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Cast adrift

The year 2025 has witnessed an intensification of geopolitical fragmentation, propelled by decisive policy shifts in the United States under the Trump administration, alongside enduring conflicts and deep-seated structural rivalries. These forces have collectively accelerated a process of deglobalisation, manifesting in disrupted supply chains, escalating costs, and heightened financial volatility across the international economy. The United States, long the architect of the post-war global order, has markedly retreated from its erstwhile commitment to globalism. This withdrawal has contributed to a growing polarisation within the multilateral system that once afforded a degree of stability. Norms, authority, and legitimacy are increasingly contested, exacerbated by the absence of unified global leadership and the erosion of collective purpose. In consequence, international institutions have struggled to mount effective responses to transnational challenges that demand coordinated action.

Amid this flux, a more pluralistic global landscape is emerging, characterised by the coexistence of established and novel institutions. Regional powers and middle-income states aspire to forge a more resilient and cooperative order through inclusive, rules-based frameworks that might reinvigorate multilateralism while enhancing national resilience.

Central to this reordering has been China's ascent as a proactive actor and purveyor of global public goods, capitalising in no small measure on American retrenchment. Beijing has advanced alternative architectures, extending its influence both within extant institutions and through innovative ventures such as the Belt and Road Initiative, the Asian Infrastructure Investment Bank, the Global Development Initiative, and the Global Security Initiative. In so doing, China positions itself as a champion in addressing inequality and poverty, eschewing the Western insistence on democratic norms and human rights conditionalities. For many nations in the Global South, China's pragmatic model offers compelling opportunities for greater agency within the international system. States across Asia, Africa, and the Middle East, seeking infrastructure and economic advancement without the stringent preconditions often attached to Western aid, have found in Beijing an attractive partner.

The expanded BRICS grouping—now encompassing original members alongside Egypt, Ethiopia, Iran, the United Arab Emirates, and Indonesia—encapsulates many of these aspirations. Emphasising sovereignty, non-interference, and a development paradigm unencumbered by political strings, BRICS has, with China's substantial backing, emerged as a vital conduit for South-South cooperation. Yet the multipolarity now taking shape does not herald the wholesale supplanting of one hegemonic order by another; rather, it entails the parallel operation of overlapping frameworks. Nations of the Global South, while vocal in their critique of Western inconsistencies, remain cautious about excessive dependence on any single power. This strategic hedging may, paradoxically, engender a more equilibrated and responsive governance of global affairs.

Nevertheless, beneath these shifts lies an intensifying competition among the world's three pre-eminent economic blocs: the United States, China, and the European Union. Europe, in particular, possesses attributes that have historically defined great powers—a \$20 trillion economy, a population exceeding half a billion, premier universities, exceptional engineering prowess, world-leading infrastructure, vast capital reserves, and a currency that rivals the dollar in international transactions. By conventional measures, the European Union ought to rank as a geopolitical superpower. In nominal terms, the United States remains somewhat larger, while China is broadly comparable.

At the dawn of the twenty-first century, the American and European economies were of roughly equivalent scale, with China's a mere fraction thereof. The intervening quarter-century has dramatically altered this balance. Recent assessments, including those in the United States' 2025 National Security Strategy, warn that Europe's relative economic stagnation is overshadowed by graver concerns—chief among them the prospect of profound cultural and civilisational transformation in the decades ahead. Whether the European Union can arrest this drift and assert its latent potential remains one of the most pressing questions for the emerging global order. ■

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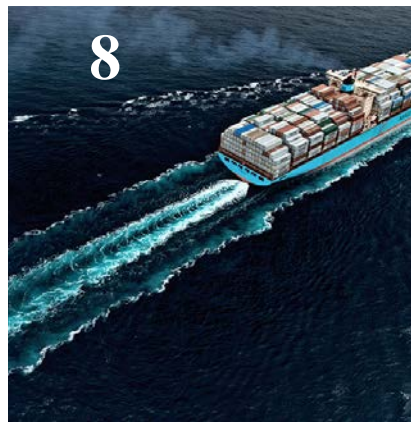
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From resilience to strength

Christine Lagarde is the President of the European Central Bank

would like to start with a quote:

“The world around us does not stand still.

In recent years, the global environment has been transformed in ways that none of us could have imagined. We have seen the post-war global order fracturing, the rise of new – and some old – powers, rapid changes in technology, and an uncertain outlook for global trade and finance.

Uncertainty abounds and conventional wisdom is being challenged, in politics, in diplomacy and in economics. And, unavoidably, this calls on Europe to consider its place in the world and reset its ambitions.”

This may sound like the kind of passage you have heard in many speeches this year. But, in fact, it is from the first speech I gave as ECB President – in November 2019¹.

In that speech, I urged Europe to recognise that its old growth model – built on export-led growth – was coming under strain. And I called for a shift: to focus instead on developing our domestic economy as a source of resilience in an uncertain world. My point was not to argue for protectionism or inward-looking policies.

It was about realism: recognising the world as it is. And it was about acknowledging that the solution was already in front of us: the untapped potential of our own internal market. Six years on, that diagnosis has only become clearer and stronger.

Europe has become more vulnerable, also due to our dependency on third countries for our security and the supply of critical raw materials. Global shocks have intensified, with rising US tariffs, Russia’s invasion of Ukraine and stiffening competition from China.

At the same time, our internal market has stood still, especially in the areas that will shape future growth, like digital technology and artificial intelligence, as well as the areas that will finance it, such as capital markets. And yet – as Galileo famously said – “it moves.” Europe continues to show resilience, revealing sources of strength that could grow if only we allow them to.

So the question I would like to address today is: how do we move from being resilient but vulnerable to being genuinely strong? And what will it take to do so?

Vulnerabilities in Europe’s growth model

Europe’s vulnerabilities stem from having a growth model geared towards a world that is gradually disappearing. We embraced globalisation more than any other advanced economy. In the two decades before the pandemic, external trade as a share of GDP almost doubled in the EU, while in the United States it barely moved².

This deep integration brought significant benefits: the number of jobs supported by EU exports³ rose by 75%, reaching almost 40 million⁴ – and for many years, this was a source of resilience. But today, that same openness has become a vulnerability. Exports have become a far less reliable engine of growth, reflecting the changing global landscape.

In mid-2023, for instance, ECB staff expected exports to grow by around 8% by mid-2025. In reality, they have not grown at all. And looking ahead, exports are projected to subtract from growth over the next two years⁵. This has been felt most acutely in countries with large manufacturing sectors, which have faced a prolonged slump in industrial production.

As a result, growth across the euro area has become more uneven. At the same time, this export-led growth model has resulted in a persistent current account surplus, increasing our reliance on other countries to generate our wealth – especially the United States.

Euro area residents now hold nearly 10% of their total equity investments in US stocks, totalling €6.5 trillion – about two times the amount they held at the end of 2015⁶. This has been a rational response: US markets have delivered returns roughly five times higher than Europe’s since 2000. But it has created a vicious circle.

As US markets channel European savings into high-productivity sectors, the performance gap between our economies widens – prompting yet more European savings to flow across the Atlantic. The result is stagnating productivity at home and growing dependence on others.

Finally, we now face a new form of vulnerability shared by all major economies: the weaponisation of dependencies on key raw materials and technologies. ECB analysis shows that more than 80% of large euro area firms are no more than three intermediaries away from a Chinese rare earth supplier⁷.

