

TOP of MIND

(DE)GLOBALIZATION AHEAD?



Amid the dual crises of Covid and the war in Ukraine, globalization is arguably facing its biggest test of the post-Cold War era. Where globalization is heading, and what that means for the economy, markets, and society, is Top of Mind. For answers, we speak with the Peterson Institute’s Adam Posen, Harvard’s Dani Rodrik, former GSAM Chairman Jim O’Neill, and GS analysts, who disagree on the future of globalization and its economic implications, including whether it will reinforce current red-hot inflation or instead lead to the return of secular stagnation. We then dig into what this all means for assets. Posen and O’Neill argue that the shifts in globalization they expect, as well as the weaponization of finance in response to Russia’s invasion of Ukraine, will have only limited implications for the Dollar, while GS’s Zach Pandl argues that the Dollar’s dominance will likely further erode over the coming years, reinforcing his view that the Dollar will weaken over the medium term. Finally, GS’s Jeff Currie argues that the shifts in globalization he expects only strengthen the bull case for commodities.



The world is arguably becoming increasingly bifurcated into two economic blocs—one aligned with the US and the other with China.

- Adam Posen

What we’re seeing is a natural and desirable retrenchment from the hyperglobalization that characterized the last few decades as the world tries to find a happy medium between the excesses of hyperglobalization and the dangers of autarky.

- Dani Rodrik

I’m very dubious of the view that the era of globalization has peaked.

- Jim O’Neill



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Investors should consider this report as only a single factor in making their investment decision. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to www.gs.com/research/hedge.html.

Macro news and views

We provide a brief snapshot on the most important economies for the global markets

US

Latest GS proprietary datapoints/major changes in views

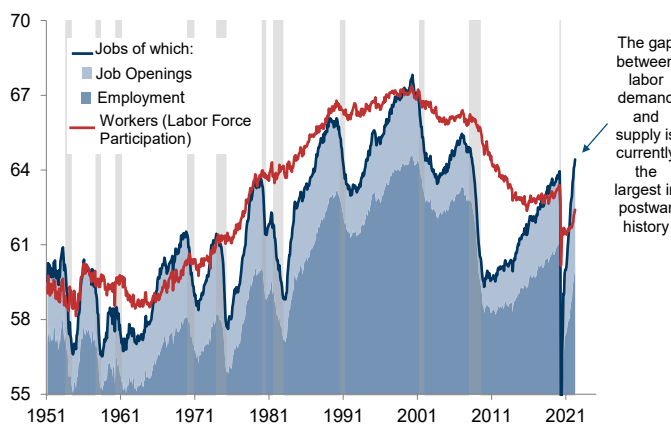
- In late March, we added an additional 25bp Fed hike in each of May and June (now expect 50bp hikes at each of the two meetings) after Chair Powell's "expeditiously" speech.

Datapoints/trends we're focused on

- Core PCE inflation, which we expect to fall to 4.0% by YE22, but further supply chain disruptions pose upside risk.
- Jobs-workers gap, which currently stands at 5.3mn and points to the tightest labor market in postwar history.
- Recession risk; despite the inflation overshoot and overheated labor market, we don't think a recession is inevitable over the next few years.

The tightest labor market in postwar US history

Jobs-workers gap, % of population



Source: Haver Analytics, Goldman Sachs GIR.

Japan

Latest GS proprietary datapoints/major changes in views

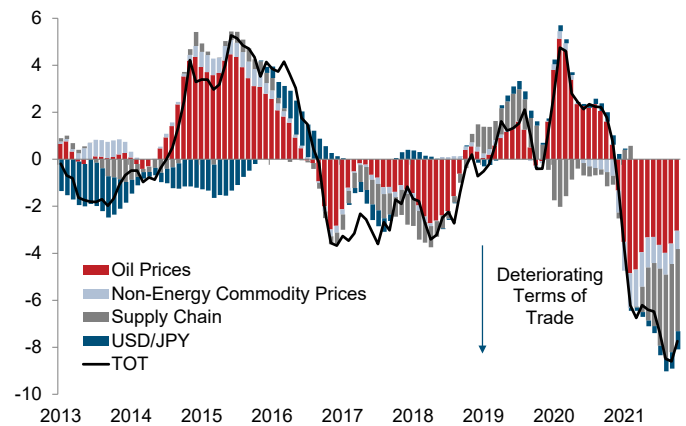
- No major changes in views.

Datapoints/trends we're focused on

- Yield curve control, which we expect the BoJ to maintain through April 2023.
- Economic activity, which we expect to contract in 1Q22 on the back of a reimposition of virus restrictions.
- Perceived inflation, which, if actual inflation exceeds the BoJ's 2% target, could serve as an alternative indicator to actual inflation in gauging the BoJ's policy stance.
- Terms of trade (TOT), which has deteriorated to its worst level for Japan since 1975 amid the recent surge in global commodity prices and ongoing supply chain disruptions.

Japanese terms of trade: a sharp deterioration

Factor decomposition of terms of trade, % yoy, contribution pp



Source: Datastream, OECD, BoJ, Goldman Sachs GIR.

Europe

Latest GS proprietary datapoints/major changes in views

- We recently raised our 1H22 Euro area growth forecast on better-than-expected growth so far and limited disruptions to Russian gas flows, but lowered our 2H22 forecast on expectations of anemic consumption growth and a slowdown in investment growth and net exports.
- We brought forward our expectation for the start of ECB rate hikes to July following our near-term activity upgrade that avoids negative 2Q22 growth, continued inflationary pressures, and recent ECB commentary.

Datapoints/trends we're focused on

- Russian gas disruptions, which would negatively affect growth.

Russian gas disruptions remain limited, but a risk

Gas flows from Russia, mcm/d



Source: Bloomberg, Goldman Sachs GIR.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

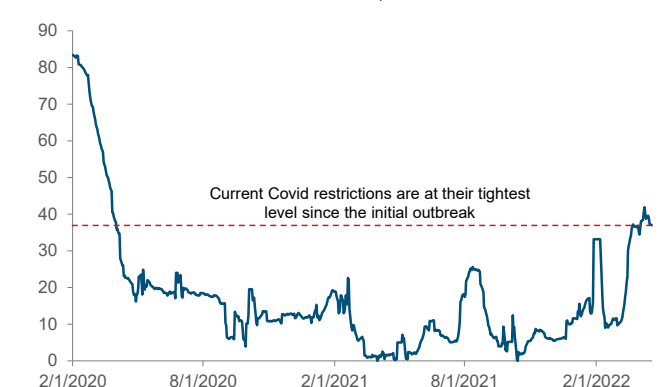
- We recently lowered our 2022 CEEMEA GDP forecast to -0.1% to account for the deep Russia recession we expect.

Datapoints/trends we're focused on

- China Covid situation; virus restrictions remain elevated as outbreaks continue in many parts of China.
- EM monetary policy; we expect higher terminal rates across CEEMEA, LatAm policy rates to move deeper into restrictive territory, and a less hawkish outlook for Asia.

Covid restrictions have tightened in China

GS China Effective Lockdown Index, 7dma



Source: Oxford, Google LLC "Google COVID-19 Community Mobility Reports"; <https://www.google.com/covid19/mobility/> Accessed: 4/24/2022, Wind, GS GIR.

(De)Globalization ahead?

Amid the dual crises of Covid and Russia's invasion of Ukraine, globalization is arguably facing its biggest test of the post-Cold War era. By exposing the downsides of global integration, whether via supply chain disruptions or the sharp spike in commodity prices, both crises have called into question a multi-decade process that has led to the freer flow of goods, services, people, and ideas around the world. In doing so, they've raised the prospect that globalization could reverse in the coming years, potentially leading to greater global fragmentation. As investors contend with these seismic shifts, where globalization is heading from here—and what that means for the economy, markets, and society—is Top of Mind.

We start by speaking with Adam Posen, President of the Peterson Institute for International Economics, Dani Rodrik, Professor of International Political Economy at the Harvard Kennedy School, and Jim O'Neill, former Chairman of Goldman Sachs Asset Management, who disagree on whether globalization has reached a turning point. Rather than spelling the end of globalization, Posen argues that the pandemic and war in Ukraine will hasten its corrosion in some areas as the world becomes increasingly bifurcated into two economic blocs aligned around the US and China.

But Rodrik sees longer-term, structural forces at work, emphasizing that the world has been deglobalizing ever since the Global Financial Crisis as countries have naturally turned inward, partly as they've become wealthier, and as the world economy has increasingly regionalized. While the latest crises will only deepen these structural trends, he doesn't see the world heading towards a significant decoupling akin to the 1930s, due to high levels of global economic integration and international cooperation today that will be difficult and costly to reverse. And O'Neill is skeptical that the era of globalization has peaked, arguing that future trends in trade and global capital flows may translate into an evolution of, rather than an end to, globalization.

GS senior global economist Daan Struyven, and Jan Hatzius, GS Head of Global Investment Research and Chief Economist, then dig into the data to assess where globalization actually stands today, finding that "slowbalization", or a gradual slowdown in the growth of cross-border flows, better describes the latest trends in the movement of goods, capital, and people. And they argue that the sharp rise in cross-border digital activity supports the notion of "newbalization", or the idea that the nature of globalization itself is changing as flows slow in tangible areas while accelerating in intangible ones.

Given their differing POVs, it's no surprise that our contributors also disagree on the economic implications of these shifts. O'Neill sees the continuation of globalization that he expects as a good thing for the global economy, although he believes that the losers from globalization need to be better compensated. And he argues that new patterns in global trade and capital flows, driven by the Western response to Russia's invasion of Ukraine and China's evolving role in the world, could actually boost trade and economic growth. Posen agrees that globalization has been undeniably great for the global economy, and argues that it's mostly been the scapegoat for domestic failures to address economic inequality. So he bemoans its corrosion, which, he says, could ultimately lead to the return of secular stagnation. But GS global economists Daan Struyven

and Dan Milo believe that further "slowbalization" is just one more reason to think that inflation and nominal interest rates will be higher in the coming cycle as reduced import competition raises goods prices.

On the other hand, Rodrik welcomes a retrenchment of the hyperglobalization of recent decades, which, he says, went too far in the direction of furthering the interests and rights of powerful economic actors, like international banks and corporations. He looks forward to the potential for a better model of globalization that prioritizes workers, the environment, and global public health, but cautions that such an outcome isn't a foregone conclusion, and will require us to make better choices about the kind of globalization we want. He also disagrees with Posen and Struyven/Milo about the impact of the next era of globalization on inflation, arguing that trends in inflation, as well as in growth and productivity, will mainly be determined by the quality of domestic economic policies.

Despite their disagreements on the future of globalization and its economic implications, Posen, Rodrik, and O'Neill do see eye to eye on at least one thing—significant reshoring isn't set to take place anytime soon. James Covello, GS Head of Global Equity Research, generally agrees, arguing that the reshoring of important supply chains like semiconductors isn't feasible over the near term, if at all, due to punitively high costs, technological challenges, and indiscernible benefits. And GS US economist Ronnie Walker finds that evidence of meaningful reshoring indeed remains quite limited so far, with companies choosing to overstock inventories as their preferred method for improving the resiliency of their supply chains.

What will all of these trends mean for the Dollar, and assets more broadly? Posen and O'Neill believe that the shifts in globalization that they expect, as well as the weaponization of finance in response to Russia's invasion of Ukraine, will likely have only limited implications for the Dollar. Posen instead thinks the main change in markets may be increased demand for non-sovereign assets, and O'Neill expects that the potential reversal of countries' sizable accumulation of foreign exchange reserves in response to the West's decision to freeze Russia's reserves, together with the end of quantitative easing, should have negative implications for Western government bonds.

But Zach Pandl, GS co-head of Global FX, Rates, and EM Strategy, argues that the US' weaponization of the Dollar, together with stiffer competition from other currencies, will likely lead to a further erosion in the Dollar's role as the world's dominant currency over the coming years. This, combined with other tactical and structural shifts likely underway, reinforces his view that the Dollar will weaken over the medium term.

Finally, Jeff Currie, GS Global Head of Commodities Research, and Daniel Sharp, GS commodities strategist, argue that continued deglobalization driven by great power politics and rising political pressure to address income inequality will be a key driver of a commodity supercycle ahead.

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Interview with Adam Posen

Adam Posen is President of the Peterson Institute for International Economics. Previously, he was an external voting member of the Bank of England's Monetary Policy Committee (2009-2012). Below, he argues that the corrosion of globalization is set to accelerate as the world increasingly fragments into two blocs aligned around the US and China, which could ultimately lead to the return of secular stagnation after the current period of heightened inflation.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: You've recently written about the "end of globalization". Is the current focus on this overblown, or is globalization at a turning point?

Adam Posen: What we're seeing is better described as a corrosion, as opposed to the end, of globalization. That's because globalization isn't a

single concept, but rather a multi-layered interaction between economies and societies along many dimensions, including trade and investment, the flow of people, finance and ideas, and the development of business relationships and networks. In some of these areas, globalization continues to expand. For example, trade relations between Asia-Pacific countries have deepened with the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). But, in other areas, globalization is contracting, as in the case of Russia's isolation and the broader economic fragmentation resulting from its invasion of Ukraine. And, in fact, [our research shows](#) that the US has been retreating from globalization for over 20 years, with the extent depending on which metric—immigration, trade, foreign investment, etc.—you look at. But the same hasn't been true for the rest of the world, and, in particular, for other high-income democracies in Western Europe, Asia, and elsewhere.

That may now be changing, though, as the world is arguably becoming increasingly bifurcated into two economic blocs—one aligned with the US and the other with China. These blocs won't include every country, and they won't prevent some countries from engaging with both the US and China. But I do think we're at a turning point in that many countries will feel growing pressure to align with one or the other, accelerating the corrosion of global integration, and leading to larger and more frequent holes in the fabric of globalization. So, the world is set to look a lot messier ahead.

Allison Nathan: Much has been made of globalization's role in exacerbating inequality in advanced economies, fueling populist politics, and undermining the sovereignty of democratic governments. So could there be a silver lining to a partial reversal of globalization?

Adam Posen: No. While globalization is politically contentious, it has largely been great for the US and the world. The reason the US has been retreating from globalization for 20 years is precisely because the political consensus has shifted towards the view that it has been bad for people in the US, and particularly for the working class. But the evidence, frankly, remains the opposite. Certainly, some US workers lost their jobs due to Chinese competition in the manufacturing sector. But

even by the largest estimates, this accounted for only roughly 1 in 150 of the jobs lost in the US in recent years. While these job losses are unfortunate, they're no more or less special than the other 149 jobs lost for reasons unrelated to globalization. And while some people claim that the real issue is that the losers from globalization haven't been sufficiently compensated, that's just not true; they've received far more attention and government support than people who have lost their jobs for other reasons.

“The reason the US has been retreating from globalization for 20 years is precisely because the political consensus has shifted towards the view that it has been bad for people in the US, and particularly for the working class. But the evidence, frankly, remains the opposite.”

Meanwhile, on the positive side of the ledger, globalization has subsidized US universities via the inflow of talented foreign students, provided consumers with a vast number of choices, and spurred significant innovation by fostering a global network of ideas. And the economies that have outperformed the US over the past two decades have done more—not less—to embrace globalization in areas such as immigration and foreign investment. With all this in mind, I just don't buy the idea that globalization has been a net negative for the US, or that withdrawing from it further could be a net positive.

Allison Nathan: But isn't there inherently a tradeoff between global integration and the health of domestic industries, workers, and democracies?

Adam Posen: No; if anything, the logic runs the other way on at least three counts. First, blaming globalization for the very real problems of inequality and limited economic opportunity for parts of the population just provides politicians an excuse to do nothing about them. In reality, these problems have little to do with globalization, but aren't being addressed because a faction of politicians doesn't want to undertake the social and other policies required to tackle them. Second, the US retreat from globalization over the past couple of decades has actually led to greater industry concentration, with many sectors dominated by incumbents who don't feel pressure to compete, and charge consumers more, as well as a rise in domestic corruption.

Third, the idea that displaced, disgruntled workers are the ones opposing globalization is a myth. The truth is this is an ideological issue rather than an economic one. Polling data shows that anti-globalization sentiment is highly correlated with authoritarian,

nationalist, and, frankly, racist, values, attitudes and behavior. While there are legitimate non-economic reasons for opposing globalization related to things like freedom of choice or one's world vision, the pernicious values underlying much of the anti-globalization sentiment today aren't a justifiable excuse for undercutting our economic well-being.

