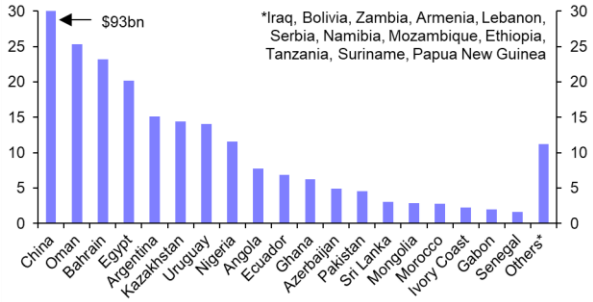


Sources: MSCI, Capital Economics

While the development of some of these other economies could suffer if closer ties to China come at the expense of weaker ties with the US-aligned bloc, limiting the growth prospects of their companies, this would only matter for a few frontier equity markets that are very small in size.

International investors have a much larger exposure to these China-aligned EMs and frontier markets through their sovereign dollar bonds. (See Chart 8.5.) 30 of the economies which we designate as being China-aligned have investible JPMorgan EMBI indices. The current combined market value is roughly $180bn.

Chart 8.5: Market Value Of JPMorgan EMBI Global Indices Of "China-Aligned" EMs (US$bn)



Sources: Refinitiv, Capital Economics

We suspect that China will continue to use bilateral lending as a tool to bind others to its bloc. If loans from Chinese banks and the government come attached with fewer conditions than those extended by multilateral institutions such as the IMF and World Bank this could reduce the chances that these EMs pursue the kinds of market-friendly policies that would otherwise improve their creditworthiness and justify lower credit spreads.

Much of China's bilateral lending is also opaque (see here), which in some cases seems to have hurt investors' confidence in the sovereign bonds of those EM borrowers, prompting demands for higher yields. Zambia's experience during its recent default suggests that owing large debts to China can slow and complicate the restructuring process too (see here), potentially further undermining the appeal of these countries' sovereign bonds to other investors.

Winners & losers among other EM assets

The impact of fracturing on the assets of other EMs might be more varied. Beside harming China's long-term growth prospects, fracturing may have the biggest impact on the world's least developed and most fragile EMs. We think weaker global co-operation and multilateral institutions point to fewer market-friendly reforms, a greater risk of conflict, and the possibility that less is done to tackle climate change.

The world's least developed economies usually have very small financial markets and the

exposure of international investors tends to be very small as well. But, for those with significant amounts of offshore sovereign bonds outstanding, fewer pro-market reforms and increased risks of either conflict or severe climatic events imply greater default risk and higher sovereign risk premia. It is also worth noting that we designate most frontier markets as belonging to the China-aligned bloc.

By contrast, we think that fracturing could benefit some EMs which are closer allies of the US and other advanced economies if they become the destination for some trade and investment that would have otherwise gone to the China-aligned bloc.

Here fracturing might mean slightly *stronger* productivity growth, supporting convergence with advanced economies. The impact on the sovereign bonds of these economies is ambiguous, at least for local-currency debt, given that a fall in country risk premia might offset the impact of higher local policy interest rates. But stronger productivity growth due to a more vibrant export sector would presumably be a boon for their listed companies, as well as for their currencies.

Some US-aligned EMs in Asia, including India and Vietnam, will receive some of the relocation of supply chains away from China. Other beneficiaries are likely to be those EMs that already serve to some extent as lower-cost manufacturing hubs connected to the US and Europe, including Mexico, and some parts of emerging Europe, including Poland and Czechia.

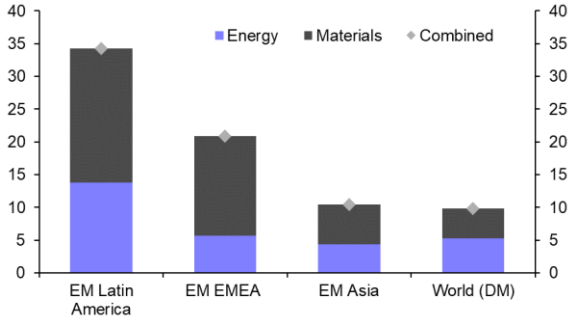
Rising geopolitical tensions, coupled with supply-chain disruptions linked to the COVID-19 pandemic, have also underscored the strategic importance of Korea and Taiwan – and their technology industries and semiconductor manufacturers – to the US-aligned bloc. Companies in these industries dominate the two countries' stock markets, which in turn account for a combined share of about 25% of the MSCI EM Index.