Recent supply shocks – for example, the shortage of automotive chips – have shown how a single chokepoint can stall entire sectors. These vulnerabilities do not trigger dramatic crises. Instead, they erode growth quietly, as each new shock nudges us onto a slightly lower trajectory. Over time, the cumulative effect of this ‘lost growth’ and lost productivity becomes material.

In mid-2023, ECB staff projected that the economy would expand by 3.6% cumulatively by mid-2025. In reality, it has grown by only 2.3% – a shortfall equivalent to an entire year of growth in normal times, and productivity has turned out worse.

Sources of resilience in the domestic economy

Yet even as this changing world has exposed our vulnerabilities, 2025 has revealed Europe’s latent strengths. Our experience this year has shown that a resilient domestic economy can shield Europe against global turbulence.

Three sources of domestic strength have helped cushion the impact of global shocks – our *people*, our *potential* and our *policy*.

First, our people. We have benefited from an unusually strong labour market – one that has remained remarkably resilient even as growth has slowed. Typically, employment tends to grow at roughly half the pace of real GDP. Yet since the end of the pandemic, that relationship has been almost one-to-one in Europe⁸.

This strength has created a virtuous circle: rising employment has supported consumption, which in turn has sustained services output and created still more jobs – particularly in labour-intensive sectors⁹.

Second, our potential. Despite the notion that Europe is lagging behind in AI, European firms are moving quickly through the digital transition – and that is making investment more resilient to global uncertainty.

While tangible investment has fallen in the past two years as manufacturing has weakened, intangible investment has risen sharply¹⁰, keeping overall business investment broadly stable. Firms continue to invest in AI and digital infrastructure because, for any company that wants to stay competitive, these are no longer optional.

Third, our policy. Fiscal policy, in particular, has acted countercyclically, buffering the economy rather than amplifying downturns, as we saw after the financial crisis.

The fiscal packages now being implemented for defence and infrastructure – especially here in Germany – are coming at

“Europe’s vulnerabilities stem from having a growth model geared towards a world that is gradually disappearing”

the right time for Europe and will have a measurable effect on growth.

ECB staff estimate that higher government investment between now and 2027 will offset around one-third of the trade shock¹¹. The ECB is also playing its part by delivering price stability. We have cut interest rates by 200 basis points from their peak, and this is increasingly feeding through into easier financing conditions, which is helpful to support demand. We will continue to adjust our policy as needed to ensure that inflation remains at our target.

Together, these three sources of resilience will help anchor growth at home. Domestic demand is set to become the main engine of expansion in the years ahead¹². And this shift should also help narrow Europe’s current account surplus, which has already halved since its peak in 2018¹³.

The potential of the domestic market

This experience underlines the power of a resilient domestic economy, strengthened by open strategic autonomy. But it also exposes how much potential Europe continues to leave untapped.

Today, despite more than 30 years of the Single Market, trade barriers within the EU remain too high in key areas. ECB analysis finds that internal barriers in services and goods markets are equivalent to tariffs of around 100% and 65%, respectively¹⁴.

Of course, we should not expect these barriers to disappear altogether: not all products are equally tradeable, and national preferences will always play a role. Policy can reduce certain frictions, but it cannot eliminate them entirely¹⁵.

But we should expect two things. First, that barriers are low enough for the sectors that will shape future growth to operate in a truly European market. This is clearly not the case for digital services, which will drive future innovation, and capital markets, which must finance it.

Second, we should expect that being inside the Single Market offers a clear advantage over being outside it – in other words, that internal barriers are lower than external ones.

But this is also not currently the case for services: over the past 20 years, barriers to crossborder trade within Europe have been declining no faster than those faced by international firms seeking to operate here.

This helps explain why, even though services now account for three-quarters of Europe’s economy, trade in services within



the EU makes up only about one-sixth of GDP – roughly the same as our trade in services with the rest of the world.

This is a vast waste of potential – especially at a time when we must rely more on ourselves than on others. And the key point is that *achieving these gains would not require radical change*.

Our analysis shows that if all EU countries were merely to lower their barriers to the same level as that of the Netherlands, internal barriers could fall by about 8 percentage points for goods and 9 percentage points for services¹⁶.

If we only did a quarter of that, it would be sufficient to boost internal trade enough to fully offset the impact of US tariffs on growth¹⁷. So the question we must now ask is: why are we not taking these steps?

Towards a new governance

The answer comes down to governance. Fully harmonising all national laws and regulations is not realistic, nor is it always even necessary. But we lack effective tools to overcome barriers in the areas where progress matters most.

I believe that three steps can help us move forward. The first is to revive the principle of mutual recognition – the very engine of liberalisation that powered the Single Market in the 1980s.

Mutual recognition means that if a good or service is lawfully provided in one member state, it should be allowed to circulate freely across the EU without the need to comply with every other country's rules. For example, in the EU there is a system of automatic recognition of professional qualifications for a number of sectoral professions.

Such mutual recognition is also visible in financial services. Today, banks benefit from a passporting system: a single licence granted by the ECB enables them to provide services across Europe. But they still face different rules in foundational elements of the framework they operate in. Completing the banking union and deepening our capital markets would therefore be transformative, accelerating our path towards a truly integrated home market.

The same logic applies to the digital economy. Just as passporting embodies mutual recognition in banking, the mutual recognition of digital identities, trust services and other credentials would dramatically improve interoperability and eliminate hidden costs that are slowing the growth of Europe's digital markets.

The second step is to streamline decision-making – by extending qualified majority voting to the areas on which Europe's future growth depends. While qualified majority voting has been instrumental in driving integration, it has now largely reached its limits. In several critical fields, the continued requirement for unanimity in the European Council still prevents meaningful progress towards completing the Single Market.

Taxation is the clearest example. Reforms such as harmonising VAT rules or establishing a common consolidated corporate tax base remain stuck because of national vetoes, leaving firms to navigate a maze of fragmented tax regimes.

This fragmentation is especially damaging in a world of digital business models and intangible assets, where tax policy cannot be managed within national borders alone. For example, a digital platform providing cloud or software services across Europe must currently comply with 27 different VAT systems, each with its own definition of where value is created for tax purposes.

This complexity tilts the playing field towards large US firms that can absorb the associated costs – exactly the opposite of what Europe needs if it wants to nurture its own digital champions.

Moving to qualified majority voting, using the passerelle clause where necessary – which allows the European Council to shift specific areas from unanimity to majority voting without changing the Treaties – could help break this deadlock.

The third step is to take a more radical approach to simplification – and I do not mean simply trimming regulations through the Omnibus packages. The fastest way to achieve genuine simplification is not by repealing existing rules, but by creating new '28th regimes' – optional EU legal frameworks that sit alongside national law rather than replacing it.

These frameworks would allow firms to opt into a single European rulebook in specific areas, without requiring full harmonisation across all member states. A prime candidate is company law¹⁸, as proposed in the Letta and Draghi reports.

A European company law regime would provide firms – in particular start-ups and scale-ups – with a simpler path to operate across borders, cutting through the complexity of 27 different national systems.

This approach has worked before. The EU Trademark (1993) and Community Design (2001) were both 28th regimes, offering optional EU-wide intellectual property titles alongside national rights. And both have been widely adopted, especially by firms active across multiple markets.