Allison Nathan: But even if globalization has been a net positive for the world, there's been a lot of talk about reshoring, boosting domestic production, and shortening supply chains in response to the pandemic and Russia's invasion of Ukraine. Are we seeing any evidence that this is actually happening, and what would be the economic implications of these types of shifts?

Adam Posen: The evidence so far has been quite mixed. Last year, foreign investment into China [surged](#) to a record high, 60% of American companies operating in China reported that they increased investment there, and not a single firm relocated production from China to the US. That said, the recent supply chain disruptions have been a genuine wake-up call for companies, alerting them to the extreme dependencies of their production processes that have developed organically over time as mid-level managers have sought ways to cut costs or improve quality. And so managements are being forced to evaluate individual choke points they didn't know existed. But that's more of a one-time shift.

The more lasting change, in my view, is that in a world of greater US-China conflict and fragmentation, companies may need separate lines of production, standards, and networks to sell into each country. In the short term, these shifts could create an investment boom as companies build out redundant capacity, which would support economic growth. But, over time, these redundancies would reduce economies of scale and drive down the real economic returns of such investments. So, restructuring supply chains may be a rational response to recent health and geopolitical developments, but it will likely come at an economic cost eventually.

Allison Nathan: What will these deglobalization trends, as well as the weaponization of finance in response to Russia's invasion of Ukraine, mean for the Dollar?

Adam Posen: I see this as less of a turning point for the Dollar than for some of the other pillars of the global economic order that we've discussed. While most countries agree with the sanctions that the US and other Western countries have imposed on Russia, many are no doubt looking at the extreme actions that have been taken and wondering whether something similar could happen to them, and if they should be diversifying away from the Dollar as a result.

That said, in an environment of US-China confrontation, there's a countervailing force to such concerns, which is that countries want to be on the right side of this growing divide. And given China's demonstrated willingness to shut down large swaths of its economy, impose or remove capital controls on a whim, or decide at any moment how much an individual can convert into non-Chinese assets, it's very unclear whether governments and investors are better off holding the Yuan. So the Dollar is still winning the "least ugly contest" between itself and the Yuan, even if the Dollar seems less secure than in the past.

What has changed on the margin is the relative attractiveness of the Euro as a result of the EU's unified response to the Covid crisis and Russia's invasion of Ukraine. If the EU were to start issuing more joint debt, that could be a boon for the Euro given the current global demand for safe assets. But the Euro isn't yet in a position to challenge the Dollar, and I don't see anything other than the Euro that can challenge it. So, more than a shift away from the Dollar and Dollar reserves, the main change may be increased demand for non-sovereign assets—such as commodities like timber and gold—or even cryptocurrencies, which I personally believe are the latest tulips and aren't a viable alternative to traditional fiat currency. But even these shifts would likely have only a limited impact on the Dollar, representing more of a shift out of sovereign debt, and within sovereign debt, my initial expectation is that the US would actually end up gaining market share over time.

Allison Nathan: With policymakers and markets hyperfocused on the sharp increase in inflation over the past several months, what would an increasingly fragmented world along US-China lines mean for inflation?

Adam Posen: As a former central banker, my first instinct is to say that inflation will be determined by monetary policy choices, and that if the Fed and other central banks tighten policy as needed, inflation won't be a problem over the medium-to-long term. That's probably right, but there are two ways in which the increasing fragmentation I expect will have some bearing on the inflation outlook. First, the reduced competition and supply from China will presumably have an inflationary effect in some areas, although the extent to which that may be the case is likely overblown given how much China has moved up the value chain in recent years, and the fact that China has also been a source of global demand, not just relatively inexpensive supply.

And the second, perhaps more important, way leans in the other direction, which is that the process of deglobalization could reinforce the slowdown in trend productivity growth observed in the US and the West over the last few decades. In particular, a lack of capital (i.e. supply) could temporarily drive down returns on capital, productivity and income, as occurred in the 1970s and after the oil shocks in the 1980s. And so, after a relatively brief period of worrying that inflation is too high, we could find ourselves back in an environment of secular stagnation and too low inflation. To me, that's the largest macroeconomic question we face today—whether we end up with endemic inflation or secular stagnation as we move through this cycle.

For now, my sense is that a return to secular stagnation is the more likely outcome given the deglobalization trends I expect. And further tilting me in that direction is my view that pricing energy differently to deal with climate change, which I hope we do, will initially be disinflationary rather than inflationary as Mark Carney [recently argued](#), because we'll need to replace a substantial amount of capital, business practices, and systems built around cheap carbon, which will initially slow things down. And any attempts to redistribute revenues of future carbon taxes would likely be insufficient to compensate for the job and purchasing power losses incurred, suggesting a negative and disinflationary fiscal impulse on net. But it remains to be seen how this still-open question plays out.

Interview with Dani Rodrik

Dani Rodrik is the Ford Foundation Professor of International Political Economy at the Harvard Kennedy School of Government. His research revolves around globalization, economic growth and development, and political economy. Below, he argues that the era of hyperglobalization is retrenching, which he sees as a potentially good thing.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: Is the recent focus on the end of globalization in the wake of the pandemic and the war in Ukraine overblown, or is globalization at a turning point?

Dani Rodrik: It's likely a bit of both. Even prior to the latest crises, the world has been deglobalizing. Since the Global Financial Crisis (GFC), the

general buoyancy of trade has fallen and the expansion of global value chains has stopped, for several reasons. One, countries have turned inwards. China is the most significant illustration of this, as it has sharply reduced its reliance on trade, with its import and export to GDP ratios down by about 10-15pp from the highs reached just before the GFC. A facet of this is simply that as countries become richer, demand increasingly shifts away from goods and towards services, which are typically provided much more locally and are inherently less tradable. So as countries become wealthier, they naturally become more self-reliant.

Two, to the extent that countries are engaging with the rest of the world, they are increasingly doing so on a regional basis. The most dominant force for global value chains even before the pandemic has likely been the emergence of three regional blocs—one around North America, one around Europe, and one around China and the rest of East Asia. These blocs aren't necessarily exclusionary, but they've driven a broad shift in trading patterns. Recent developments will likely only deepen these structural trends of increasing self-reliance and regionalization. But that doesn't mean that global trade and investment are set to collapse; we're likely not moving back to an era of significant decoupling like the 1930s. Rather, what we're seeing is a natural and desirable retrenchment from the hyperglobalization that characterized the last few decades as the world tries to find a happy medium between the excesses of hyperglobalization and the dangers of autarky.

Allison Nathan: A surge in economic sanctions contributed to past periods of deglobalization, including in the 1930s. Why don't you think that the recent surge in Western sanctions on Russia will lead to similar global decoupling?

Dani Rodrik: Political support for global economic integration and the architecture of international cooperation in macroeconomics, finance, and trade have weakened in recent years, but are still much stronger than was the case in the 1930s, when institutions like the IMF, WTO, and OECD didn't even exist. The world is also much more integrated than ever before—it's now heavily dependent on natural resources from Russia, manufactured goods from China, etc.—which makes the economic costs of reversal much greater. We've also likely learned from past mistakes to some degree—politicians and

ordinary people don't want to return to the trade and currency wars of the 1930s. So, I don't expect the crisis with Russia and the Western response to it to lead to a significant global decoupling. And even when the crisis in Ukraine is over and China returns to being the predominant source of geopolitical tension that's pushing the world away from further economic integration, I still don't envisage a significant decoupling because these forces of cohesion will largely remain intact.

Allison Nathan: Even if the world doesn't significantly decouple, isn't the move towards a less globalized world a bad thing?

Dani Rodrik: We often make the mistake of debating between more vs. less globalization, when we should instead be debating the *kind* of globalization that we want. In reality, globalization can mean many different things, and many models of globalization have been implemented over the course of history—the late 19th century gold standard, the Bretton Woods system that lasted until the 1970s, and the hyperglobalization of the post-1990s period. Each of these models reflected a different set of choices about which areas to globalize. So, for example, in this most recent model that is currently retrenching, we chose to globalize the economic rights of corporations and financial institutions, but not labor rights. We chose to negotiate global minimums for bank capital adequacy ratios and intellectual property standards, but not for greenhouse gas emissions. And we chose to design globalization around the WTO, IMF, and OECD rather than, say, the WHO. These choices led to a model of globalization that went too far in the direction of furthering the interests and rights of powerful economic actors—international banks, international corporations, and highly skilled professionals—and failed to adequately address the concerns of those who would be left behind—primarily the lower and middle classes, less-skilled workers, and many low-income countries—as well as concerns about the environment and global public health. It was a very imbalanced form of globalization, and therefore gave rise to the severe tensions and anti-globalization backlash of recent years.

Now, just because the world is moving away from this hyperglobalization model doesn't necessarily mean that a better globalization will take its place. It's entirely possible that globalization shifts into an uglier form in which a combination of economic nationalism and geopolitical concerns result in a highly fragmented world where nobody is safer or better off economically. But that's no reason to lament the current disintegration of hyperglobalization; a better model of globalization can emerge in its stead if we make better choices.

Allison Nathan: Some observers argue that globalization is being unfairly blamed for problems of economic inequality today. What's your response to that?

Dani Rodrik: These problems can't be blamed entirely on hyperglobalization because hyperglobalization itself was symptomatic of a general frame of mind that viewed the forces of global economic integration as inevitable, unstoppable, and unequivocally positive. The general attitude that markets would lead to optimal outcomes and the associated relaxation of regulations and standards within nations jointly produced much of the economic insecurity and rising inequality in many advanced economies today. The leading politicians of the 1990s and 2000s talked about hyperglobalization as a physical fact that couldn't be changed. President Bill Clinton characterized it as "the economic equivalent of a force of nature, like wind or water", and UK Prime Minister Tony Blair likened debating globalization to debating "whether autumn should follow summer". They essentially signaled to their electorates that they just had to grin and bear the forces of globalization that left them behind, ravaged their communities, and resulted in the disappearance of good jobs as companies outsourced labor overseas. So the whole attitude of our political leaders, which quite interestingly included leaders of the center-left, was not just that hyperglobalization would be beneficial for all in the long run, but that it couldn't be altered by any acts of policy.

That created a big disconnect between the political leaders of the day and the many people who were anxious about what hyperglobalization would mean for their economic prospects, including the electoral base of the parties of the left, which opened the door for authoritarian populists and the far right to gain power. It's true that many political factions often exaggerated the adverse consequences of hyperglobalization. But, without question, it's also true that our political leadership as well as professional economists minimized the costs and concerns of hyperglobalization, arguing that the rising tide would eventually lift all boats. It didn't, and we [now know empirically](#) that the forces of global competition left behind severe economic destruction in some parts of the world, all while policymakers stood by and did little to help.

Allison Nathan: Even if hyperglobalization left some people and countries behind, hasn't it been a net positive for the world as a whole?

Dani Rodrik: You often hear the argument that while it's unfortunate that the process of globalization left behind lower-middle classes in Europe or in the US, it lifted a billion people out of extreme poverty in China, and that's undoubtedly a net positive for the world. But the paradox here is that while China was clearly the greatest beneficiary of the hyperglobalization game, it outperformed precisely because it did not play by hyperglobalization rules. In fact, Chinese policymakers put in place extensive industrial policies, provided subsidies to infant industries, managed the exchange rate, imposed controls on cross-border capital flows, and infringed on intellectual property rights—all violations of the rules of the WTO and financial globalization, in spirit if not always exactly in letter. So the deep irony is that China did so well in the hyperglobalization era by pursuing a set of policies that put its national developmental priorities first and manipulated the rules of the world economy to its advantage, essentially free-riding on the openness of other countries.

Allison Nathan: But would as much of the global population have been lifted out of poverty without the hyperglobalization of recent decades?

Dani Rodrik: Evidence from the Bretton Woods era of globalization suggests that low-income countries like China could have still performed well while advanced economies prioritized their domestic well-being. South Korea, Taiwan, Singapore, and many other East and Southeast Asian economies grew and substantially raised their GDP per capita under the Bretton Woods regime, even as advanced economies pursued policies that prioritized their domestic economies over the world economy. So policymakers could have designed a globalization regime that allowed countries like China to leverage the world economy while also ensuring that advanced countries could take care of their safety nets and enhance, rather than reduce, social protections, labor rights, and the general well-being of workers in their countries.

Allison Nathan: Given all that, what will trends in economic growth, productivity, and inflation look like as the world continues to retreat from the era of hyperglobalization into one that could see increased regionalization and shifting supply chains?

Dani Rodrik: Despite the current focus on what these trends mean for supply chains, I'm not that concerned that the shifting of supply chains will be broadly and persistently inflationary, and, for reasons of expediency, question how much reshoring will happen in any case. More broadly, assuming that the world doesn't retreat from hyperglobalization into economic autarky, the vast majority of growth, productivity, and inflation outcomes will be determined by the quality of domestic economic policies. At most, international economic policies and globalization can provide an enabling framework that allows countries to pursue their domestic economic agendas, which at this point require a serious rethink and reprioritization.

A large reason why productivity growth in advanced economies has been so poor recently despite the advent of new technologies like artificial intelligence, is because these technologies aren't widely disseminated within and across economies, instead remaining the province of a relatively thin layer of workers—those that are highly educated and highly skilled. So, to achieve greater productivity growth, and in turn greater economic inclusion, we need to ensure that the benefits of new technologies are disseminated more broadly. That will require a reorientation of innovation policies in a more labor-friendly direction, whether that means using technology to enhance or augment less-skilled labor rather than to replace it, or providing less-skilled workers with the technological tools to perform more skilled tasks and therefore participate in more productive and advanced sectors of the economy. Ensuring that every worker in every household in every region has the capacity to participate in a more productive economy, not through handouts, social policy, or government transfers but through the creation of meaningful and good jobs, will go a long way towards creating favorable economic trends, and is likely to have little to do with how globalization evolves in the years to come.

Is the world deglobalizing?

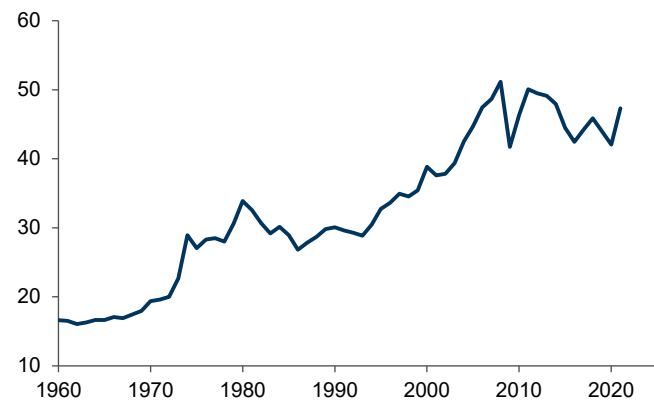
Daan Struyven and Jan Hatzius detail the latest trends in globalization across goods, capital, people, and technology

Investors are increasingly asking whether the US-China trade war, the pandemic, and, mostly recently, Russia's invasion of Ukraine, are ushering in a new era of "deglobalization". A look at cross-border movements of goods, capital, people, technologies, data, and ideas in recent decades suggests such deglobalization trends are already well underway in some areas, but are unlikely to take hold in others.¹

Goods: a China-driven slowdown

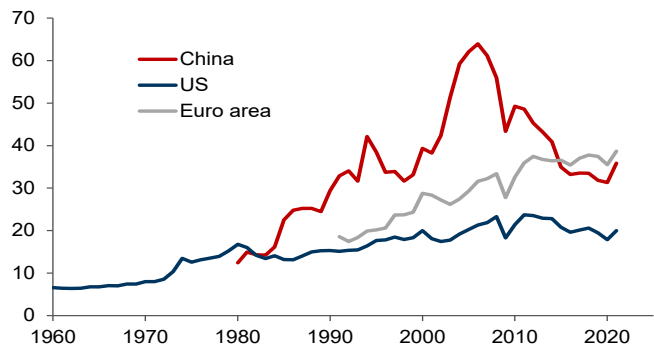
Global goods trade—or the sum of merchandise imports and exports—has edged down by 4pp to 47% of global GDP since its 2008 peak, despite a rapid rebound in 2021 owing to the pandemic-related surge in global goods demand. While global goods trade has increased by 35% in value and 30% in volume since 2008, global GDP has grown more quickly. The biggest driver of this decline has been a 28pp drop in China's trade-to-GDP ratio since 2006, in part because a greater share of the value of what it sells is now produced domestically.²

Global goods trade peaked as a share of GDP in 2008
World merchandise imports plus exports, % of GDP



Source: IMF, World Bank, Goldman Sachs GIR.