Fracturing will bring some challenges for these firms, raising geopolitical risks, particularly for Taiwan. And, like their peers in strategically important industries in the advanced economies, their companies may face pressure to reduce their investments and exports of certain goods to China. But fracturing will bring opportunities for these countries' large companies too. For example, Korean and Taiwanese semiconductor manufacturers are likely to become recipients of large subsidies granted as part of the CHIPS Act.

Fracturing may also bring benefits for commodity-producing EMs. After all, as we argue in Chapter 3, we suspect that one consequence of fracturing will be the two blocs ramping up their efforts to secure their own access to certain commodities, particularly those which are key to green technologies. This includes some industrial metals and rare earth elements.

Those EMs that can carve out a niche as reliable suppliers of key commodities to either of the two blocs might experience stronger growth, inward investment and an improvement in their terms of trade. That could mean a better performance from their equity markets, appreciation in their currencies and, in some cases, lower bond yields as commodity revenues improved fiscal positions. Stock markets in some parts of the emerging world, most notably Latin America, also have a relatively large weight of commodity-focused sectors. (See Chart 8.6.)

Chart 8.6: Sector Weights Of MSCI Equity Indices (%)



Sources: MSCI, Capital Economics

That said, we would caution against concluding that fracturing will produce permanently higher

commodity prices – and thus be unequivocally positive for investors in these markets.

The push from each bloc to secure supplies of certain commodities is likely to lead to a surge in demand – and prices – for them. But the impact will not be uniform across all markets. The effect is likely to be greatest in those commodity markets where supply is concentrated in only a handful of countries. This is particularly true of some of the industrial metals that are essential for certain green technologies, such as cobalt and chromium. In contrast, it is much less true of many energy commodities, where supply is more diffuse.

What's more, history suggests that if fracturing does lead to surges in demand that push up the price of some commodities, this will not persist indefinitely. In time, higher prices are likely to induce technological innovation and investment in supply, which in turn will bring prices back down.

The lessons from commodity markets during the period of globalisation in the 1990s and 2000s are instructive. The industrialisation of China and many other EMs led to a surge in demand for commodities in the early 2000s, with the result that the S&P GSCI Commodity Index delivered an average annual real return of nearly 14% between 2000 and mid-2008. Prices collapsed during the Global Financial Crisis, but then rebounded in 2010-11 before dropping back again from 2012, in part because high prices induced new forms of supply (the most obvious of which was US shale oil). Partly as a result, the S&P GSCI Commodity Index has delivered an average annual real return of *minus* 9% since 2009. Fracturing is likely to lead to greater volatility in commodity prices, but may not shift them to a permanently higher path.

Thinking through more adverse scenarios

The conclusions laid out so far in this chapter are anchored in our base case that fracturing evolves in a relatively gradual and limited way. But there are also more worrying scenarios within this fracturing process that must be considered.

One is that the US- and China-aligned blocs don't hold, and that the global economy splinters into smaller regional or national-level groups. In our view, this would cause greater economic damage than in our base case, particularly to those economies in the US-aligned bloc. It would also lead to more upward pressure on inflation.

This would lead to higher nominal bond yields, at least for a time. With that said, *real* yields would probably eventually end up settling at a lower level, given the hit to productivity growth and desired investment in this more splintered world.

DM equities would take a larger hit too, partly due to the negative impact on economic growth in these economies but also because such a split could disrupt the activity of multinational companies to a much greater extent. This scenario might favour companies that have business models focused on servicing their home economies over multinationals. Given that the large size of their home markets leaves more scope for specialisation and economies of scale, it might also favour the companies of either the US or, if it remains cohesive, the EU, over the firms of smaller economies which are left isolated.

A second adverse scenario would involve ties within the blocs largely holding but a more abrupt and severe break in relations between the blocs. Here the experience of the sharp severing of ties between Russia and the West following the invasion of Ukraine provides some guide as to the market impact, although one on a much smaller scale given the larger size of China's economy and its more extensive ties with the rest of the world.

A severe US-China rupture would be a truly seismic financial event. It might start with a disorderly unwinding of the financial claims that each bloc has accumulated on the other. Many assets would probably be dumped at fire sale prices, financial obligations might be reneged on, and physical assets in the other bloc could be confiscated. The immediate impact on markets would probably be extreme dislocation globally,

and a severe liquidity crisis that required the Federal Reserve to step in as lender of last resort to the US-aligned bloc, similar to how the US central bank acted during the market turmoil of early 2020.