Their success shows how an optional EU framework can reduce fragmentation and even generate healthy ‘systems competition’: when firms choose the EU rules, national systems are put under pressure to adapt.

The European Commission is planning to present a 28th regime proposal as part of its renewed and welcome ambition to set clear deadlines for removing barriers identified in the ‘Single Market Roadmap to 2028’. But progress will depend on political will.

The first step may be modest – such as creating a digital business identity, giving firms a single trusted profile to register and operate online across the EU – but it could set a powerful precedent for broader reforms to follow.

If we get this right, firms that could grow based on genuinely European regimes would also be best placed to access pan-European financing, helping to channel our vast savings into productive investment.

Completing the Single Market – in the real economy and in finance – is therefore a mutually reinforcing project, strengthening Europe’s competitiveness and its capacity to invest in the future.

Conclusion

The world will not slow down for Europe – but we can decide how we move forward. If we make our Single Market truly single, Europe’s growth will no longer depend on the decisions of others, but on our own choices.

This was my message six years ago. Today, that message has only grown more urgent.

Another six years of inaction – and lost growth – would not just be disappointing. It would be irresponsible. But the experience of this year should also give us confidence. It has shown that our economy has real sources of strength – and that, if we act, those strengths can be multiplied.

The steps we need to take are not beyond our reach. They require no new treaties, no radical rewiring of our Union – only the political will to use the tools we already have. If we can summon that will, Europe can move from being merely resilient to being genuinely strong. ■

Endnotes

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2. External trade as a share of GDP rose from 26% to 43% in the EU, whereas it increased from 23% to just 26% in the United States.
3. To non-EU countries.
4. Rueda-Cantucho, JM, Piñero, P and Kutlina-Dimitrova, Z (2021), *EU Exports to the World: Effects on Employment*, Publications Office of the European Union, Luxembourg.
5. See footnote 12 for details.
6. ECB (2025), “Euro area quarterly balance of payments and international investment position: fourth quarter of 2024”, statistical release, 4 April.
7. Banin, M, D’Agostino, M, Gunnella, V and Lebastard, L (2025), “How vulnerable is the euro area to restrictions on Chinese rare earth exports?”, *Economic Bulletin*, Issue 6, ECB.
8. Between the end of 2021 and mid-2025, cumulative employment rose by 4.1% – an increase of 6.3 million of people in employment – while real GDP increased by 4.3%. See Lagarde, C (2025), “Beyond hysteresis: resilience in Europe’s labour market”, opening panel remarks at the annual Economic Policy Symposium “The policy implications of labour market transition” organised by the Federal Reserve Bank of Kansas City in Jackson Hole, 23 August.
9. Anderton, R, Aranki, T, Bonthuis, B and Jarvis, V (2014), “Disaggregating Okun’s law: decomposing the impact of the expenditure components of GDP on euro area unemployment”, Working Paper Series, No 1747, ECB, December.
10. Excluding volatile Irish assets.
11. Lagarde, C (2025), “Trade wars and central banks: lessons from 2025”, keynote speech at the Bank of Finland’s 4th International Monetary Policy Conference, Helsinki, 30 September.
12. Cumulatively, ECB staff expect domestic demand to add 3.1 percentage points to growth between the second quarter of 2025 and the fourth quarter of 2027, while exports are projected to subtract 0.6 percentage points. See ECB (2025), *ECB staff macroeconomic projections for the euro area*, September.
13. Lagarde, C (2025), “Opening remarks”, remarks at the panel on the “Global Economic Outlook” at the 40th Annual G30 International Banking Seminar, Washington DC, 18 October.
14. Bernasconi, R, Cordemans, N, Gunnella, V, Pongetti, G and Quaglietti, L (2025), “What is the untapped potential of the EU Single Market?”, *Economic Bulletin*, Issue 8, ECB (forthcoming). These “tariff equivalents” should be understood as measures of estimated trade frictions rather than actual policy-imposed tariffs. They reflect a combination of policy-related barriers and structural or cultural factors – such as consumer preferences and taste differences – that cannot be directly addressed through policy alone.
15. Head, K and Mayer, T (2025), “No, the EU does not impose a 45% tariff on itself”, *VoxEU* column, Centre for Economic Policy Research, 13 November.
16. Bernasconi, R et al (2025), *op. cit.*
17. According to ECB simulations, this reduction in barriers would raise trade within the EU by around 3%, offsetting the 0.7 percentage point reduction in GDP growth between 2025 and 2027 caused by US tariffs and the related uncertainty.
18. So far, most legal reforms aimed at improving the business environment have relied on soft coordination, voluntary standards or limited harmonisation directives. This approach reflects national sensitivities in certain areas (eg. company law, tax law and labour law) that remain primarily a member state competence. However, previous attempts at soft convergence have only led to modest results.

This article is based on a speech delivered at the 35th Frankfurt European Banking Congress, Frankfurt am Main, 21 November 2025.



The next steps for European economic security



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Executive summary

The European Union's economic security strategy was initially developed at a time of close transatlantic cooperation and focused largely on risks linked to Chinese dominance of certain parts of global manufacturing. However, given the diminished commitment of the United States to its traditional alliances and to multilateral rules, EU economic security planning now also needs to take into account the risk of US coercive action.

The EU must combine a medium-term strategy to reduce dependencies on both China and the US in critical areas with the capacity to react in the short term to threats of coercion. This requires supply chain chokepoints to be identified. There should also be a political discussion with EU countries on the circumstances in which the EU Anti-Coercion Instrument should be deployed, and the appropriate measures to respond to coercion.

The EU's various tools for responding to urgent threats to its economic security need to be adapted to the new geopolitical context. The EU should prioritise support for research and development in relation to critical technologies and should ensure a more targeted and effective approach to state aid. It should avoid 'buy Europe' policies that contradict its international commitments and limit the scope for partnering with third countries.

On traditional economic statecraft tools, screening of foreign investment needs to be transformed to responding more effectively to economic security threats, while export controls need to be better coordinated. Given the need to de-risk relationships with both the US and China, strengthening economic partnerships has become ever more important.

Moreover, more robust governance structures to manage the use of economic security tools and partnerships with like-minded countries internationally need to be developed.



1 Introduction

In 2023, the European Commission published a European economic security strategy (European Commission, 2023a)¹. It was conceived at a time when the European Union could rely on close cooperation with the United States and was part of a coordinated transatlantic response to the risk of the weaponisation of economic dependence by China. China's dominant position in several manufacturing sectors, particularly in the processing of critical raw materials, was a particular focus.

EU-US alignment on economic security justified using the G7 as institutional platform to coordinate responses to economic coercion and, potentially, to develop economic security standards. On the EU side, the 2023 strategy is now being developed into an economic security 'doctrine' that focuses on how different policy tools can contribute towards mitigating economic security risks.

The move to a new economic security doctrine, in addition to EU initiatives on critical raw materials and on industrial policies, deserve a broader discussion on how to mitigate economic security risks in the new geopolitical environment.

The world has changed fundamentally (Sapir *et al* 2025). The administration of US President Donald Trump has shown little interest in coordinating action with allies when it comes to 'de-risking' relations with China. The US has even threatened the EU and its members with coercive action. This threat remains despite the EU-US trade deal inked in July 2025 envisaging cooperation on economic security².