China's trade share of GDP has fallen sharply since 2006
Merchandise imports plus exports, % of GDP

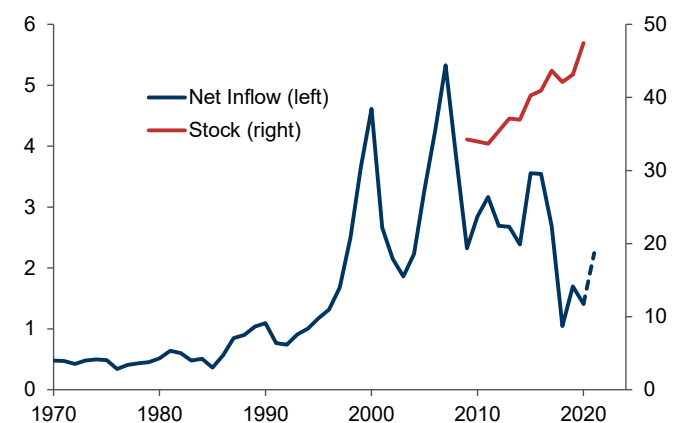


Source: IMF, World Bank, Goldman Sachs GIR.

Capital and people: slowing flows, rising stocks

The verdict on the direction of travel for global financial flows depends on whether we look at stocks or flows. Cross-border flows of both direct investment and equity portfolio investment have declined sharply relative to global GDP since the mid-2000s. But these flows have still been sufficiently large to grow the stock of cross-border investment³ On the official side, by contrast, the net flow of international reserves held by governments has fallen enough to keep the stocks roughly flat relative to global GDP over the past decade, following 15 years of rapid growth.

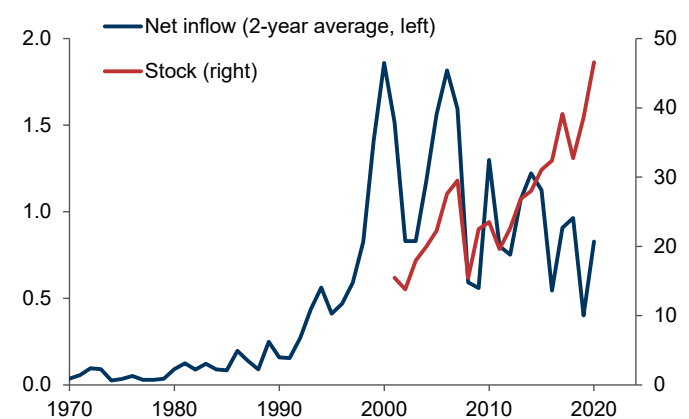
Global FDI flows have declined, though stocks still growing
World foreign direct investment, % of GDP



Note: We estimate 2021 global FDI flows using quarterly OECD data available through 3Q21.

Source: World Bank, IMF, OECD, Goldman Sachs GIR.

And the same is true for global equity portfolio investment
World portfolio equity, % of GDP



Source: World Bank, IMF, OECD, Goldman Sachs GIR.

This contrast between slowing flows and rising stocks is remarkably similar for capital and labor. Indeed, net immigration flows in advanced economies have trended downward over the past decade, but the population share born abroad (a stock measure of countries' migrant populations) has edged up further.⁴ While the pandemic has depressed immigration

¹ Harold James, a Princeton economic historian, has defined globalization as "the movement of money, goods, people, ideas, technologies, and cultures across frontiers."

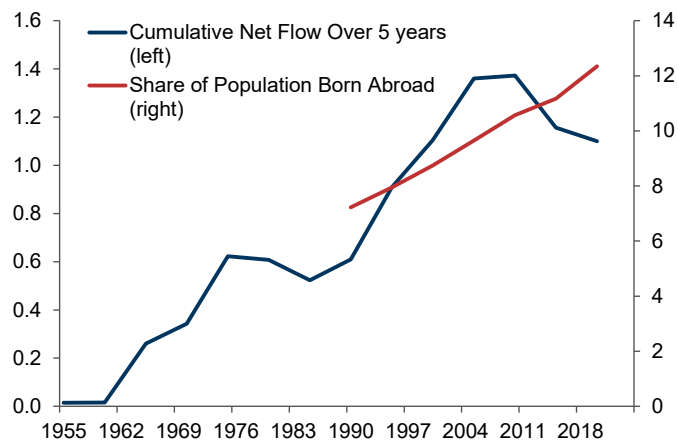
² The foreign value added content of China's gross exports declined from 35% in 2006 to 20% in 2016.

³ Changes in valuation also influence stocks.

⁴ Immigrants tend to be younger, and younger individuals are also more likely to survive and grow their households.

across DMs, net immigration to other European countries is likely to rise as 5.4mn [refugees](#) have fled Ukraine since late February, although some are now returning to areas recaptured by Ukrainian forces.

Immigration slows, but immigrant populations are growing
Developed markets: international migration, % of population



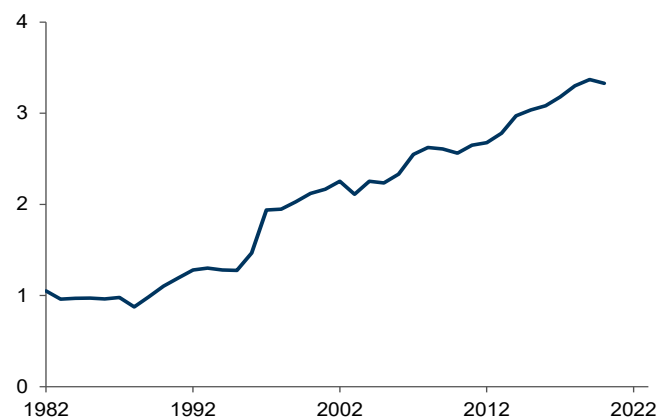
Source: United Nations, Goldman Sachs GIR.

In contrast, more temporary people flows captured by global travel services exports trended up steadily until the pandemic collapse in 2020. Although annual tourism exports picked up somewhat in 2021 in the US and Europe, they remained roughly flat globally, with outright declines in much of the Asia-Pacific region.

Technologies, data, and ideas: full speed ahead

While flows of goods, capital, and people have slowed, exports of computers and communication services have risen significantly since the early 1990s and show few signs of slowing. Exports of computers and communications services now account for more than 3% of global GDP and around half of services exports, well ahead of travel, transport, and financial services.

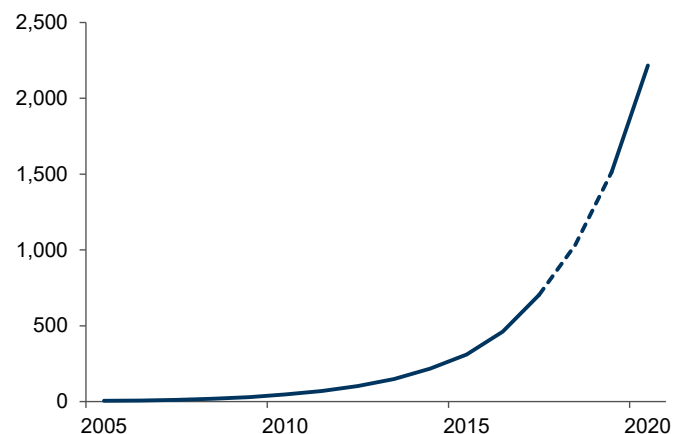
Computer and communication services exports trend up
World exports of computers and communication services, % of GDP



Source: World Bank, Goldman Sachs GIR.

Even more strikingly, used cross-border internet bandwidth, which provides one measure of global data flows, has grown 115x since 2008⁵ UNCTAD [finds](#) that content providers have driven much of this explosive growth, with an estimated 80% of total internet traffic related to videos, social networking, and gaming services. These services are to a high degree provided by major platforms such as YouTube (Google), Facebook, Instagram, or Netflix, for instance. The tech giants' user base is highly international, with a 80-90% non-US share of monthly active users⁶

Cross-border data flows have exploded
World used cross-border bandwidth, terabits per second



Note: Dashed line reflects that 2018/2019 values are interpolated.
Source: Telegeography, McKinsey, SensorTower, Goldman Sachs GIR.

Slowbalization in some areas, newbalization in others

Taken together, the term "slowbalization"—slowing growth in cross-border flows—better describes the trends for goods, capital, and people over the past 10-15 years rather than deglobalization—or outright declines in cross-border flows and stocks. The surge in digital cross-border activity also supports the notion of "newbalization", or the idea that the nature of globalization itself is set to change in coming years as flows continue to slow in tangible areas, such as goods trade, while accelerating in intangible areas, including trade in services and cross-border data flows.

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⁵ The International Telecom Union defines used international bandwidth as the average traffic load of international fiber-optic cables and radio links for carrying internet traffic.

⁶ While China has limited market access to several US tech giants, their Chinese competitors have mainly succeeded in dominating the local market rather than in displacing US firms from third markets. See David Mericle and Daan Struyven, "Trade Wars and the New National Champions", US Economics Analyst, 1 April, 2018.

Interview with Jim O'Neill

Jim O'Neill was Commercial Secretary to the UK Treasury (2015-2016) and Chairman of Goldman Sachs Asset Management (2010-2013), head of Goldman Sachs Economics, Commodities, and Strategy Research (2001-2010), and Goldman Sachs Chief Economist and Chief Currency Strategist (1995-2000). He is currently a Senior Advisor to Chatham House and Chair of Northern Gritstone. Below, he argues that the world likely isn't deglobalizing, which he sees as a good thing given the benefits of globalization.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: Has the era of hyperglobalization peaked, or is the recent focus on the end of globalization overblown?

Jim O'Neill: There's no evidence at the moment to support the fashionable notion of deglobalization. Global trade growth actually [accelerated sharply](#) in 2021, so much so that it was back

above its pre-global financial crisis (GFC) trend level. The people making this argument therefore are likely just talking based on their emotions, as opposed to looking at the facts, or they're confusing the current problems in global governance and the clash between countries like Brazil, Russia, India, and China (the [BRICs](#)) and the West with the world not carrying on in international economic engagement and trade, which aren't necessarily incompatible. So I'm very dubious of the view that the era of globalization has peaked.

Allison Nathan: Is that a good thing? Has globalization been positive for the world?

Jim O'Neill: For the world as a whole, there's absolutely no two ways about it—globalization has been extremely positive, lifting hundreds of millions of people out of poverty in many parts of the emerging world and driving unprecedented economic growth over the past two decades. But it's also clear that not enough has been done to compensate the losers from certain aspects of globalization. In recent years, global productivity has declined and so real wages have fallen too. At the same time, corporate profits as a share of global GDP have soared, but not much investment has followed, as businesses haven't given enough thought to their broader purpose. I am a big believer in what I call "profit with purpose", and in that regard corporations have fallen short. Something has gone wrong, but it's not globalization in itself, which has clearly delivered more benefits for mankind than negatives.

Allison Nathan: But will the populist backlash to globalization that we've seen in recent years lead to its inevitable decline?

Jim O'Neill: Policymakers are starting to treat the inequality that has arisen from or has been exacerbated by globalization more seriously following the rise of populist parties and movements around the world, which initially shocked many of us but was a rational cry from the lower-income communities that haven't shared in the benefits of greater global economic integration. The UK's Levelling Up and Northern Powerhouse initiatives, which I'm heavily involved in, are just two examples of how policymakers are starting to address the unequal effects

of globalization, and these types of initiatives could have consequences for some aspects of globalization in the future. But the idea that addressing the downsides of globalization means that globalization is over, I find hard to believe.

Allison Nathan: All that said, there's been a lot of focus in the US and elsewhere on reshoring production, partly in response to the supply chain disruptions of the last few years. Is there any evidence that reshoring is actually taking place, and do you expect it will?

Jim O'Neill: No. Much of the noise around reshoring is just symptomatic of the 24/7 soundbite world we live in, but it misses the fundamental drivers of global trade and production. Technically speaking, a country's balance of payments is just an accounting identity in which the current account—which is predominately comprised of its balance of trade with the rest of the world—is always offset by the capital account—or its balance of capital with the rest of the world—and vice versa. A country that doesn't save much domestically has to import capital from the rest of the world to meet its domestic investing needs, creating a capital account surplus. And to offset that capital account surplus, the current account must be in deficit, meaning the country must import more than it exports. In other words, the country must run a trade deficit. So, unless the US significantly raises its domestic savings rate, it's essentially always going to be importing more than it exports. The types of products it imports may change—if the US is obsessed with producing more semiconductor chips domestically, it could conceivably do so—but the idea that the US is going to save more and reshore everything is just ridiculous.

Allison Nathan: But even if there isn't significant reshoring in the US, could the world deglobalize in the sense that the BRICs/non-Western countries gravitate towards each other and away from the West, leading to global fragmentation?

Jim O'Neill: Conceivably, but there are several reasons why the world may not become more fragmented along BRIC-Western lines. One, Russia's invasion of Ukraine and the subsequent Western response doesn't necessarily mean that Russia will be closed off forever. It's worth remembering that the G7 was the G8—including Russia—for nearly two decades prior to Russia's invasion of Crimea in 2014. And it might well be that if and when President Putin is no longer in power, Russia's view of the world and its place in it shifts significantly. Two, Chinese leaders are probably quietly furious with Putin's actions, because his miscalculation about the Western response to the invasion of Ukraine has made very clear to China the sorts of consequences it could face if it takes actions that Western governments disapprove of, and Chinese leaders

likely aren't thrilled that they're being forced to think about these issues at a sensitive time domestically for their country. While China likely won't ever publicly announce that it's not close with Russia, I would be surprised if China actually does much to support Russia. Three, people finally seem to be waking up to the notion that was clear to me when I created the BRIC acronym two decades ago, which is that devising a global governance system across countries that don't share the same values is challenging, but imperative to forward progress. And, relatedly, there seems to be a greater acceptance of the idea that China just doesn't want to be like the West. The more awareness and acceptance of these differences, the more likely it is that we are able to engage productively with each other going forward.

Allison Nathan: Do you expect any evolution in the global monetary system as countries potentially rethink their reserve management policies in response to the West's decision to freeze Russia's foreign exchange reserves, a move which you've described as a [masterstroke](#)?

Jim O'Neill: The short answer is, I don't know. But for somebody that's traveled the journey I have on international monetary affairs, I find the current moment absolutely fascinating, and am keeping an open mind to the different possibilities. That said, I don't think this masterstroke has direct consequences for the Dollar, both because it's not just Dollar reserves that are frozen but all Western country reserves, and it's not clear to me what other currencies/assets countries could diversify into. Chinese assets are even more unreliable than Western assets given the Chinese government's grip on them. I doubt that crypto has durability in the way it's popularly discussed, and I don't see much purpose for gold beyond speculation.

But these actions likely do have implications for reserves in general, in that countries may start to wonder why they should hold significant amounts of reserves in the first place, potentially leading them to stop accumulating so much foreign exchange. That could be a nail in the coffin for the global savings glut, as big reserve holders spend more in their own countries and essentially reduce their own domestic savings rates, which may indirectly put pressure on the US to raise its savings rate. While that would be messy for global financial markets, it would probably be positive for global economic growth, because big reserve holders like Japan, China, or Germany don't consume enough of their GDP domestically. In particular, I've long held the view that Europe's dependence on imports from the rest of the world is crazy. Such a rethink of reserve management policies could therefore have very positive consequences.

Allison Nathan: But if countries focus less on accumulating reserves and more on domestic spending, wouldn't that essentially mark a shift towards deglobalization?

Jim O'Neill: Not necessarily; it could instead present a different angle on globalization. Domestic demand and imports are positively correlated, so if we were to find ourselves in a brave new world in which countries that used to accumulate reserves instead spend more at home, they would likely import more and export less. At the same time, other countries like the US may start exporting more relative to how much they import. This

would create a very different pattern of globalization and world trade, but I struggle to see why it would necessarily be consistent with weaker global trade. On the contrary, it may actually result in an acceleration of global trade.

Allison Nathan: Even if the world is not deglobalizing from a trade perspective, does the sharp decline in global capital flows since the GFC at least suggest more fragmentation?

Jim O'Neill: No. While it's factually true that global capital flows have slowed dramatically over the past decade, that's primarily because global banks, and large US commercial banks in particular, have reduced their cross-border lending activity in response to post-GFC regulations on cross-border transactions. But that doesn't equate to strong evidence of a decline in underlying global capital flows. While foreign direct investment (FDI)—another important part of global capital flows—from China into the US has fallen dramatically over the past several years due to US policies designed to achieve this, Chinese capital has been flowing into other parts of the world, and many parts of Asia in particular, under China's Belt and Road Initiative. All of this nuance gets lost under this rather simplistic "us" versus "them" Western lens that assumes that whatever's happening in the West is what's happening in the world in general, which gives an inaccurate picture of how global capital flows are evolving. And if the Belt and Road Initiative were to ever become truly successful, which unfortunately for China doesn't look likely at this point, that could have massive positive consequences for capital flows and trade among Asian and Eurasian countries.