Once the acute financial phase of the crisis eased, global markets would have to adjust to the fundamentals of this new state of the world. Given China's central role in many global supply chains, big disruptions to trade between the US and China-aligned bloc could mean severe shortages for many types of goods in the US-aligned bloc, a big hit to economic growth and probably a period of very high inflation.

There is a risk that policymakers would choose to accept higher inflation rather than much higher government bond yields and turn to policies of financial repression. This would seem to be a far larger risk in a world of greater demands on the state: to bail out insolvent firms; ease the transition towards economic life without the China-aligned bloc; and perhaps fund greater defence spending.

However, if financial repression were avoided, higher nominal bond yields would probably be needed for a time to get inflation back down. Real yields might have to rise in the short term too, if the US-aligned bloc had to rebuild some manufacturing capacity to produce goods formerly imported from the China-aligned bloc, raising desired investment. But greater uncertainty would push in the other direction. And in the medium-to-longer term weaker productivity growth would tend to mean lower real bond yields.

This would also clearly be a worse scenario for DM equities. US-bloc companies would lose access to key customers, suppliers and assets within the China-aligned bloc; risk premia would surge; and earnings would take a large hit due to a weaker global economy.

For some investors within the US-aligned bloc, what this scenario would mean for the fundamentals of China-aligned bloc assets might become a little irrelevant. As some Western investors in Russian assets have found, financial sanctions might effectively mean that the value of many of their investments in the China-aligned bloc would have to be written down to zero.

Even so, an abrupt and severe fracturing of ties would also mean a great deal of economic pain for the China-aligned bloc. It too would face severe shortages, of goods formerly imported from the US-aligned bloc, and many Chinese firms would find themselves cut off from key export markets. As in the US-aligned bloc, this would probably mean a period of higher bond yields and a big hit to risky assets.

Conclusion

Fracturing will be felt very differently by markets in different parts of the world. Sectors within US-aligned markets where ties with China are most likely to fracture could see significant ructions. But we expect little impact on most DM bond and stock markets and assets of EMs within the US-led block could receive a boost. In contrast, we see fracturing as a major headwind for asset markets in China and some other countries in its bloc. The price of some commodities – particularly minerals central to the green transition – are likely to see greater volatility, but history suggests that supply responses will prevent prices shifting to a permanently higher path.

The relative resilience of financial markets in US-aligned countries stems from the diversity and collective size of their economies. Accordingly, a splintering of the bloc into smaller national or regional alliances would cause a disproportionately large hit to bonds and equities in DMs. Meanwhile, a more abrupt and severe break in ties between the US and China-aligned blocs would hit financial assets on both sides in a major way.

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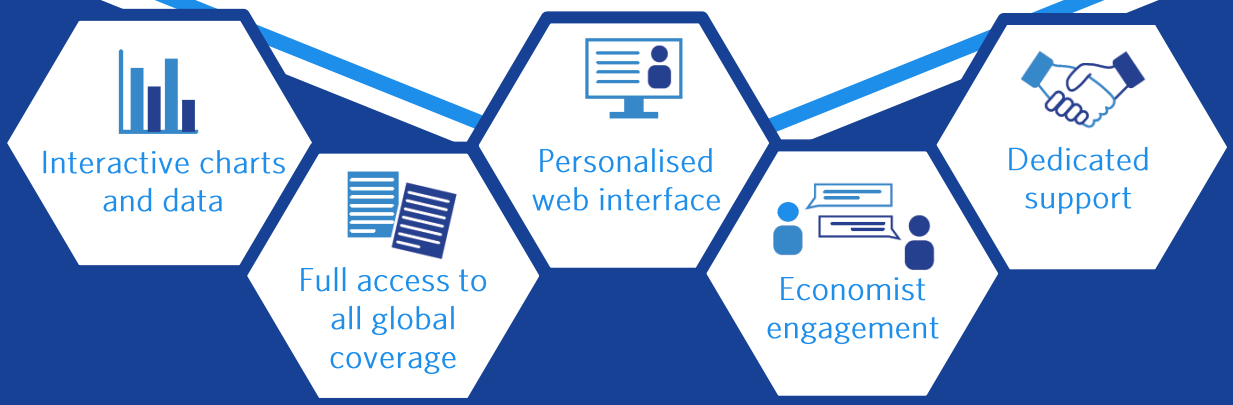

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