All of this is happening in the context of war on the European continent and the major threat from Russia. US weaponisation of economic interdependence, which was thus far mostly wielded in favour of common transatlantic objectives (Farrell and Newman, 2019), might now become detrimental to European interests.

Meanwhile, China has shown its readiness to weaponise economic dependencies through its dominance of the processing of the critical raw materials relied on by EU manufacturing.

The 2023 EU economic security strategy triggered risk assessments in four areas³:

1. Supply chain vulnerabilities;
2. Critical infrastructure;
3. Technology security;
4. Economic coercion.

The strategy did not clearly define economic security but rather used economic security as an umbrella term for a collection of instruments (Chimits *et al* 2024). Such a lack of conceptual clarity could lead to confirmation bias or confusion about the instruments needed to respond to different types of economic security threat (Pisani-Ferry *et al* 2024).

"The move to a new EU economic security doctrine deserves a broader discussion on how to mitigate risks in the new geopolitical environment"

Some ambiguity can be helpful in providing leeway when deciding on defensive action, but vague risk assessments can be problematic when trying to devise strategies to minimise risks. This implies that while it can make strategic sense to not be too tied down to reactive policies, proactive policies should be based on thorough risk assessments and definitions.

This is particularly the case for measures aimed at reducing supply-chain vulnerability, for which a balance is needed between industrial policies and foreign economic policies. Given the changing external threat environment, the EU economic security doctrine needs to be continuously reviewed and adapted. Since the economic security strategy was published, various steps have been taken as part of its implementation (Table 1).

The challenge now is for economic security is to move beyond a process of risk assessments to risk-mitigation strategies based on the coherent deployment of economic security tools. The foundation for economic security policies has to be a clearly articulated view about the geopolitical positioning of the EU and the relationship between economic security and the EU's overall economic strategy.

In this *Policy Brief* we assess the main threats to EU economic security (section 2) and then analyse and make recommendations on the roles of industrial policies, foreign economic policies and economic statecraft tools in mitigating the economic security risks facing the EU, and for the governance of economic security (section 3).

This is not to suggest that these instruments are the only tools for the mitigation of economic security risks. Horizontal policies that reinforce growth in the European economy, and notably underpin the single market and an open trade policy, are also critical enablers to promote economic security.

2 The main threats to EU economic security

2.1 Import dependency

Overreliance on crucial imports is a clear risk to the EU economy. The ability of countries to restrict access to these imports strengthens their coercive power. Moves by both the US and China to restrict certain exports of chips⁵ and raw materials⁶ show this risk must be taken seriously.

A particular challenge is that a de-risking strategy for sectors such as the processing of critical raw materials requires close coordination among like-minded countries and substantial investment before dependency can be reduced significantly. An effective strategy to develop alternative sources of supply

Table 1. EU policy developments on economic security since 2023

Date	Document	Purpose
June 2023	Communication on an Economic Security Strategy (European Commission, 2023a).	Sets out the Commission's views on the economic security threats to be guarded against and the relevant EU policies for this purpose.
Oct 2023	Recommendation on further risk assessments on critical technologies (European Commission, 2023b).	10 critical technology areas identified for joint risk assessments by member states and the Commission; four to be done urgently.
Dec 2023	Adoption of the Anti-Coercion Instrument (ACI, Regulation (EU) 2023/2675).	Regulation allowing for a calibrated EU response in the event of economic coercion by a third country.
Jan 2024	Commission publishes five initiatives on technology security and research.	Proposal for a revision of the FDI screening regulation (European Commission 2024a); white paper on export controls (European Commission 2024b); white paper on outbound investment; white paper on R&D for dual use technologies (European Commission 2024c); and a proposal for a Council Recommendation on research security (European Commission 2024d).
Apr 2024	Letta report on the single market (Letta, 2024).	Suggests various improvements for economic security, including establishing an Economic Security Council, broadening the scope of de-risking and defining a framework for cooperation with 'rival partners'.
May 2024	Adoption of the Critical Raw Materials Act (CRMA, Regulation (EU) 2024/1252).	Seeks to reduce dependency on single sources (in particular China) for critical raw materials. It includes streamlined permitting and measures to improve recycling and circularity.
July 2024	Political Guidelines for 2024-2029 European Commission (von der Leyen 2024).	Calls for economic security to form one of the three pillars of a new 'foreign economic policy'.
Sep 2024	Draghi report (Draghi 2024).	Section 4 focusses on reducing vulnerabilities to external pressure and dependencies.
	Mission Letter to Commissioner-designate for Trade and Economic Security Maroš Šefčovič ⁴ .	Places economic security under the renamed Directorate General for Trade and Economic Security; calls for the development of a "new economic security doctrine, which outlines the strategic use of our economic security tools within the EU"; calls for the development of economic security standards with international partners for key supply chains.
Oct 2024	Adoption of the Internal Market Emergency and Resilience Act (IMERA; Regulation (EU) 2024/2747).	Aims to reduce impact of crises on the functioning of the single market and to ensure the availability of critical supplies.
Jan 2025	Recommendation on outbound investment screening (Recommendation (EU) 2025/63).	Calls on EU governments to review their companies' outbound investments in non-EU companies in three crucial technology areas, which will inform whether further action at EU level is needed.

Source: Bruegel.

for critical raw materials, for example, would have to be structural in scope and implemented over the medium to long term⁷.

The 2023 European economic security strategy listed various ways to identify dependencies, such as stress tests, and the Commission has developed some metrics already. The Commission's Joint Research Centre has published a set of economic indicators to capture the EU's trade dependencies on third countries, broken down by exporting and importing countries and sector (Piñero Mira *et al* 2024).

However, both data and analytical challenges make identifying genuine import dependencies very hard (Mejean and Rousseaux 2024). It is difficult to measure substitutability,

both intertemporally and cross-product. In other words, it is hard to know which products are genuinely critical to EU production or consumption.

Because of re-exporting and complex supply chains, it is also difficult to capture the EU's ability to produce the products in question in the event of a shock, and to identify ultimate import and export dependencies⁸.

Broader import diversification is welcome, especially given the documented churn in the products for which the EU has dependencies (Vicard and Wibaux 2023). Detailed risk assessments and attempts to reduce dependencies should be limited to areas for which weaponisation would lead to greatest macroeconomic or social impacts.

further down the supply chain (China threatened to restrict imports of EU cars that contained parts from Lithuania in response to the opening of a Taiwanese representative office in Vilnius; McCaffrey and Poitiers 2024).

Such instances have helped firms understand that they may become casualties in this new geopolitical landscape, and firms seem to be diversifying supply chains and, in some cases, building secondary supply chains¹².

The conclusion of new free trade agreements would make a significant contribution to diversifying export markets and could go together with tools to facilitate trade and the integration of value chains, such as negotiation with FTA partners of a common protocol on rules of origin or a supply chain resilience agreement.

2.3 Foundational technologies

The area of foundational and emergent technologies presents the strongest case for active industrial policies in the name of economic security. These are technologies with the potential to significantly disrupt and reshape the global economy.

A strong presence in the development of such technologies will help ensure the EU's future strategic indispensability. In other words, the EU would be better equipped to hit back at the coercive measures of others and by doing so would change the decision-making calculus of would-be adversaries.