Allison Nathan: Given all that, how should investors be positioned today?

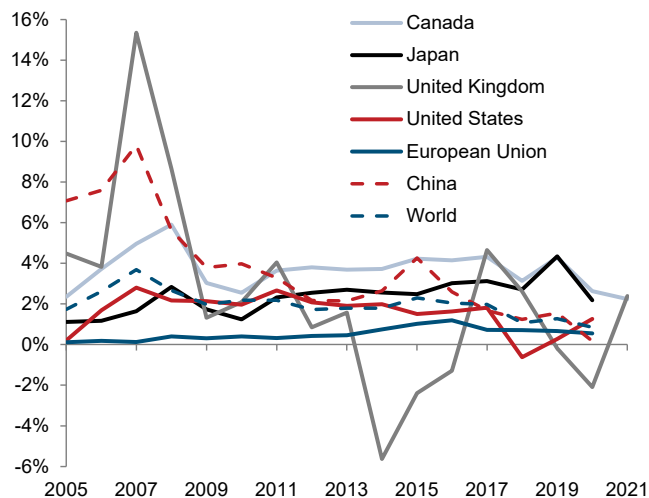
Jim O'Neill: Over the course of my career, I can't recall a time when I've been less sure about how so many big issues will evolve, and the economic and market implications of these potential developments. That said, I strongly believe that investors should avoid Western government bonds, which could very well be at a 40-year turning point. The era of quantitative easing (QE) has vastly outlived its usefulness and is contributing to both the perception and reality of widening inequality, especially on the wealth side, so it's very likely coming to an end. If that proves to be the case, interest rate markets, and particularly bond markets, will pay the price, especially if some of the shifts in the patterns of globalization we discussed come to pass.

By definition, the decline in bond prices and coincident rise in bond yields will be challenging for aspects of the equity market. Given the remarkable equity bull market over the last decade, I find it hard to believe that the next few years are going to be anywhere near as good, and they will probably be quite volatile. But I don't think that necessarily means equity returns will be consistently negative, and in theory, such an environment should be really good for true alpha generators. So the era of sector and stock-picking that's essentially been dormant for a decade could return to the fore. And, in terms of my old stomping ground, FX, the range of the EUR/USD over the past 18 months has been one of the narrowest on record, and I find it hard to foresee a big move in it or any of the major currencies for the time being.

(De)globalization in pics

FDI out of major economies has declined or stagnated...

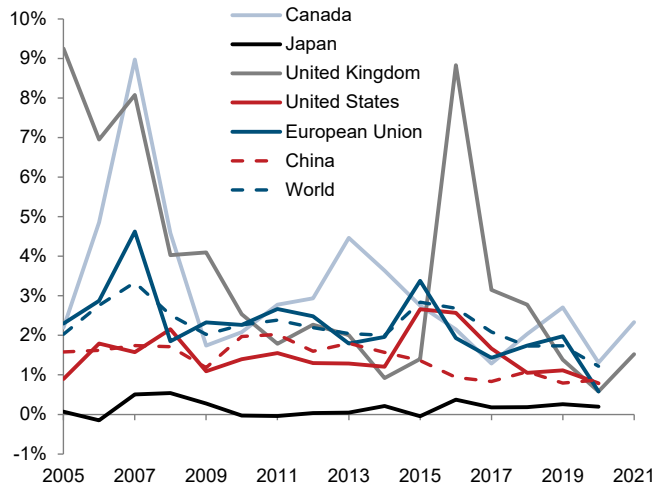
Foreign direct investment outward flows, % of GDP



Source: OECD Foreign Direct Investment Statistics, Goldman Sachs GIR.

...as has FDI into major economies since 2005

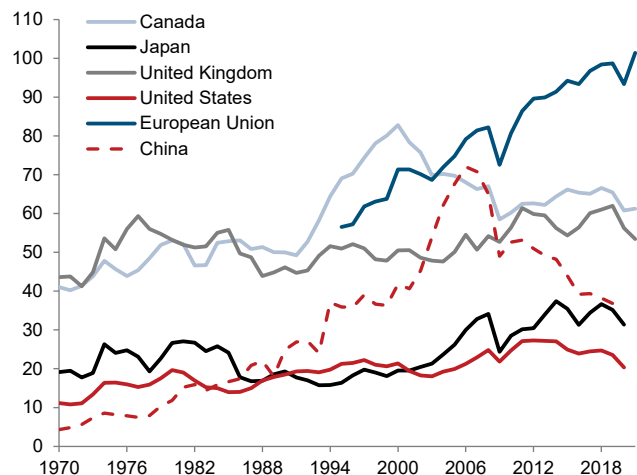
Foreign direct investment inward flows, % of GDP



Source: OECD Foreign Direct Investment Statistics, Goldman Sachs GIR.

Trade has risen in some economies, and fallen in others...

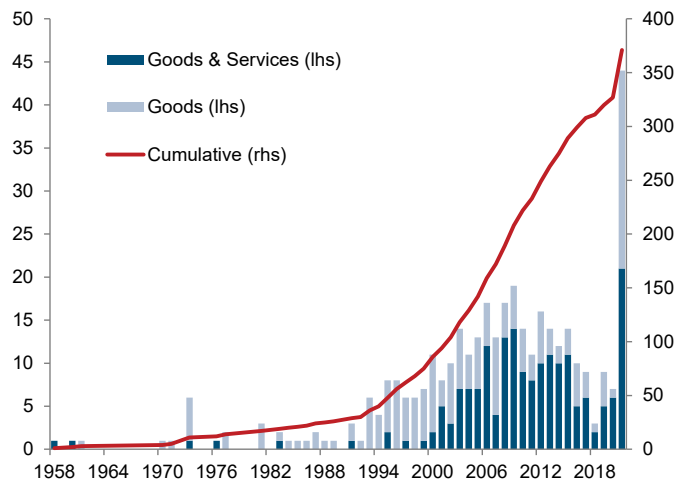
Trade in goods and services, % of GDP



Source: OECD, Goldman Sachs GIR.

...as global trade agreements have grown to >350

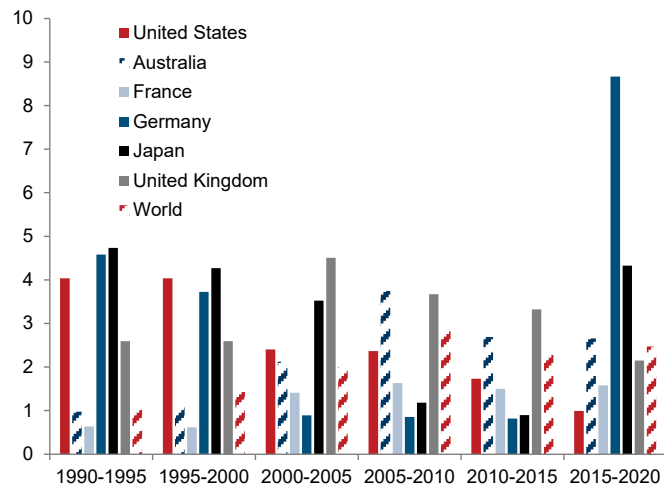
of Regional Trade Agreements in force, by year of entry



Source: WTO Regional Trade Agreements Database, Goldman Sachs GIR.

Immigrant flows have remained low across many DMs

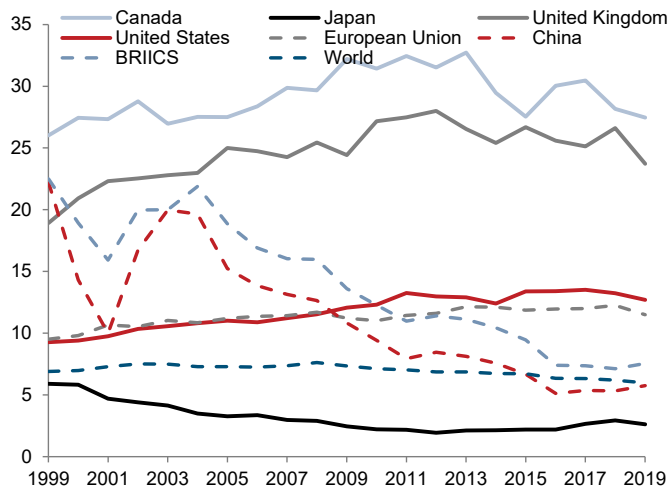
Annual rate of change of the migrant stock by destination, %



Source: UN Department of Economic and Social Affairs, Goldman Sachs GIR.

Global cooperation in science/tech has stagnated or waned

% of patent apps filed under the PCT with foreign co-inventors

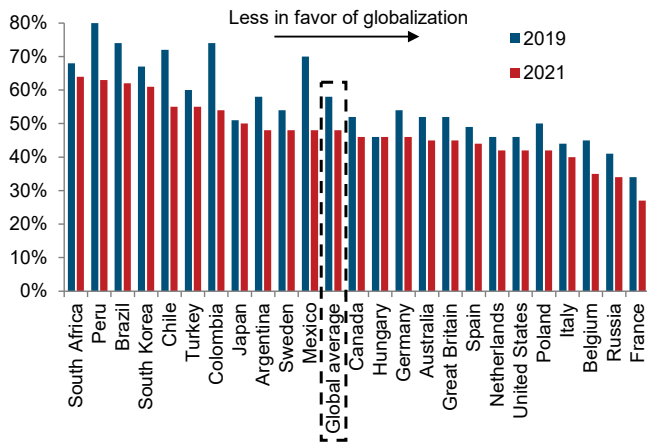


Source: OECD Patent Database, Goldman Sachs GIR.

Shifting attitudes towards globalization

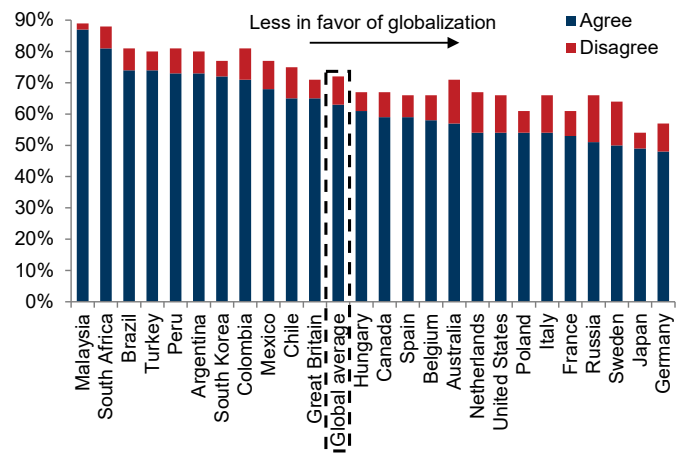
Positive sentiment about globalization has declined...

% of respondents that agree with the statement "overall, globalization is a good thing for my country"



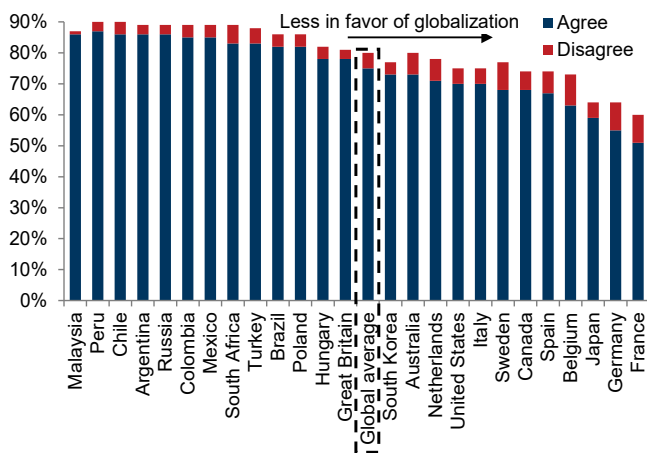
...but majorities in many countries support foreign investment

% of respondents that agree/disagree with the statement "investment by global companies in my country is essential for our growth and expansion"



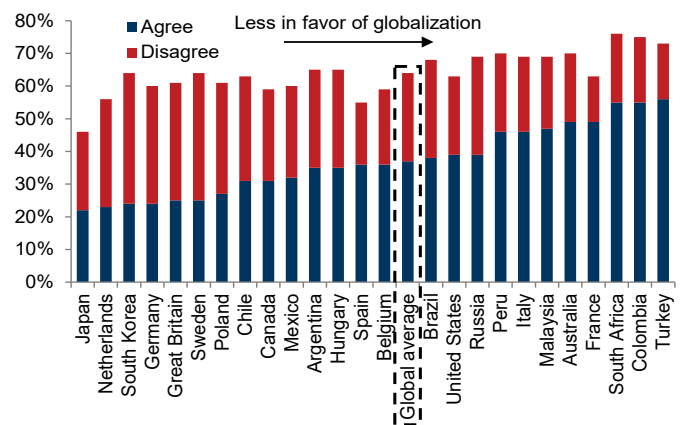
Trade expansion is viewed as a positive by most...

% of respondents that agree/disagree with the statement "expanding trade is a good thing"



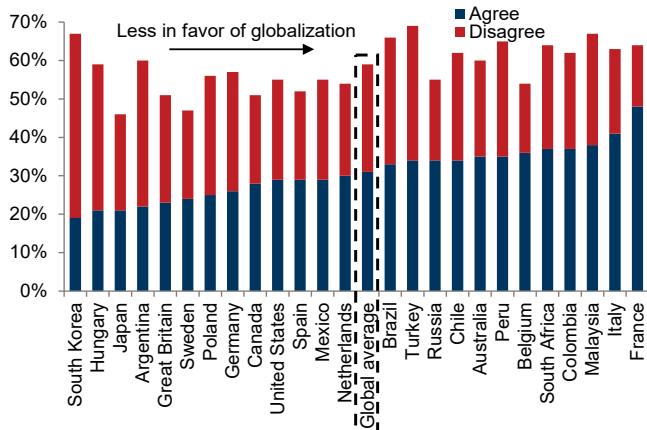
...but more favor more barriers to trade than oppose them

% of respondents that agree/disagree with the statement "there should be more trade barriers to limit imports of foreign goods and services in my country"



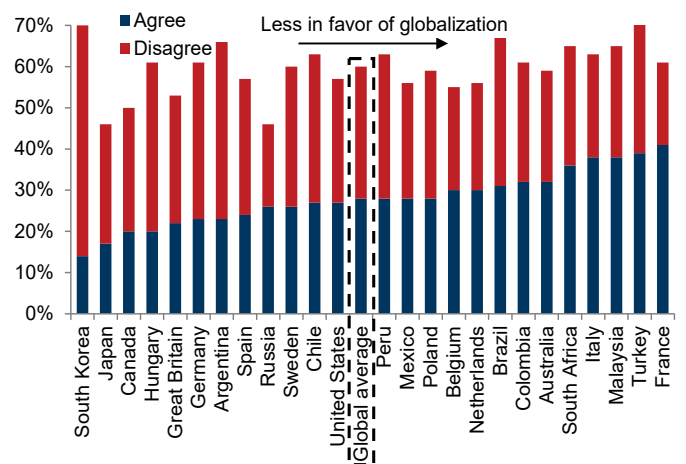
Public opinion is divided as to globalization's impact on the implementation of effective economic policies...

% of respondents that agree/disagree with the statement "globalization prevents my country's government from implementing effective economic policies"



...as well as to its impact on the functioning of democracy

% of respondents that agree/disagree with the statement "globalization prevents democracy in my country from functioning well"



Source for all exhibits: Ipsos World Opinion on Globalization and International Trade in 2021 (25-country survey for the WEF), Goldman Sachs GIR.

Deglobalization and inflation

Daan Struyven and Dan Milo argue that "slowbalization" is another reason to expect higher inflation and nominal interest rates than before the pandemic ahead

Investors are increasingly asking whether the US-China trade war, the pandemic, and, most recently, Russia's invasion of Ukraine, are ushering in a new era of "deglobalization". For our part, we've found that the term "slowbalization"—a gradual slowdown in the growth of cross-border flows—is a better descriptor of the latest trends in the movement of goods, capital, and people than deglobalization (see pgs. 8-9). Should this slowbalization trend continue or even gain steam from here, we believe it could reinforce the case for higher inflation ahead than before the pandemic.

Low-wage imports and inflation

To gauge the possible inflationary impact of slowbalization, and more hypothetically, deglobalization, we first identify shocks to goods produced outside the US caused by the rapid industrialization of Emerging Markets (EM) over the last two decades, finding that increased import competition from low wage countries (LWC) causes significant reductions in import prices and domestic producer prices, with somewhat larger price drops for imports from China relative to other LWCs⁷

We then translate these import and producer price effects into US core PCE effects by looking at the import and domestic production content of core goods and using the fact that core goods account for 25-30% of overall core PCE. Taken together, our results show that a 1pp increase in LWC import concentration lowers US import and producer prices by roughly 4%, which in turn lowers core goods PCE prices by 2% and core PCE prices by around 0.5%.

The effects of deglobalization

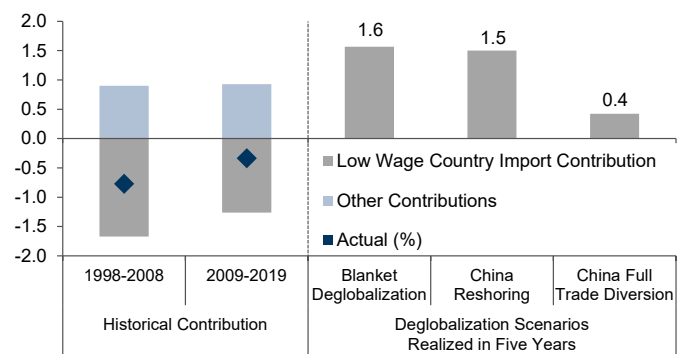
Based on these effects, we consider the inflationary impacts of three potential deglobalization scenarios. A first "blanket deglobalization" scenario assumes a 25% reduction in US-LWC trade, which implies a 7.8% rise in the price level for core goods PCE and a 2.0% rise in overall core PCE. A second scenario assumes that US imports from China decline by 50% while trade with all other LWCs remains stable, which implies a 1.9% increase in core PCE. And a third scenario assumes that imports from China again decline 50% but are offset by trade with other LWCs via full "trade diversion", which implies a more moderate 0.6% rise in the core PCE price level.

Assuming a 5-year transition period for each scenario, we estimate a boost to annual core goods PCE inflation of 1.6pp in the "blanket deglobalization" scenario, 1.5pp in the "China reshoring" scenario, and only 0.4pp in the "China full trade diversion" scenario. By contrast, we estimate that import competition lowered annual core goods PCE inflation by 1.7pp and 1.3pp between 1998 and 2009 and 2009 and 2019, respectively. And for overall core PCE inflation, we see an annual boost of 0.4pp in both the "blanket deglobalization" and

"China reshoring" scenarios, much larger than the 0.1-0.15pp boost to core PCE inflation in the "China full trade diversion" scenario. While these estimates are small relative to today's record-high inflation numbers, the potential increase relative to the two preceding decades is quite meaningful in the context of the Fed's 2% inflation target.

US core goods inflation rises by 0.4-1.6pp across scenarios

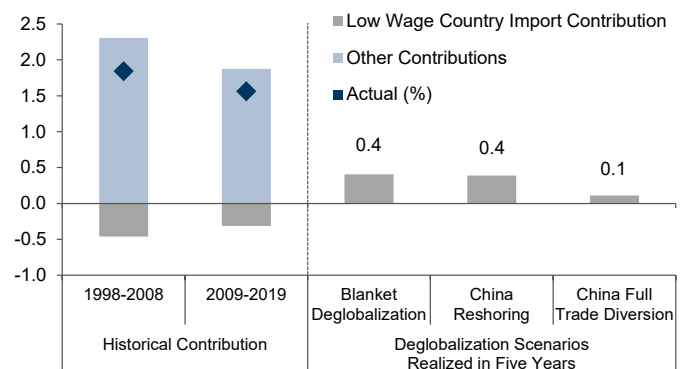
Average annual US core goods PCE inflation, pp



Source: Haver Analytics, Goldman Sachs GIR.

... and the boost to overall core PCE inflation is 0.1-0.4pp

Average annual US PCE inflation, pp



Source: Haver Analytics, Goldman Sachs GIR.

Slowbalization to higher inflation

We reach two conclusions. First, "slowbalization", and the prospect of deglobalization, is another reason, alongside the sizable increases in G10 jobs-workers gaps, higher inflation expectations, and the transition to net zero, to expect somewhat higher inflation going forward than before the pandemic, and therefore also higher nominal interest rates. But, second, declines in trade with specific partners are unlikely to create significant inflationary pressures if trade diversion is feasible, and if a gradual transition period provides sufficient time to build out alternative supply chains.

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Dan Milo, Global Economist

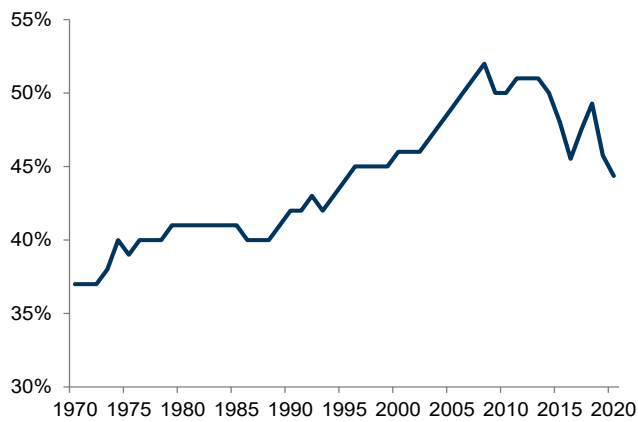
Email: dan.milo@gs.com
Tel: 212-357-4322

Goldman Sachs & Co. LLC

⁷ Our dataset combines US imports, US production, import prices, and producer prices for 300+ manufacturing industries since 2002.

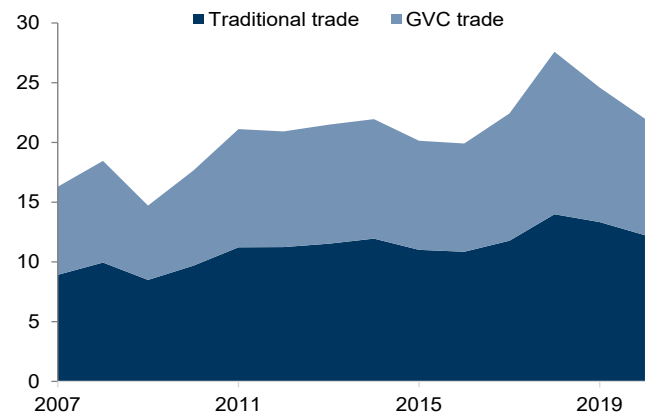
Global value chains in pics

Global value chains have been declining since the mid-2000s
GVC share of global trade, %



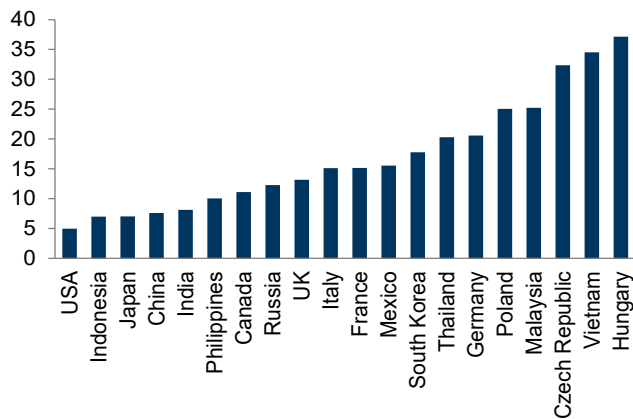
Source: World Bank, ADB, Goldman Sachs GIR.

And their contribution to global trade has plateaued ~\$10tn
Total global trade in traditional vs. GVC trade, \$ trillions



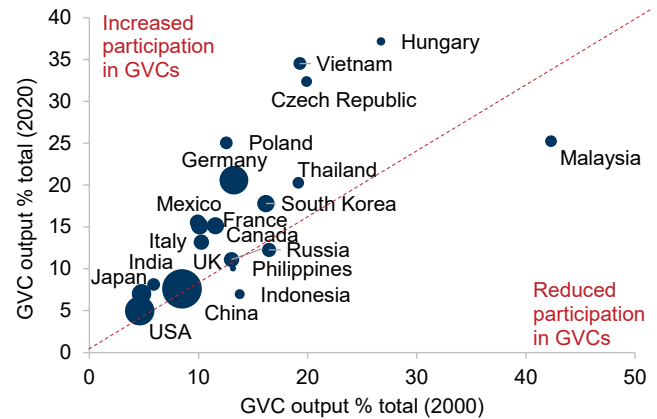
Note: Traditional trade comprises exports produced in one country and absorbed in the destination country; GVC trade is produced/absorbed in more than one country.
Source: World Bank, ADB, Goldman Sachs GIR.

GVCs make up a fairly small share of large economies' output
GVC output as % of total domestic output by country



Source: World Bank, ADB, Goldman Sachs GIR.

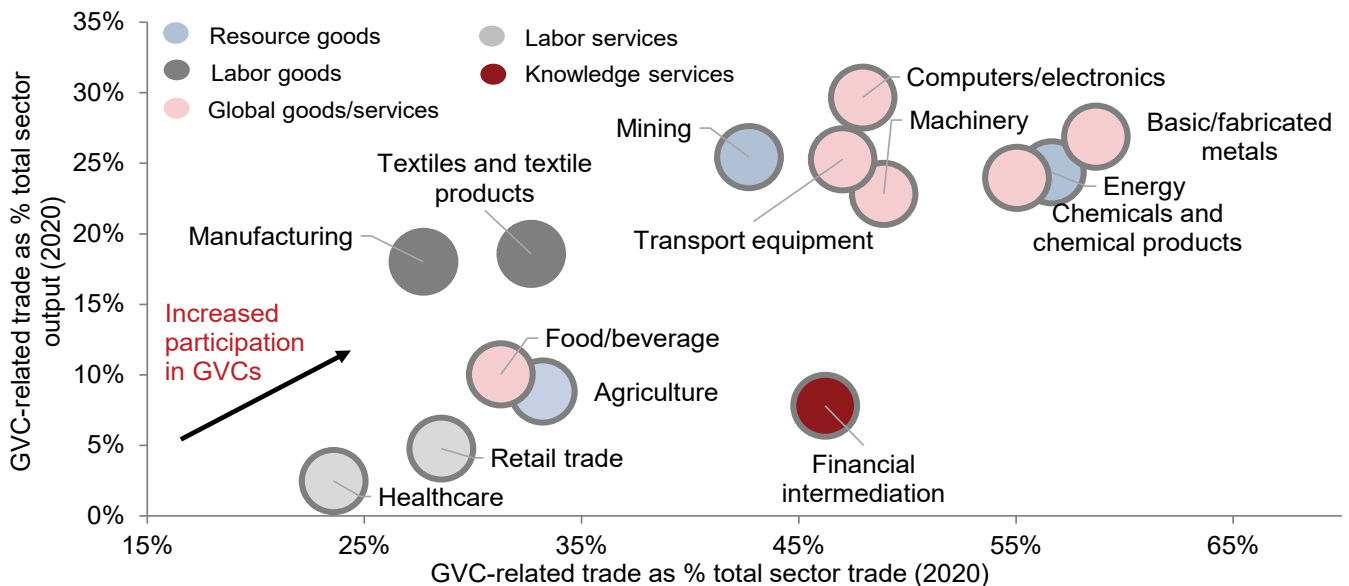
And they've had limited growth in these economies since 2000
GVC output as % of total output (2000 vs 2020)



Note: Bubble size reflects economy's share of world exports.
Source: World Bank, ADB, Goldman Sachs GIR.

Global value chains are incredibly important for a subset of highly globalized sectors

GVC-related trade as % of total sector trade globally (x-axis), GVC-related trade as % of total sector output globally (y-axis), %



Source: World Bank, ADB, Goldman Sachs GIR.

Deglobalization and the commodity supercycle

Jeff Currie and Daniel Sharp argue that great power competition and rising political pressure to address inequality will drive deglobalization and the commodity supercycle

Our view that commodities are entering a new supercycle rests on three tenets: deglobalization, decarbonization, and redistribution. Physical inflationary pressures are a key cost of deglobalization—as the shift to a “made at home” model undoes the comparative advantage of countries in global production, it raises the costs of production of physical goods. In our view, this shift is part of a much longer geopolitical cycle centered around great power competition, which has shaped global trade, conflict, and development since the dawn of the industrial revolution. Such competition forces countries to trade greater inflationary pressures for security of supply. This dynamic has recently played out in the US-China trade war and the isolation of Russia from the global economic system. Even the latest headwinds to global trade are rooted in geopolitical considerations, as China works to keep its zero-Covid track record as a measure of its policy supremacy over the West.

Globalization is part of a geopolitical cycle

The past 150 years have seen two cycles of globalization, the first peaking in 1914-1920 and the second in 2008-2011. In our view, globalization traces a broader geopolitical cycle that has occurred since the industrial revolution and the advent of the first truly global hegemon—the British Empire. Such hegemony is required for globalization to flourish. For trade to grow rapidly, core industries must be offshored to those areas with the highest comparative advantage, governed in a rules-based international order that only one dominant power can enforce. The great power generates a wave of free trade—as Britain did across the Empire with the Corn Laws of the 1840s, and the US did under Reagan’s advocacy of free trade with US allies in the 1980s. The offshoring of industry creates a dependence on foreign imports to sustain domestic growth, raising inequality via both an offshoring of jobs and rapid wealth creation for a select few. This growth of trade also enables the emergence of geopolitical rivals, as we saw first between the UK and Austro-Hungarian empire, then by the Soviet-US conflict, and now by US-China competition.

While the nature of these rivalries differed, they all created a clear policy scapegoat for growing domestic discontent with high inequality. For example, after WWI and the Global Financial Crisis (GFC), respectively, unemployment, income, and wealth inequality in the UK and the US rose markedly, generating a sharp shift in the political landscape towards support for inequality-reducing and protectionist policies. Both the Labour Party’s 1923 victory and the Trump administration represented sharp moves away from previous orthodox economic management. As this shift in domestic politics coincides with greater geostrategic competition, the world begins to deglobalize.

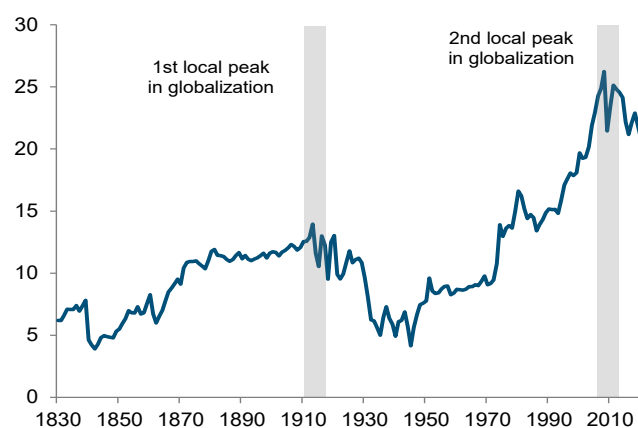
A new wave of deglobalization

Today, the rise of US-China competition, coupled with a resurgent Russia, is helping drive a new wave of

deglobalization. Policy looks to secure strategically important sectors—often raw materials—while aiming to reduce domestic income inequality via higher international taxation and reshoring lost jobs through protectionism. The cycle ends when the competition between great powers sees the emergence of a new hegemon, as the US was toward the end of the Cold War. In our view, while the disruptive effects of deglobalization are front-loaded, the disinflationary forces of globalization and comparative advantage can take decades to reemerge.

The past 150 years have seen two globalization cycles

Value of global exported goods as share of GDP, %



Source: Fouquin and Hugot (CEPII 2016), Goldman Sachs GIR.