The semiconductor sector is a prime example. The EU does not control the fabrication of semiconductors, but, in ASML in the Netherlands, has a monopoly on the machines used for their production (Poitiers and Weil 2022b). This means the EU cannot be easily excluded from semiconductor value chains. On the other hand, allowing other economies to develop monopoly power in critical technologies would tie the EU's hands.

The EU needs to protect its lead in the areas in which it maintains a significant edge, such as the ultraviolet lithography machines produced by ASML. However, given the scale and speed of developments in these sectors, it is equally important to play a pioneering role in the next generation of foundational technologies.

The EU previously held a dominant position in research and development in clean tech, before falling behind China (García-Herrero *et al* 2024). Eulaerts *et al* (2025) have identified emerging critical technologies using a range of techniques and these could be a solid basis for guiding future R&D support.

2.4 Financial and digital dependencies

Given US dominance in finance, there may be a risk of US financial coercion, not only trade coercion¹³. This was a feature of the first Trump administration when, for instance, pressure was put on HSBC over its interactions with Huawei, and on Swift to disconnect Iranian banks. Given the US desire to maintain the dominant role of the dollar and trust in its financial system, it is unclear exactly how far coercion in this sector could go.

However, the record of the first Trump administration and the actions of the second to date imply that this risk should be taken seriously. This is especially important given that finance did not feature in the European economic security strategy and, therefore, preparations in this area may justify a specific new risk assessment¹⁴.

The EU also relies on US digital services in many areas. The US tech giants often enjoy monopolistic power, and there are often few alternatives, apart from Chinese providers. This dependency is a potential EU weakness, especially when it comes to critical digital infrastructure such as cloud services and satellites¹⁵.

European attempts to break these US monopolies and compete in digital services continue to be significant sources of friction in transatlantic relations, resulting in US threats of trade restrictions as a response to the enforcement of EU digital regulations¹⁶.

The EU should, therefore, prioritise reducing its reliance on US digital infrastructure and finding the most effective responses to US threats. As with critical raw materials dependencies, reducing dependencies linked to US digital or financial dominance requires a medium- to long-term strategy and a combination of different EU tools.

3 The development of risk mitigation strategies

3.1 Industrial policies

Economic security is often presented as a justification for more proactive industrial policies, boosting domestic industry, particularly through state aid. Important Projects of Common European Interest (IPCEI) are the main EU-level tool for this. These are large-scale industrial projects using novel technologies and serving a strategic European interest, supported by public subsidies.

The European Chips Act (Regulation (EU) 2023/1781) follows this mould, as a more lenient sector-specific version of an IPCEI. Its state-aid pillar uses the same R&D justification for state aid as IPCEIs and has the same conditionality, with the exception that it not only allows the promotion of completely new technologies, but also supports the introduction of technologies to the EU in the case of chip foundries (Poitiers and Weil 2022b).

For this type of industrial policy, there is a lack of clarity on the criteria for identification of industrial sectors for which an expansion of domestic production is both economically viable and necessary from an economic security perspective.

Whereas much of the focus has been on sectors for which there is an import dependency, not all import dependencies represent an economic security threat; in several sectors, diversification of import suppliers may be a better economic strategy. A better approach may be to subsidise R&D and its deployment in sectors that are at the technological frontier.

Moreover, IPCEIs have not been an unqualified success. Selection of individual large projects for significant subsidies has seen a number of notable failures. The Chips Act's flagship

project was to be a semiconductor factory in Magdeburg Germany, slated to receive €10 billion in subsidies.

Meant to promote European high-end manufacturing, the project was halted in 2024¹⁷. Northvolt, a Swedish battery company that received significant ICPEI subsidies to build a battery supply chain independent of China went bankrupt in early 2025 (Tagliapietra and Trasi 2024).

ICPEIs are not the only policy tool intended to promote economic security by promoting investment in European strategic industries. The Critical Raw Materials Act (see Table 1) and the Net Zero Industry Act (NZIA, Regulation (EU) 2024/1735) introduce standards and procurement rules that seek to promote the diversification of European supply in sectors in which China has a market-dominating position (Le Mouel and Poitiers 2023; Tagliapietra *et al* 2023).

The main economic security tool under the NZIA has been the introduction of resilience criteria, sometimes combined with criteria related to sustainability or protection against cybersecurity risks. Resilience criteria require public buyers to diversify supply sources when procuring strategic technologies (ie. when the EU is dependent on a single supplier for more than 50 percent of its imports).

This approach needs to develop further. While the need to support certain industries through industrial policies (including subsidies) is clear, IPCEIs are not up to the task. The process of agreeing an ICPEI requires significant haggling between national government funders and large companies.

This favours established national industries over areas of import dependency, in which there is a lack of well-connected European industries. Furthermore, its use of an R&D state-aid exemption to support strategic industries makes the process onerous, while political pressure to approve projects under this narrow rule undermines the stringency of state-aid control (Poitiers and Weil 2022a).

Similarly, a better understanding of the problems that these policies try to solve is needed in order to design more targeted policies. The Chips Act's emphasis is on foundries producing high-end chips but this does not address the causes of shortages during the pandemic and the EU's strategic vulnerabilities relative to China.

The European Commission has also published work mapping the EU's import vulnerabilities to its comparative production advantages, a valuable exercise that should help to inform when and how to implement industrial policies (Arjona *et al* 2023; Poitiers *et al* 2024).

Trade and Economic Security Commissioner Šefčovič has been asked "to develop economic security standards for key supply chains with our G7 and other likeminded partners" (see footnote 2). As discussed in section 3.4, it is not clear that the G7 is the relevant forum for developing such standards. There is also a need for greater conceptual clarity about the reasons for such standards. For instance, should such standards be met to benefit from certain incentives, or as a condition of

market access? So far, the only standard with a clear economic security rationale is the NZIA resilience criteria.

In relation to consumption subsidies for green products or preferences for green procurement, the promotion of lead markets would argue for standards based on well-defined carbon-footprint and circularity requirements, which in cases of high dependency may be combined with resilience standards.

However, the risk of the emergence of an amalgamation of unrelated requirements to establish an ill-defined 'economic security standard' could lead to discrimination and protectionism.

One particular concern is the introduction in the EU's February 2025 Clean Industrial Deal (European Commission 2025) of the concept of 'Buy Europe' or 'minimum European content', under which only products with a certain level of European content will benefit from access to government procurement or other benefits, such as consumption subsidies. Such policies would be incompatible with the EU's international obligations and could also become a major obstacle to developing partnerships as part of the economic security strategy.

Moreover, the introduction of such criteria is not necessary to de-risk from China since China is not a member of the World Trade Organization Government Procurement Agreement and 'resilience' criteria will often be sufficient for de-risking purposes outside of government procurement. A 'Buy Europe' policy could be a major obstacle to partnerships with likeminded countries and for the diversification of supply chains.

A more coherent approach to the deployment of industrial and foreign economic policies for economic security purposes requires a multi-step analysis:

1. Identify the most economically significant economic security risks in terms of supply chain dependencies and risks in relation to critical technologies;
2. Conduct an economic assessment of the extent to which the EU has the capacity to increase production in the EU, or to maintain its lead or develop foundational technologies;
3. Identify the most effective tools to achieve the industrial policy objectives; and
4. Develop partnership strategies for the diversification of external supplies as the most cost-effective approach to reducing vulnerabilities.