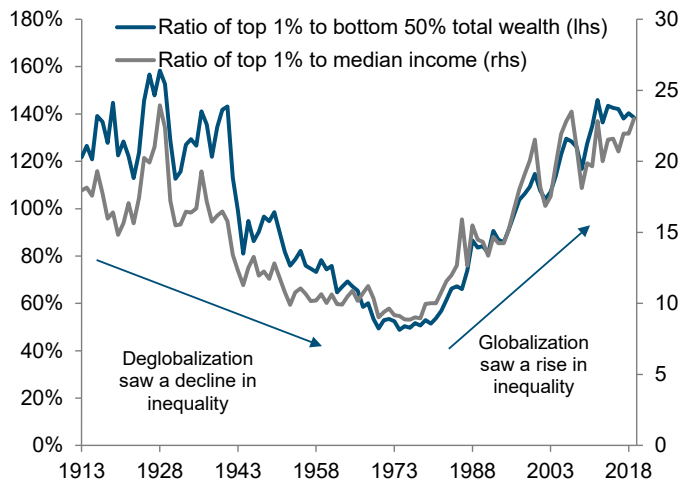
Physical inflation thrives when inequality and globalization collide

When growing geopolitical competition is driving deglobalization, inequality catalyzes the turning points in the global trade cycle, driven by the inextricable link between financialization, the free movement of capital, and the accumulation of wealth by a shrinking minority. However, while globalization heightens inequality, it only drives political change when it reaches a sufficient point to act as an overall binding constraint on the livelihoods of low-income households. Indeed, while inequality was rising globally in the years prior to 1929 and 2008, the overall political pressure against this inequality was relatively benign. However, in the years that followed both events, the real income, employment, and prospects of the majority of low-income households declined meaningfully. This decline, in turn, generated a sharp shift in politics that pushed back against the globalizing political class and looked toward greater protectionism and economic autarky. In other words, rising inequality in and of itself does not generate the shift in politics and hence globalization trends, but rather creates an environment ripe for a shock to generate such a shift.

In response to such shocks, redistributive and industrial policies are implemented to meet social need and compete internationally against rivals. The Covid crisis hit Western societies at a key moment in time. Unlike in 2008, a decade of growing and increasingly politically-sensitive inequality not only pushed aside efforts towards austerity—forcing record-high fiscal spending—but also exposed many of the problems Covid and lockdowns exacerbated, such as income inequality, minority unemployment, and the fragility of just-in-time inventory management. As a result, new policy was aimed at social need, creating cyclically stronger, more commodity-

intensive economic growth that generated a sharp upswing in commodity demand and physical inflation.

Periods of increasing globalization saw a rise in inequality Ratio



Source: *Distributional National Accounts, Goldman Sachs GIR.*

Decarbonization sits between globalization and inequality

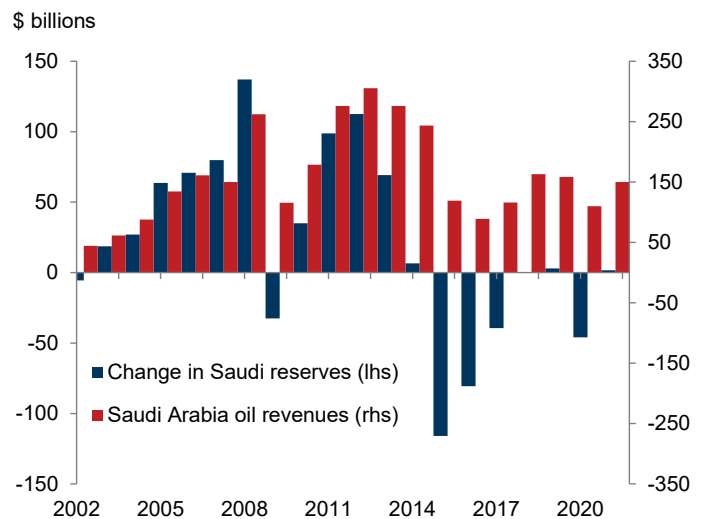
Alongside great power competition, the act of decarbonization is itself a form of energy deglobalization. It requires moving from a fully global system of chemical energy production and trade, to a much more fragmented system of local energy production and consumption. This is because it is much easier to store and transport chemical energy (in the form of hydrocarbons) than electrical energy (in batteries or along wires). While green hydrogen offers an ESG-friendly chemical store of energy, its high energy inefficiency in production and relatively lagged technological advancement make it unlikely to replace the total stock of carbon-based chemical energy. With the productive potential of wind and solar much more evenly distributed than oil, gas, and coal, rising localization of production is a key feature of this green transition.

But decarbonization goes beyond this aspect of deglobalization, also serving a key role as a policy tool in the fight against inequality and as a source of geopolitical competition. Take the example of Europe and Russia today. As ESG investing restricted capital to hydrocarbon producers, higher prices have acted as a “carbon tax” on consumers collected not by national governments but by commodity producers/emitters like Russia and Saudi Arabia, as well as commodity investors, in the form of profits, dividends, and share buybacks. In fact, from 4Q20 to 4Q21, the value of Russian oil exports doubled from \$16bn to \$32bn per quarter, an annualized increase as large as Russia’s \$62bn 2020 military budget, helping to finance its current war in Ukraine. At the same time, Europe is using climate-related investment in a race to gain energy independence from Russia, while all developed markets policymakers are using renewables investment as a policy to help solve social needs in the wake of the pandemic.

The commodity impacts of decarbonization and deglobalization do not stop there. As the comparative-advantage model of globalization declines with greater decarbonization, places like

the Middle East are being forced to diversify their economies. To do this, they are now beginning to spend the savings they developed over the past two decades as well as any new surpluses. As a result, just as the 2000s were defined by a savings glut for commodity producers, the 2020s will likely be defined by a spending spree. In other words, the 2000s saw the rise of commodity-driven dollar recycling—where higher commodity prices generated excess liquidity in Emerging Markets (EM) that were recycled into Western financial markets, elevating asset prices. This dynamic of growing liquidity, higher asset prices, and a weaker Dollar was first observed in the 1970s, and drove the term “petrodollar”. Yet, with EM producers now seeing their own fixed capital formation substantially higher, they have the capacity to deploy this additional capital locally. This local petrodollar recycling—accelerated by the formation of commodity producer national investment funds—will now likely serve to accentuate the bull market further, raising commodity demand from EMs, even while increasing the cost of funding to the West as inflation and rates continue to rise.

In recent years, Saudi Arabia has stopped channeling oil revenues into Dollar reserves



Source: *Bloomberg, Goldman Sachs GIR.*

We are in the early innings

Taken together, we believe the influences of great power competition, decarbonization, and social need will help drive greater deglobalization-related commodity demand during the current supercycle. While maintaining higher-cost but more secure supply chains serves a clear strategic purpose over the lower-cost comparative-advantage model that globalization pursues, it is important for policymakers to be aware of the resulting shift in the macro environment. If history is any guide, these shifts—and their inflationary impacts—are just beginning.

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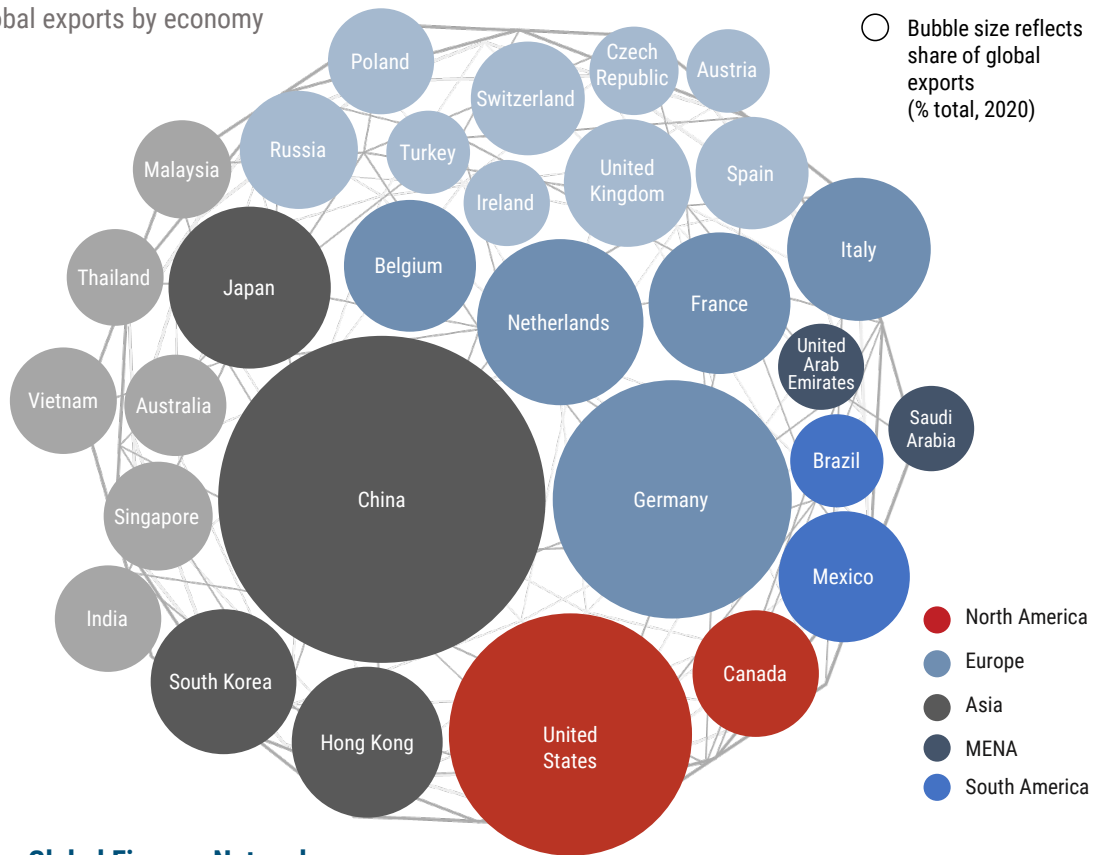
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Networks of global trade and finance

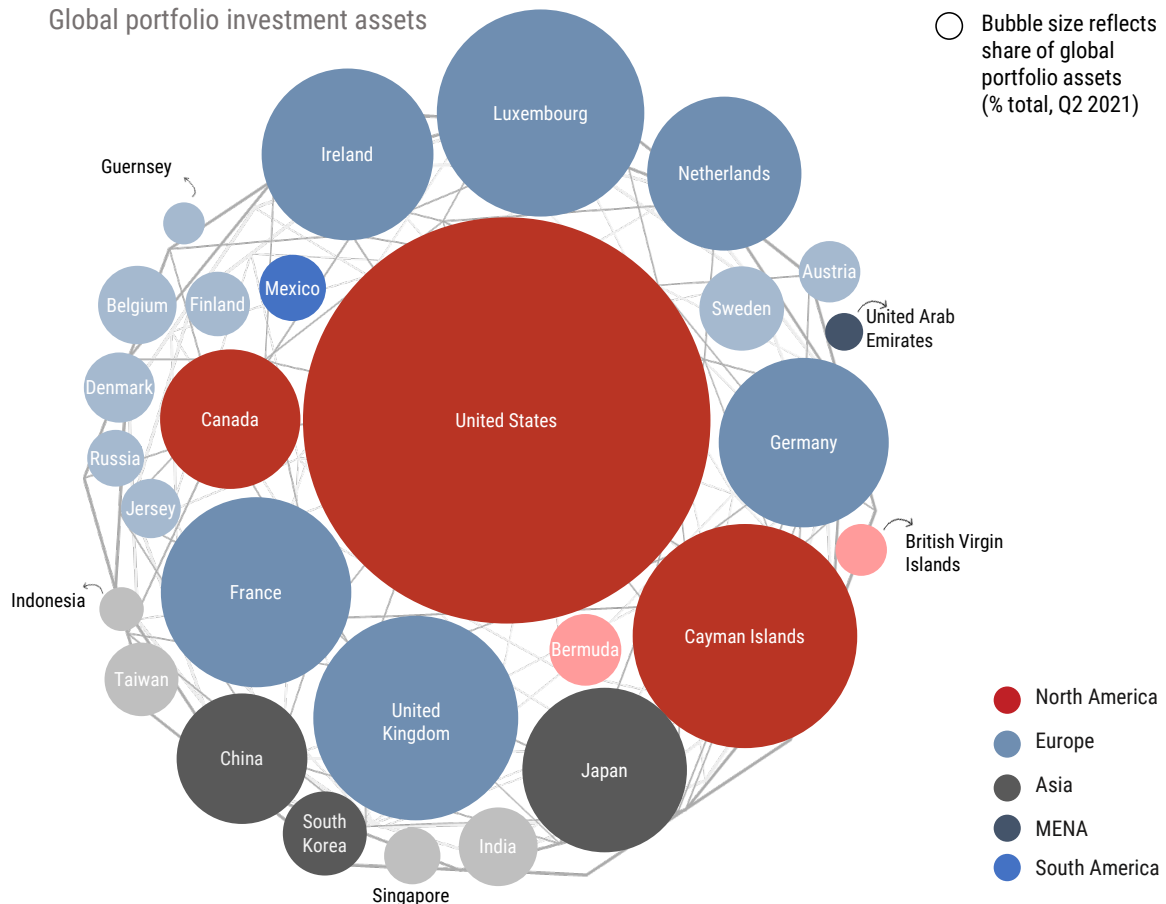
The Global Trade Network

Global exports by economy



The Global Finance Network

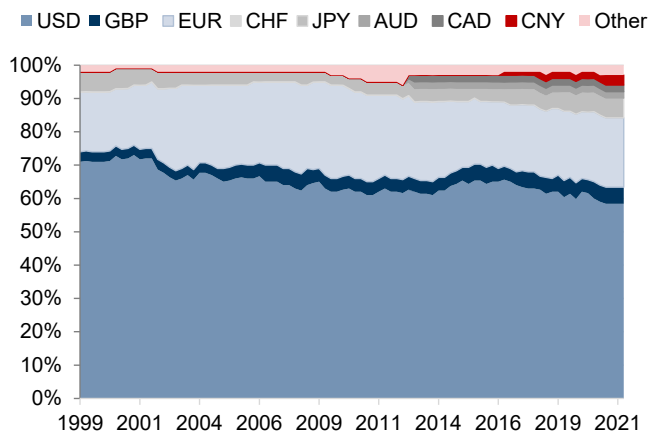
Global portfolio investment assets



Note: Global portfolio investment assets here reflect all financial claims (debt/equity and excluding FDI) of the world on the economy in question and provide a rough proxy for an economy's weight in the global financial system. Gray lines aren't a reflection of the level of bilateral trade or portfolio investment.
Source: Methodology derived from "The Global Financial Cycle", Rey and Miranda-Agrippino (2021), IMF, Goldman Sachs GIR.

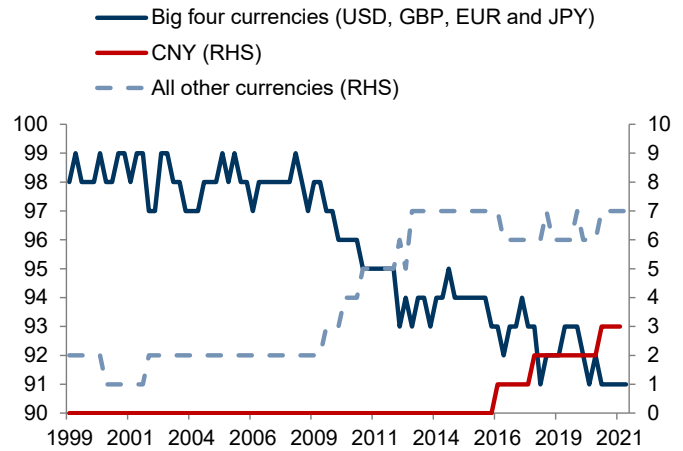
The Dollar's dominance in pics

The Dollar comprises ~59% of global reserves today
FX share of allocated global reserves, % of total



Note: As of Q4 2021.
Source: IMF, Goldman Sachs GIR.

But it's started to slowly lose ground in recent years
FX share of allocated global reserves, % of total



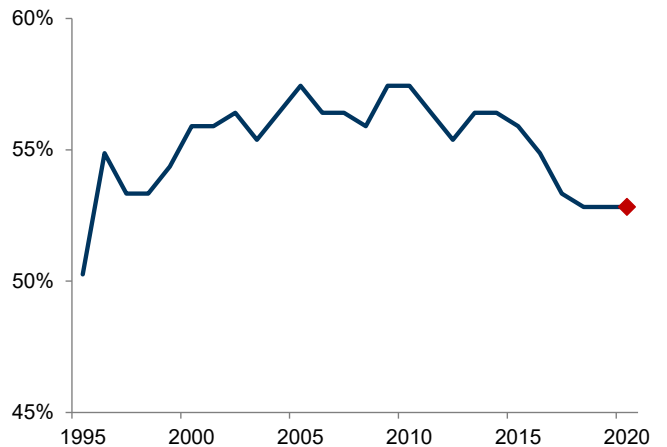
Note: As of Q4 2021.
Source: IMF, Goldman Sachs GIR.

The Dollar is the dominant currency of global trade
Share of global exports destined for US and invoiced in USD, %



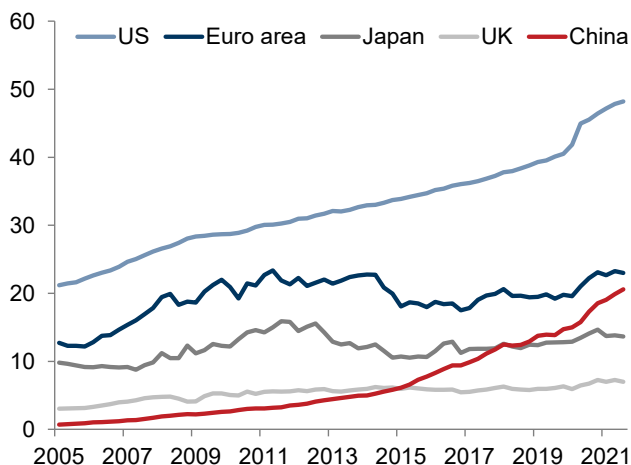
Note: The USD share of global trade invoicing based on Boz et al. (2020) and IMF International Financial Statistics.
Source: Boz et al. (2020), IMF, Goldman Sachs GIR.

But the number of countries with USD anchors has dipped
Share of countries with USD FX anchor, % of total



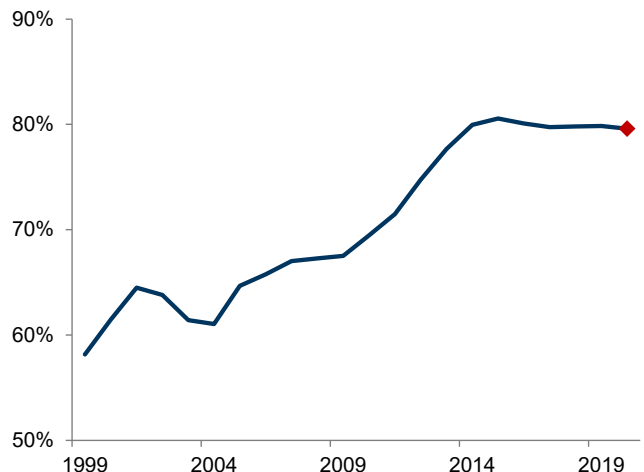
Note: Excludes "freely falling" currencies that have become de-anchored.
Source: Ilzetski, Reinhart and Rogoff (2019), Goldman Sachs GIR.

China's bond market has grown substantially
Total debt securities by issuer residence, \$ trillions



Source: BIS, Goldman Sachs GIR.

And the USD share of external debt issuance has plateaued
USD share of global external debt issuance, % of total



Source: World Bank, IMF, Goldman Sachs GIR.

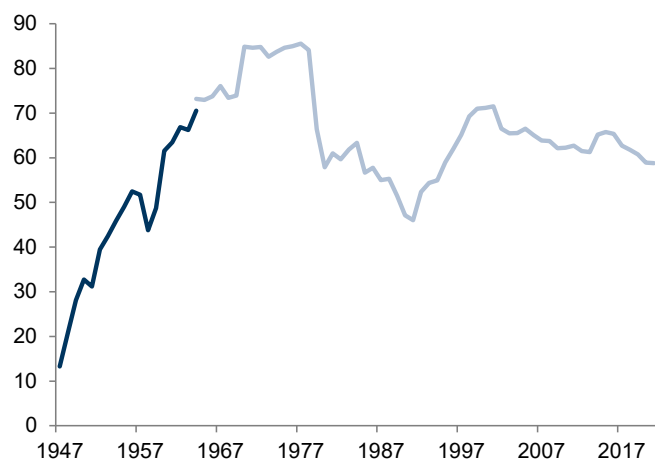
Dollar dominance on a downtrend

Zach Pandl argues that the Dollar's role as the dominant international currency will likely continue to decline over the coming years, reinforcing his view that the Dollar will weaken over the medium term

Within a country's borders, the typical money medium used by households and firms is largely dictated by government rules and regulations. At an international level, by contrast, currency users have a choice. For over six decades, the US Dollar has been the world's dominant international currency, reflecting both the convenience of using the US currency and a lack of suitable alternatives. But the Dollar's international role is now under pressure on both fronts. US foreign policy choices may discourage heavy reliance on the Dollar in some cases, while policy changes by other governments, as well as technological innovation, may help facilitate diversification away from it. The Dollar's share of global foreign exchange reserves peaked at around 85% in the 1970s and fell to below 60% last year, a downward trend we expect to continue over the coming years as other nations pivot toward other fiat currencies and, potentially, alternative money mediums.

The Dollar's share of global FX reserves has declined

Dollar share of global foreign exchange reserves, %



Note: Dark blue line figures are sourced from Eichengreen (2020), and light blue line figures are sourced from the IMF.

Source: [Eichengreen et al. \(September 2020\)](#), IMF, Goldman Sachs GIR.

US foreign policy doing the Dollar no favors

Pressures on the Dollar's dominant international role partly stem from US foreign policy choices, in particular, the US' aggressive use of extraterritorial financial sanctions. Given that all transactions in Dollars eventually pass through the US financial system, preventing US banks and their subsidiaries from transacting with a sanctioned entity effectively shuts that entity out of the global financial system. For example, an EU business could be prevented from trading with Iran, even if it's legal under domestic EU law, because its bank could run afoul of US sanctions. For this reason, the EU Commission has said that US sanctions and trade disputes with other countries represent a threat to the EU's economic and monetary sovereignty.

Overuse of sanctions by the US could discourage other countries from transacting in the Dollar in the first place, a risk

that US officials are well aware of. Former Treasury Secretary Jacob Lew said in 2016 that the US "must be conscious of the risk that overuse of sanctions could undermine our leadership position within the global economy, and the effectiveness of our sanctions themselves... if they excessively interfere with the flow of funds worldwide, financial transactions may begin to move outside of the United States entirely—which could threaten the central role of the US financial system globally." Similarly, former US Secretary of State Henry Kissinger said in 2014: "I do have a number of problems with the sanctions [on Russia for its annexation of Crimea]. When we talk about a global economy and then use sanctions within the global economy, then the temptation will be that big countries thinking of their future will try to protect themselves against potential dangers, and as they do, they will create a mercantilist global economy."

Will the recent imposition of sanctions on Russia's central bank over the war in Ukraine be the straw that breaks the camel's back? Countries hold foreign exchange reserves as a store of value to use in times of crisis. But when the Russian government recently needed its reserves to stabilize the country's financial system, they were immobilized by Western sanctions. As a result, other nations may worry that the value of their Dollar-denominated financial assets is only as solid as their relationship with the US at the time, which may motivate sovereign investors to search for alternative assets, including a more diversified mix of foreign currency holdings.

Dollar facing stiffer competition

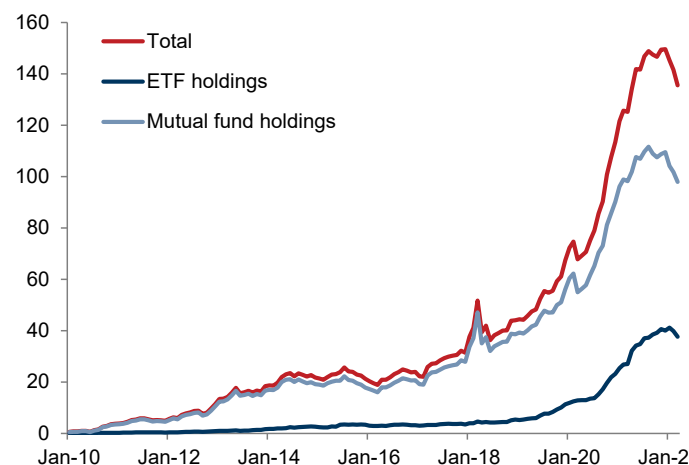
Competition for the Dollar has also gotten stiffer, especially from China, which has taken significant steps to modernize and open up its financial system, leading to a wave of fixed income portfolio inflows in recent years. Since 2016, mutual fund and ETF holdings of Chinese bonds have increased sixfold and official reserve allocations to the Yuan have increased almost fourfold. We expect both of these trends to continue over the coming years, due to likely increases in China's weight in major benchmark indices, as well as the Yuan's relatively high nominal and real yields, its relatively cheap valuation, and China's increasing strategic importance. The Bank of Israel, for instance, cited related considerations when explaining the ramp-up of its Yuan-denominated reserve assets this year. And China's efforts to develop the first major central bank digital currency (CBDC) may also help facilitate international use of the Yuan, perhaps first by Chinese tourists abroad and partner countries in the Belt and Road Initiative.

Separately, recent institutional upgrades to the EU—as well as the prospect of positive cash yields—could help the Euro compete with the Dollar in international currency choice over time. While the Euro functions as an international currency today, primarily in trade with its regional neighbors, it has fallen well short of the project's initial aspirations, and is generally thought to be "punching below its weight", for several reasons. First, the Euro area has lower macroeconomic stability than other highly-developed economies, due in large part to an incomplete fiscal union and therefore more persistent internal imbalances. Second, the Euro area lacks a large supply of the type of high-quality government bonds sought by sovereign investors. And third, Europe lacks the geopolitical reach of the US, in part because foreign affairs and defense policy are still

conducted at the member state level. While the European Union has a coordinator for regional foreign policy, and arguably some aspects of “soft power”, it lacks the type of global military arrangements that help underpin Dollar dominance.

Holdings of Chinese bonds have significantly increased...

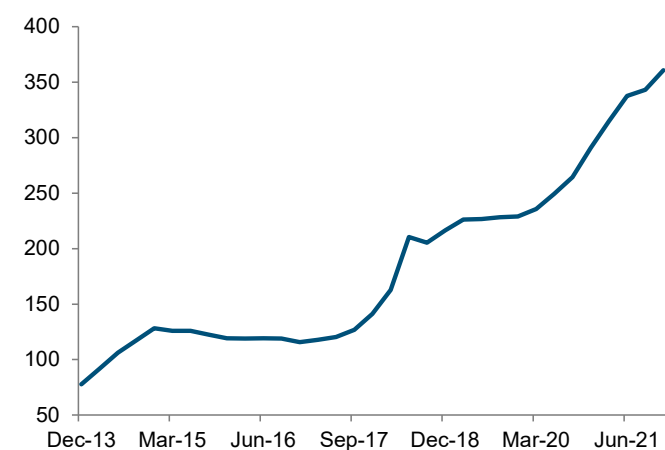
Estimated ending allocations of Chinese bonds, \$ billions



Source: EPFR, Goldman Sachs GIR.

...as have official reserve allocations to the Yuan

Estimated reserve holdings of CNY, \$ billions

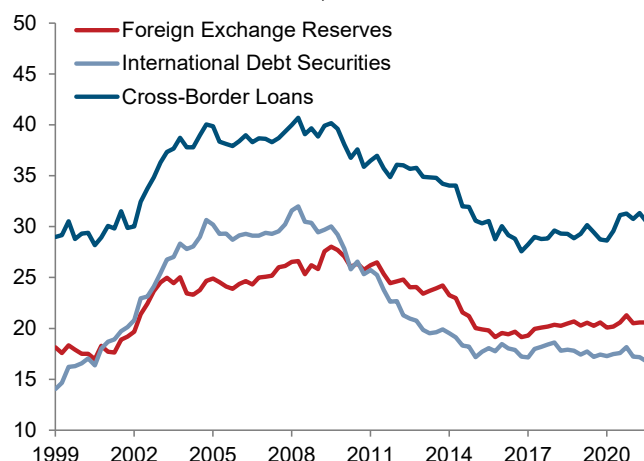


Source: IMF, Goldman Sachs GIR.

However, Europe tends to take steps forward in times of crisis, and the policy responses to recent disruptions are likely building a better foundation for the single currency for the future. While not billed as an effort to speed up Euro internationalization, the EU Recovery Fund/NGEU project—Europe’s response to the Covid pandemic—helps address the Euro’s structural weaknesses, and may therefore have positive implications for the currency’s global use over time. The program addresses macroeconomic instability through intra-regional transfers—in effect, a step toward fiscal federalism—and also creates a new supply of highly-rated government bonds, which should be attractive to sovereigns and other international investors. Russia’s invasion of Ukraine presents new challenges for the EU and Euro area, and may damage economic growth over the short term, but could be positive for the Euro over the long term if it results in an increase in defense spending and more “hard power” for the region.

The Euro: punching below its weight

Euro-denominated share of each, %



Source: BIS, Goldman Sachs GIR.

Lastly, while cryptocurrencies are still in their infancy today, the technology could eventually be applied to certain types of international payments, possibly displacing the Dollar. The Western conflict with Russia, for example, demonstrates the key challenge that cryptocurrency networks like Bitcoin aim to solve: the need for parties who may not know or trust each other to transact value. Gold often served this role as an alternative international money medium to fiat currency in the past. Before Bitcoin, there was no digital equivalent to gold, because digital payments required a centralized intermediary. While there is no guarantee that Bitcoin will serve this purpose in the future, its foundational blockchain technology demonstrates that a scarce digital medium can be created through cryptographic algorithms and the careful use of economic incentives, and some market participants may prefer this type of digital medium to traditional fiat currencies for certain types of international payments.

Declining dominance, eventually a declining Dollar

In recent days and weeks, the Dollar has continued to appreciate as markets have discounted even more monetary tightening by the Fed, and, over the near term, the outlook for rate hikes in the US relative to other economies will likely remain the primary driver of Dollar exchange rates. But over a medium-term horizon, the balance of risk around the Dollar is skewed significantly to the downside, in our view, due to the currency’s high valuation (more than 10% overvalued on our standard models) and three potential structural changes in global capital flows: (i) fixed income flows back to the Euro area as the ECB exits negative rates, (ii) outflows from US equities on any sustained underperformance, and (iii) de-Dollarization efforts by official institutions designed to reduce exposure to Dollar-centric payment networks. The Dollar maintains its role as the world’s leading international currency for many reasons—with reinforcing complementarities or “network effects” a key factor—so this structure will not change overnight. But the shifting tactical and structural trends reinforce our conviction in a weaker Dollar over the medium term.

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Goldman Sachs & Co. LLC

Reshoring: much focus, little evidence

Ronnie Walker argues that signs of reshoring remain limited, though supplier diversification and inventory overstocking have picked up

During the last economic cycle, the media hyped a “manufacturing renaissance” in the US that proved to be more fiction than fact. Recently, however, the pandemic and war in Ukraine have opened the eyes of US companies to the importance of improving the resiliency of their supply chains. A key aspect of that is reshoring—the transfer of manufacturing activities back to the US from abroad. However, reshoring appears to be limited so far, as companies are instead choosing to diversify their supplier base and overstock inventory as their preferred strategies to strengthen supply chain resilience in an increasingly complicated world.

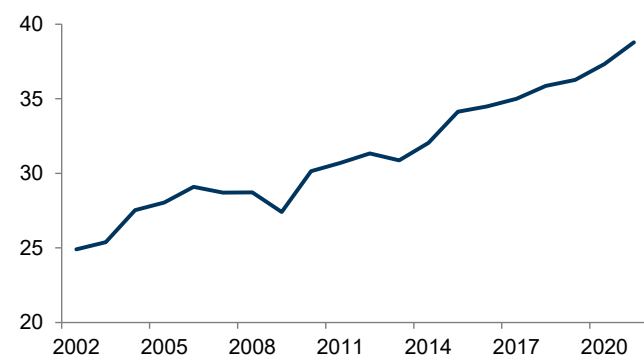
Reshoring: limited so far

Evidence of meaningful reshoring in the macro data remains limited. Construction of new domestic manufacturing facilities has recently risen, but is still slightly below pre-pandemic levels. And while construction of computer-related manufacturing facilities is running at double its pre-pandemic pace, the magnitude of investment is relatively modest—the \$20bn average annualized pace of the past six months is equivalent to what Intel [plans to spend](#) constructing two semiconductor facilities in Ohio over the next few years.

Job advertisements tell a similar story. The share of jobs in the US posted by manufacturers has stopped falling since the pandemic began, moving roughly sideways over the past two years. However, this recent stabilization could be the result of weakness in foreign demand relative to US demand rather than a decreased reliance on foreign production by domestic companies. But the clearest evidence that there hasn't been meaningful reshoring is that imports of foreign intermediate and final manufactured goods have continued to grow faster than domestic manufacturing output, suggesting that any increased reshoring has been outweighed by offshoring.

Manufacturing imports have shown no signs of slowing

Manufacturing imports as a share of domestic manufacturing output, %



Source: Department of Commerce, Goldman Sachs GIR.