The economic security doctrine should contribute towards better governance on the use of industrial policy and its interface with trade and other external policies.

3.2 Economic statecraft instruments

In certain instances, the promotion of economic security

justifies the introduction of export or investment restrictions. These are the two most traditional economic statecraft instruments, use of which has intensified in recent years. In the EU, they are managed at member state level, though there have been ongoing attempts to reinforce EU coordination.

The EU has also adopted a specific instrument to respond to economic coercion: the Anti-Coercion Instrument (ACI; Table 1), which empowers the European Commission to retaliate against economic coercion with a variety of coordinated measures. To be triggered, the Council of the EU decides whether an instance of economic coercion has taken place. Once this decision has been taken, the European Commission has broad powers to retaliate against the offending country in a proportionate manner.

At the time of writing, the EU has not yet deployed the ACI, though Chinese responses to the EU countervailing duties on EVs or President Trump's so-called reciprocal tariffs could have fallen within its scope. The unwillingness to deploy the ACI in circumstances of clear coercive threats raises serious questions about its credibility.

The EU must be ready to deploy the ACI in case US threats of digital regulation materialise, or if China seeks to weaponise critical raw materials dependencies to influence EU decision making.

The identification of chokepoints and reverse dependencies is crucial in identifying possible response measures. The EU also needs to build the capacity to respond to possible escalation by the coercer. A discussion with EU countries should take place ahead of any invocation of the ACI to identify the appropriate tools to deter or respond to threats linked to digital regulation or the dependency on critical raw materials.

More broadly, the ACI should not be treated only a measure of last resort. The instrument allows targeted responses against measures or threats that seek to influence sovereign choices by the EU or its member states. Not responding to coercion would fundamentally weaken the EU as a geopolitical actor.

Another measure to protect European economic interests against foreign interference is screening of foreign direct investment. This is intended to protect strategic technologies from acquisition by potential geopolitical adversaries.

However, the European Commission plays only an advisory and coordinating role on FDI screening. EU governments decide themselves whether or not to block FDI, based on national-security concerns.

The Commission has proposed reinforcing FDI screening (see Table 1) so that all EU countries have the capacity to screen investments in sectors that are critical for economic security; this would improve the coherence of investment screening.

The adoption of the Commission proposal (European Commission 2024a) is the minimum required to ensure adequate protection against risks of technology leakage, or relating to the protection of critical infrastructure.

The US has increased the use of export controls on dual-use technologies, particularly those related to semiconductors. China has introduced controls on critical raw materials exports, potentially causing major economic disruption.

For the EU, greater coordination of export controls among member states is critical, in case escalating geopolitical tensions result in tit-for-tat export controls by the US and China.

The economic security framework should propose reinforced coordination of export controls at EU level, including an early warning mechanism under which the Commission and EU governments would be notified when a member state is considering the introduction of new controls.

3.3 Foreign economic policies

The two main foreign economic policies that can be deployed to reinforce economic security are trade policy and development cooperation policy. The EU's vast network of free trade agreements (FTAs) is an essential tool to reduce export dependencies at time when the EU is vulnerable to the combination of US protectionism, and the Chinese focus on exports as the main source of growth.

Of particular importance are trade agreements with emerging economies that are both highly protected and have a substantial growth potential, such as the Mercosur bloc, India and Indonesia. It is also essential that the EU seeks to maintain maximum stability and predictability by leading a broad coalition that prepares the ground for World Trade Organization reform (García Bercero 2025).

Since WTO reform will take time, the EU should also seek ways to reinforce linkages between its bilateral trade agreements. This could be done, for example, through a common protocol on rules of origin, or closer cooperation with likeminded partners on supply chain resilience.

The EU could work with the members of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership as the starting point for such reinforced cooperation. To develop partnerships with third countries, inward-looking economic security policies should be avoided and support for rule-based trade must be maintained.

However, FTAs alone are unlikely to make a decisive contribution to the diversification of imports because WTO-mandated most-favoured nation tariffs for the areas in which the EU is highly dependent on China are often zero or very low¹⁸.

Moreover, FTAs and the WTO often have limited disciplines on export restrictions, or on issues relating to the business environment. Clean Trade and Investment Partnerships (CITPs) such as that signed with South Africa in November 2025¹⁹ could fill this gap.

To be successful, such partnerships should bring together all the relevant tools available to the EU to prepare balanced packages that are attractive to developing partners, including:

1. Identification of projects for which EU companies are ready to invest in the green value chain, including financial de-risking tools;
2. Rules relating to the business environment that address the main obstacles to investment in the country concerned;
3. An offer to provide technical cooperation and regulatory dialogue to facilitate compliance with European Green Deal regulations. This could include cooperation on carbon pricing or on the development of national deforestation plans, for instance.

CTIPs could be negotiated as self-standing agreements or in the context of broader FTA or investment facilitation agreement negotiations. For CTIPs to be effective, it is critical to have sufficient EU-level funding to support both financial de-risking and technical-assistance activities. This could be done through an 'external partnerships' window in the new Competitiveness Fund.

3.4 Governance of economic security

The implementation of economic security strategies raises a governance challenge. At EU level, there is a need to coordinate deployment of the various economic security tools, for which different parts of the Commission are responsible, and to ensure a robust framework for sharing information and for the coordination of EU and member state instruments.

At international level, the relationship between WTO rules and economic security measures, and whether a new institutional framework is needed to coordinate economic security policies, must be clarified.

The creation of the role of European commissioner responsible for economic security was an important step towards better coordination of the work being done in the Commission, both on risk assessment and on ensuring synergy and coherence in the deployment of the different economic security tools. This would imply a reinforcement of cooperation between the relevant Commission services, with a coordinating role for the trade directorate-general.

At the political level, the Commissioners' Project Group on Economic Security²⁰ could steer work on risk-mitigation strategies and arbitrate in case of potential conflicts between services.

The Commissioners' Project Group could perform two critical functions. It should agree on the prioritisation of economic security threats and should ask a lead service to coordinate the preparation of risk-mitigation strategies, based on contributions from all relevant services.

Prioritisation of threats should be based on a rigorous analysis of the risk of weaponisation of dependencies, and on the economically efficient means to mitigate such risks. In this context, the Commissioners' group could seek an economic analysis from the Commission's economic and financial affairs directorate-general.

Such risk-mitigation strategies should assess how all available tools that can contribute towards risk mitigation can be deployed coherently. These strategies should then be discussed with member states to encourage consistency between EU and member state actions, and to provide a basis for a 'Team Europe'²¹ approach to engage with third countries to develop de-risking partnerships.

At the working level, the Commissioners' group should regularly update risk assessments and review cooperation activities with third countries. There should also be opportunities to consult the private sector when developing sectoral de-risking strategies.

In this context there may also be a need to develop instruments to gather the information needed to underpin economic security. This may require working more closely with those member states and economic operators present in priority value chains, to identify vulnerabilities that need to be de-risked. This work would be particularly relevant to identify reverse dependencies.

It is critical to fully involve member states in the assessment of risks, the development of risk-mitigation strategies and in seeking coordinated responses in areas of national competence, particularly when there is external pressure to align with the US. The Commission has already established an Economic Security Network to promote integrated advice from member states.