Why isn't any meaningful reshoring occurring? It could be that most of the factors that made offshoring more attractive in the first place, such as lower labor costs, are still relevant today. While companies may now be well aware of the risks posed by

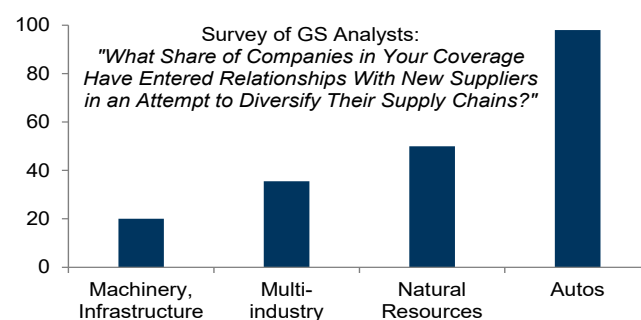
foreign shocks, it's not necessarily economical, or even feasible, to be the first company to bear higher production costs in normal times in return for possible insulation against potential future crises. It could also be too soon to see any meaningful shift; supply chains are sticky and typically evolve only gradually. The outperformance of US companies exposed to onshoring relative to companies exposed to offshoring, based on a basket developed by the GS Global Markets Division, suggests that the market expects some amount of reshoring in the coming years.

Some supply changes are underway

Two other ways of improving supply chain resilience—supplier diversification and inventory overstocking—are further along than reshoring production. Over the last five years, manufacturing imports have shifted away from China toward the rest of Asia, due not only to the US-China trade war and rising wages in China but also to potential concerns about having significant exposure to a single country. Indeed, the share of manufacturing imports for which a single country provides the majority of goods has declined on net over the same time period, although it is roughly in line with pre-pandemic levels today. Our sector analysts who cover manufacturing companies also report that substantial shares of their coverage have entered relationships with new suppliers in an attempt to diversify their supply chains.

Supplier diversification is underway in some industries

Survey of GS Analysts, % of companies within industry



Source: Goldman Sachs GIR.

Inventory overstocking is the strategy for improving supply chain resilience that is most clearly underway. Russell 1000 earnings call transcripts for 4Q21 showed that the share of companies that report plans to target a permanently higher level of inventory has doubled relative to before the pandemic, especially in durable goods sectors. Our manufacturing sector analysts corroborate this trend and report that companies in their coverage are targeting inventory-to-sales ratios roughly 5% higher on average than before the pandemic.

A second-tier inflationary impact

Like any insurance, greater supply chain resilience comes at a price, and investors may worry that companies strengthening their supply chain resilience will add to already-high inflationary pressures. However, the fact that the costliest of the three strategies—reshoring production—is also the least underway suggests that the shifts to date are acting as only a second-tier influence on the inflation picture at the moment relative to key macroeconomic forces like labor market overheating.

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Localizing supply chains: not so fast

James Covello gauges the potential for the localization of semiconductor supply chains as a case study for broader localization efforts

A perfect storm of the Covid pandemic and the war in Ukraine has given rise to a wave of discussion around deglobalization and the localization of supply chains. In few areas is this topic more prominent than in the semiconductor space, where US and European policymakers have introduced a variety of incentives and initiatives to increase domestic production. However, we don't believe that "complete" localization of semiconductor supply chains is feasible over the near term, if at all, for reasons that carry broader lessons for other important supply chains. Investors should therefore be prepared for a world in which supply chain disruptions remain a risk.

Complete localization is not a viable strategy

The "complete" localization of the semiconductor supply chain would involve not only localizing production of the chips themselves, but also ensuring that all required technological inputs in terms of equipment, materials, services, and IP are sourced locally. In our estimation, the cost of doing so in separate geographies would be punitively high—if not impossible—given the finite technological resources and competitive labor pools which countries are able to draw upon.

For example, within the Wafer Fab Equipment (WFE) ecosystem, several of the most critical tools are only manufactured in the Netherlands and Japan. Specifically, ASML (based in the Netherlands) is virtually the only producer in the world of the lithography machines required to produce advanced microchips, and Tokyo Electron (based in Japan) has significant market share in other critical steps in the WFE manufacturing process. It took over a decade for ASML to fully commercialize Extreme Ultraviolet Lithography (EUV) technology given its complexity and initial reliability issues, and other global lithography peers have yet to demonstrate EUV capabilities as a result of the technical challenge. As such, we don't believe another company or region will be capable of developing a leading-edge domestic lithography solution in the foreseeable future. And these critical tools and processes that are concentrated in certain regions are themselves dependent on an array of partners and specialty suppliers around the world given their sheer complexity.

The Wafer Fabrication Equipment market is quite concentrated

2020 market share of top two companies per WFE category

Steppers		Mask-Making Lithography		Photoresist Processing		Lithography
ASML	89%	NuFlare Technology	89%	TokyoElectron	87%	
Nikon	7%	Applied Materials	11%	SEMES	7%	
Epitaxy		Tube CVD		Nontube LPCVD		Materials Removal & Modification
Applied Materials	81%	Kokusai Electric	51%	Lam Research	40%	
ASM International	12%	Tokyo Electron	46%	Tokyo Electron	36%	
Atomic Layer Deposition		Plasma CVD		Sputtering		Process Control
ASM International	46%	Applied Materials	49%	Applied Materials	87%	
Tokyo Electron	29%	Lam Research	34%	Ulvac	5%	
Spray Processors		Dielectric Etch		Conductor Etch		
SCREEN	38%	Tokyo Electron	53%	Lam Research	54%	
Tokyo Electron	19%	Lam Research	38%	Applied Materials	30%	
CMP and Post-CMP Clean		RTP & Oxidation/Diffusion		Doping Equipment		
Applied Materials	64%	Applied Materials	41%	Applied Materials	55%	
Ebara	29%	Kokusai Electric	21%	SMIT (Sumitomo)	22%	
Wafer Inspection & Defect Review		Thin-film Metrology		Lithography Metrology		
KLA	63%	KLA	48%	KLA	37%	
Applied Materials	17%	Onto Innovation	23%	Hitachi High-Tech	24%	

Source: Gartner, Compiled by Goldman Sachs GIR.

Transitioning to a fully localized supply chain would also erode the cost and innovation benefits of a globalized system. It's important to recall that globalization was pursued to leverage regional comparative advantages, advance/accelerate the broader technological roadmap, and drive more compelling industry economics, all of which have supported the proliferation of semiconductor content. Locating the more labor-intensive, lower-value-add back-end assembly and test function providers in places with more attractive labor markets such as Malaysia, Taiwan, and mainland China is a clear example of such benefits of a globalized model. While outsourcing can pose a risk when logistical networks are strained, the globalized structure of the semiconductor industry has allowed companies to reallocate saved capital to R&D and front-end processing, thereby improving product capabilities and quality, and has supported more competitive pricing—a key consideration in the rate of semiconductor content adoption. As such, it simply isn't viable or practical to fully localize the semiconductor supply chain.

Partial localization is also not a solution

Given the considerable government funding on the verge of being passed in the US and Europe to subsidize local semiconductor investments, certain parts of the semiconductor supply chain will likely be reshored over the coming years. However, as long as certain elements of the supply chain remain globally dependent, partial localization of the semiconductor supply chain won't solve the issues that prompted this discussion in the first place. While the reshoring of front-end and back-end production may decrease the dependency on logistical networks, the semiconductor supply chain will remain reliant on global partners for critical tools and process inputs, both of which have the potential to bottleneck the reshored production supply chain in times of stress.

While policymakers' and other market participants' desire to inoculate supply chains against future pandemic and geopolitical disruptions is understandable, pursuing a reshoring strategy or full localization is therefore unlikely to produce discernible benefits relative to the current globalized system.

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Summary of our key forecasts

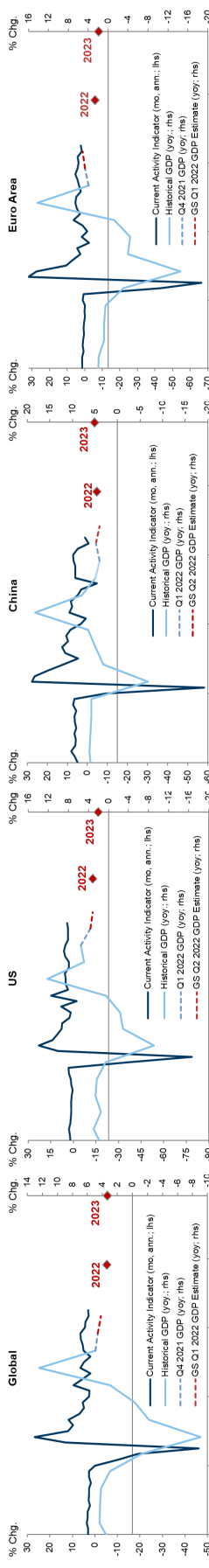
GS GIR: Macro at a glance

Watching

- **Globally**, we expect trend-like real GDP growth of 3.4% in 2022 as the sizable drag from the Russia-Ukraine conflict and tighter financial conditions roughly offset medical improvements and a consumption boost from pent-up savings. We expect the conflict to exacerbate the supply-demand imbalance at the heart of the global inflation surge in the near term, but think the combination of a moderation in demand growth, improvements in goods and labor supply in 2H22, and tighter monetary policy will be sufficient to bring inflation back near DM central banks' targets over the next two years.
- **In the US**, we expect full-year growth of 3.1% in 2022, driven in large part by a substantial fiscal drag and at least a modestly negative impulse from financial conditions. We expect core PCE inflation to fall to 4.0% by end-2022, driven entirely by a decline in the contribution from goods categories, although further supply chain disruptions could keep goods inflation somewhat higher for longer. We see the unemployment rate falling to 3.3% by end-2022.
- **We expect the Fed** to deliver 50bp rate hikes at both the May and June FOMC meetings and 25bp hikes at the four remaining meetings in the back half of 2022, though we see risks as skewed toward further additional tightening. We expect the start of balance sheet reduction will be announced in May. On the fiscal policy front, we think Congress will make only modest fiscal policy changes this year; we still see a chance that Congress could pass a scaled-down reconciliation bill focused on energy, but we think the odds lean against passage this year.
- **In the Euro area**, we expect full-year growth of 2.6% and see the war in Ukraine weighing significantly on growth via tightening financial conditions, trade spillovers, and higher energy prices, though we don't expect an outright contraction in quarterly activity in our baseline. We expect core inflation to peak at 3.3% in May and June before falling back to 2.8% by December, but the potential for disruptions in Russian gas flows to the Euro area still presents downside risk to our growth forecast and upside risk to our inflation forecast.
- **We expect the ECB** to finish QE at the end of Q2 and raise the Deposit Rate by 25bp in July, September, and December. While a sharper slowdown in growth or renewed sovereign stresses could lead to slower policy normalization, clearer signs of more sizable inflationary effects could require a faster exit.
- **In China**, we expect below-consensus real GDP growth of 4.5% in 2022 and see near-term risks as tilted to the downside in light of the continued spread of the more infectious Omicron variant given China's dynamic zero-Covid policy (ZCP), weakness in the property sector, and risks from geopolitical uncertainty and high commodity prices. We expect macro policy to continue to ease this year, especially on infrastructure and in the property sector, which we expect will significantly cushion, though not fully absorb, the impact of prolonged ZCP and the downturn in housing.
- **WATCH THE RUSSIA-UKRAINE CONFLICT AND COVID**. We expect the impact on global growth from the Russia-Ukraine conflict to be sizable, with the largest hit concentrated in the region itself, the Euro area, and other commodity importing countries, but see greater upside risk to inflation from the surge in commodity prices. On the virus front, we expect most economies (excluding China) to transition to a more endemic stage of the pandemic in the spring due to accelerated vaccinations, declines in the share of individuals without any form of immunity, and the widespread use of oral antiviral drugs.

Goldman Sachs GIR

Growth



Source: Haver Analytics and Goldman Sachs GIR. Note: GS CAI is a measure of current growth. For more information on the methodology of the CAI please see "Lessons Learned: Re-engineering Our CAIs in Light of the Pandemic Recession," Global Economics Analyst, Sep. 29, 2020.

Forecasts

Economics	2022				2023				Markets				Equities								
	GDP growth (%)		Interest rates 10Yr (%)		Last		E2023		E2023		E2023		E2023		Returns (%)		E2022 PIE				
Global	3.4	3.5	3.3	3.4	2.82	2.70	2.80	EUR/\$	1.05	1.10	1.20	Price	4,700	--	--	S&P500	12.0	-12.0	-18.4x		
US	3.1	3.2	2.0	2.1	0.80	0.75	1.15	GBP/\$	1.25	1.33	1.41	EPS	\$221	\$229	\$233	MXAPJ	24.0	-14.0	12.4x		
China	4.5	4.9	5.0	5.2	0.25	0.25	0.35	\$/JPY	128	123	118	Growth	5%	9%	6%	Topix	16.0	-7.0	13.1x		
Euro area	2.6	2.8	1.9	2.4	1.81	1.95	2.05	\$/CNY	6.5	6.35	6.2	Consumer	--	--	--	STOXX600	10.0	-9.0	13.4x		
Policy rates (%)	2022		2023		Last		3m		3m		4Q22		Consumer		2023		Wage Tracker 2022 (%)				
	GS	Mkt.	GS	Mkt.	Commodities	Credit (bp)	Unemp. Rate (%)	CPI Rate (%)	Unemp. Rate (%)	CPI Rate (%)	Unemp. Rate (%)	CPI Rate (%)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
US	2.38	2.56	3.13	2.90	Crude Oil, Brent (\$/bbl)	105	125	115	USD	IG	133	133	140	US	3.2	3.5	3.2	5.7	--	--	--
Euro area	0.25	0.46	1.25	1.16	Nat Gas (\$/mmBtu)	7.27	6.80	3.80	HY	375	390	427	Euro area	6.9	--	--	--	--	--	--	--
China	2.10	2.33	2.10	2.54	Copper (\$/mt)	9,867	11,500	13,000	EUR	IG	168	165	178	China	--	--	--	--	--	--	--
Japan	-0.10	0.04	-0.10	0.11	Gold (\$/troy oz)	1,866	2,300	2,500	HY	455	453	465	Japan	--	--	--	--	--	--	--	--

Source: Bloomberg, Goldman Sachs GIR. For important disclosures, see the Disclosure Appendix or go to www.gs.com/research/teqge.html.

Market pricing as of April 27, 2022.

Glossary of GS proprietary indices

Current Activity Indicator (CAI)

GS CAIs measure the growth signal in a broad range of weekly and monthly indicators, offering an alternative to Gross Domestic Product (GDP). GDP is an imperfect guide to current activity: In most countries, it is only available quarterly and is released with a substantial delay, and its initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs aim to address GDP's shortcomings and provide a timelier read on the pace of growth.

For more, see our CAI page and Global Economics Analyst: Trackin' All Over the World – Our New Global CAI, 25 February 2017.

Dynamic Equilibrium Exchange Rates (DEER)

The GSDEER framework establishes an equilibrium (or "fair") value of the real exchange rate based on relative productivity and terms-of-trade differentials.

For more, see our GSDEER page, Global Economics Paper No. 227: Finding Fair Value in EM FX, 26 January 2016, and Global Markets Analyst: A Look at Valuation Across G10 FX, 29 June 2017.

Financial Conditions Index (FCI)

GS FCIs gauge the "looseness" or "tightness" of financial conditions across the world's major economies, incorporating variables that directly affect spending on domestically produced goods and services. FCIs can provide valuable information about the economic growth outlook and the direct and indirect effects of monetary policy on real economic activity.

FCIs for the G10 economies are calculated as a weighted average of a policy rate, a long-term risk-free bond yield, a corporate credit spread, an equity price variable, and a trade-weighted exchange rate; the Euro area FCI also includes a sovereign credit spread. The weights mirror the effects of the financial variables on real GDP growth in our models over a one-year horizon. FCIs for emerging markets are calculated as a weighted average of a short-term interest rate, a long-term swap rate, a CDS spread, an equity price variable, a trade-weighted exchange rate, and—in economies with large foreign-currency-denominated debt stocks—a debt-weighted exchange rate index.

For more, see our FCI page, Global Economics Analyst: Our New G10 Financial Conditions Indices, 20 April 2017, and Global Economics Analyst: Tracking EM Financial Conditions – Our New FCIs, 6 October 2017.

Goldman Sachs Analyst Index (GSAI)

The US GSAI is based on a monthly survey of GS equity analysts to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. Based on analysts' responses, we create a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors.

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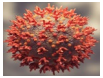
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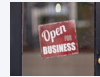
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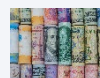
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