This should be reinforced (Steinberg and Wolff 2023; Letta 2024) through the establishment of a Council Working Group on Economic Security. The group should also evaluate policies relating to investments and export controls, on which most decisions are made at member state level. At the ministerial level, a Council meeting of ministers responsible for trade and industrial policies should be held once a year.

The WTO framework provides a basis for the development of economic security policies, even if there are gaps that should be clarified as part of a plan for WTO reform (Pinchis-Paulsen 2025; Pinchis-Paulsen *et al* 2024).

The current rule book provides enough policy space for countries to adopt sanctions in the event of war or other emergencies, or to adopt measures to restrict investments or exports of dual-use technologies.

WTO rules are, therefore, no obstacle for the use of traditional economic statecraft tools or sanctions in response to hard security threats.

The WTO rules on subsidies are also sufficiently flexible to accommodate policies that may need to be adopted for economic security purposes, though there may be a need to reinforce these rules to prevent their use to generate dependencies and to clarify when resilience criteria can be applied.

In other words, economic security should not become a justification for adoption of WTO-incompatible measures.

The WTO does not at this stage provide a forum in which economic security policies can be discussed. There are also questions about whether the WTO dispute-settlement mechanism is the most appropriate tool to address conflicts arising from the implementation of economic security measures. The WTO framework could, however, be critical role in preventing tit-for-tat escalation by ensuring that any response to measures based on essential security concerns remains proportionate.

For instance, instead of reviewing the legal justification for export controls on dual-use technologies, an arbitration panel could establish the economic impact of the measures and review the proportionality of possible responses. All of these issues could be part of the discussion on WTO reform.

Beyond WTO, the G7 has been important for discussions on economic security. However, it is unlikely that the Trump administration would be ready to enter into a genuine process of consultation on economic security policies and measures. When the US might try to coerce other G7 members, it is difficult to see how meaningful any discussions in a G7 anti-coercion forum would be.

Nevertheless, there may be scope to cooperate on policies aiming at de-risking import dependencies in certain priority areas, such as critical raw materials.

In the absence of effective G7 cooperation, the EU could seek to reinforce bilateral dialogues on economic security issues with likeminded partners, notably the UK, Japan, Canada, Australia and South Korea.

This could provide the basis for an informal group to coordinate policies on the de-risking of critical value chains and on responses to coercion.

4 Recommendations and conclusions

Our main policy recommendations arising from the analysis in section 3 are:

- New economic security risk assessments should be started to evaluate risks associated with EU dependencies on digital and financial infrastructure;
- The Commission should accelerate work on the identification of supply-chain choke-points, based on reverse dependencies;
- Medium-term risk-mitigation strategies need to be developed for priority economic security risks, particularly related to dependencies on critical raw materials and digital and financial infrastructures;
- The Anti-Coercion Instrument should be made ready for deployment in case threats related to digital regulation or export controls on critical raw materials are used as a coercive instrument;
- The Commission should propose reinforced coordination on export controls, and the investment screening

regulation should be reinforced based on the Commission proposal;

- Any proposal to use industrial policy for economic security reasons should be preceded by a robust assessment of the economic security risks and an economic analysis that establishes the proper balance between industrial policies and foreign economic policies;
- Measures inconsistent with the EU's international commitments should be avoided;
- The EU should include cooperation on economic security in its international trade and investment agreements, and should develop clean trade and investment partnerships as an instrument to support diversification of green value chains;
- A new Council Working Group should be established to discuss priority risk-mitigation strategies and to attend, at least once a year, a ministerial-level discussion on the implementation of the economic security strategy;
- At the international level, the EU should include discussions on economic security in its strategy on WTO reform, while coordinating policies with an informal group of like-minded countries and negotiating a supply-chain resilience agreement with the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

The current geopolitical context implies that the EU needs to de-risk its relationships with China and the US, while facing a major hard security threat from Russia. This challenging environment makes it essential for the EU to develop broad alliances with countries that wish to maintain rules-based cooperation. The EU will need to stay decoupled from Russia economy for as long as it represents a threat.

The objective with China and the US should be to reduce dependencies while maintaining a maximum of mutually beneficial economic engagement. The extensive nature of dependencies implies the need for medium-term de-risking strategies, combined cooperation. However, the EU must also be ready to respond to threats of coercion.

Most economic security measures are preventive: an insurance policy to limit the risk of geopolitical tensions harming economic interests. In most instances economic security is not about responding to hard security threats, so it is essential to have institutional mechanisms that allow for the evaluation of trade-offs.

In particular, trade-restrictive economic security measures need to be balanced against the economic benefits of openness, or of achieving other essential EU objectives, such as the net zero transition.

Whenever possible, win-win policies, including reinforcement of the single market, support for R&D, free trade agreements and support for green investment in developing countries, should be preferred over measures that restrict trade. ■

Endnotes

1. See European Commission press release of 20 June 2023, 'An EU approach to enhance economic security'.
2. European Commission, 'The EU-US trade deal: Restoring stability and predictability', undated. Despite the EU-US trade deal, there have been US threats of tariffs as a response to EU digital regulation (see section 2.4).
3. Other economies have also introduced policies and strategies aimed at bolstering their version of economic security. See Chimits et al (2024) for an overview of different countries' measures.
4. Mission Letter from Ursula von der Leyen to Commissioner-designate for Trade and Economic Security Maroš Šefčovič, 17 September 2024.
5. The US policy is evolving; see Michael Acton, Dimitri Sevastopulo and James Politi, 'US scraps Biden-era rule that aimed to limit exports of AI chips', *Financial Times*, 21 May 2025. See also Kana Inagaki, Sarah White, Ian Johnston and Ryan McMorro, 'Carmakers gear up for chip battle after China curbs Nexperia exports', *Financial Times*, 17 October 2025.
6. See Ryan McMorro and Dimitri Sevastopulo 'China unveils sweeping rare-earth export controls to protect 'national security'', *Financial Times*, 10 October 2025.
7. A European Commission intention to produce a 'RESourceEU plan' is a recognition of this. See speech of 25 October 2025 by Commission President Ursula von der Leyen at the Berlin Global Dialogue.
8. For a more detailed discussion, see Mejean and Rousseaux (2024) and Pisani-Ferry et al (2024).
9. Thomas Hale, Joe Leahy and Barney Jopson, 'Spain's Pedro Sánchez calls on EU to "reconsider" Chinese EV tariffs'.
10. Edward White, Adrienne Klasa and Andy Bounds, 'China targets EU brandy imports with anti-dumping penalties', *Financial Times*, 4 October 2024.
11. Matt Geraci, 'China's lobbying did not block the EU's new EV tariffs. But it may yet weaken them', *New Atlanticist*, 4 October 2024, Atlantic Council.
12. See Economist Impact, 'Trade in Transition 2025: Balancing optimism with caution', undated.
13. Gillian Tett, 'Dollar dominance means tariffs are not the only game in town', *Financial Times*, 10 January 2025; Katie Martin, 'Trump's freewheeling disruption could extend to the dollar' *Financial Times*, 20 February 2025.
14. Miran (2024) discussed using access to swap lines, which are a crucial tool for international financial stability, as an incentive to sign an accord that would force countries to accept a write-off on US government bond holdings. See also Elisa Martinuzzi, Jesús Aguado, Balazs Koranyi, Stefania Spezzati and John O'Donnell, 'Exclusive: Some European officials weigh if they can rely on Fed for dollars under Trump', *Reuters*, 24 March 2025.
15. For a discussion on satellites, see Alan Beattie, 'Europe tries to fix its plumbing — and leave Starlink behind', *Financial Times*, 20 March 2025. More broadly on digital services, see Fabry (2025).
16. Barbara Moens and Aime Williams, 'Donald Trump threatens retaliatory tariffs after EU hits Google with €2.95bn fine', *Financial Times*, 5 September 2025.
17. Michael Acton and Guy Chazan, 'Intel outlines plans to cut costs and boost chip business in turnaround push', *Financial Times*, 16 September 2024.
18. In the case of critical raw materials, see Le Mouel and Poitiers (2023).
19. See European Commission news of 20 November 2025, 'EU and South Africa sign first-ever Clean Trade and Investment Partnership (CTIP)'.
20. See Decision of the President of the European Commission on the establishment of a Commissioners' Project Group on Economic Security, 7 January 2025.
21. See Team Europe Initiatives website, European Commission.

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RESPONSIVE EFFICIENT
INNOVATIVE

TOTAL AIRCRAFT REGISTRATION SOLUTIONS

Securing strategic autonomy



Europe's lack of defence capabilities leaves it vulnerable to economic and foreign policy pressure. Philipp Hildebrand, H el ene Rey and Moritz Schularick outline key principles for establishing a European Future of Defence Architecture and a framework for its financing



Europe must urgently strengthen its defence capabilities to secure strategic autonomy. The absence of such capacity leaves the continent vulnerable to economic and foreign policy pressure, threatening the survival of the EU and its core values. Europe must also address the overwhelming dominance of US capital markets.

This column outlines key principles for establishing a European Future of Defence Architecture and the common framework for its financing. Such a framework would support the development of a safe and liquid European securities market at a propitious moment, as global investors are actively seeking alternatives to the dollar.

It would address a critical and urgent collective security need. It would establish the governance and foundations necessary for the emergence of a European safe asset, which is a critical step forward for the integration of European financial markets.

By Europe, we refer to a coalition of willing EU countries – the ‘European Team’ – prepared to move quickly, as time is short.

European Future of Defence Architecture

This column does not address traditional expenditures such as personnel, munitions, and tanks. Instead, it focuses on the development of European strategic autonomy in next-generation military technologies such as a European sky shield, hypersonic weapons, strategic enablers such as the cloud, AI infrastructure, advanced software, quantum computing, cyber capabilities, satellite constellations, drones, robotics, and critical-mineral processing technologies.

Security needs and these technologies have a distinctly European dimension. These technologies cannot be deployed efficiently at the national level. Today, fragmented defence spending has produced duplication, inefficiency, and lack of scale. Europe lags in essential fields¹. To reverse this, the European Team must:

- Pool resources and engage in joint, predictable procurement over extended periods.
- Ensure some competition among the European Team firms for long-term contracts.
- Rely on long-term commitments to build industrial capacity and foster innovation.

Many of these technologies will be dual-use, contributing to both security and long-term productivity growth. Their relative novelty limits the entrenched influence of national champions and lobbies, giving policymakers an opportunity to pursue joint procurement without legacy obstacles. Digital technologies and satellites are prime examples of dual-use technologies, of transcending national borders, and of being crucial for our defence.

Governance of the European Future of Defence Architecture

Article 346 TFEU exempts the defence industry from standard EU Single Market provisions, including non-discrimination in procurement. Hence an intergovernmental treaty among

European Team countries is necessary. The intergovernmental treaty should allow the coalition of countries to deliver on their future of defence goals quickly. For this a special attention to the robustness of the decision-making process and its rules will be called for.

Steering Committee of Defence and Technology Experts

This body, transcending national borders, should define forward-looking priorities, allocate resources within a multi-year budget, plan investments, and ensure quality control, scale, and interoperability.

- For its innovation mandate, the committee could draw on the DARPA² model of governance.
- The overall multi-year budget should be determined by European Team representatives, taking NATO commitments and other national defence needs into account.
- A Team Europe Military Purchase mechanism should be put in place (similar to US Foreign Military Sales) in order to simplify defence purchases by all European countries and allies (scope to be defined by the steering committee).

Financing

The European Defence Architecture is a joint investment and requires joint financing. Because of past underinvestment in European defence, defence spending needs to be front-loaded to catch up and therefore debt financing in the short run is needed. Individual countries cannot shoulder, nor perform efficiently, the necessary catch up in future of defence technologies, which have a European dimension.

Alongside the Defence and Technology Committee, a Steering Committee for Financing Future Defence should be created. The two steering committees should work in close cooperation.

Mandate of the Financing Committee

- Issue joint European Future of Defence Bonds to minimise financing costs (joint and several liabilities).
- Achieve sovereign status for these bonds³.
- Ensure eligibility for ECB refinancing operations.

Such a mandate would help accelerate the development of deeper, more liquid capital markets to compete with the growing dominance of the US capital market since the Global Financial Crisis.

Achieving sovereign status likely requires:

1. A predictable issuance calendar enabled by the recurring nature of defence financing.
2. Revenue streams attached to the bonds
3. Minimum issuance scale or predictable growth over time.

“The urgency cannot be overstated. Russian aggression, shifting US commitments, and global competition over trade, technology, critical minerals, talent, and intellectual property create a narrow window of political alignment. Europe must seize this opportunity to safeguard its autonomy and to finally develop and integrate its financial markets”

4. Transparency and credibility of the European Team’s commitments.

Repayment shares using national revenues or the use of common tax resources should be decided by European Team representatives.

Sketch of a possible future of defence spending profile for a catch up

- Spending of 1% of GDP per year for the next ten years, going down to a steady 0.5% thereafter.
- Future of Defence issues 1% of GDP with ten-year maturity, each year for ten years and rolls over the new debt so there are no payments (on principal or interest) for the first ten years.
- The outstanding debt in 2035 would represent about 10% of GDP (at 3% annual interest rate). From 2035 on, the debt would be stabilised with member country fiscal resources.

About 1% of GDP would be rolled over every year with member countries fiscal resources covering the interest costs (net of growth) and the flow of 0.5% of current future of defence expenditures.

- After 2035, the contribution of member country fiscal resources would be about 0.6% of GDP for a steady permanent defence spending of 0.5% of GDP and payment of interest to stabilise the debt-to-GDP ratio.
- With a GDP of €15.9 trillion in 2024 (team made of France, Germany, Italy, Spain, the Netherlands, Belgium, Luxemburg, Poland, Ireland, Sweden, Denmark, Finland, Greece, Estonia, Lithuania, Latvia), nominal growth of about 2%, cumulative spending would be about €1.8 trillion for ten years (2026-2035) for the catch-up phase⁴.
- If the team consisted of the entire EU, with a GDP of about €17.9 trillion in 2024, nominal growth of about 2%, this gives a cumulative spending of about €2 trillion for ten years (2026-2035) for the catch-up phase.
- Fiscal resources after ten years – for example, VAT receipts of each country could be allocated.

This defence spending profile can be scaled up or down depending on the identified military needs put forward by

the Steering Committee of Defence and Technology Experts. For example, for the team made of France, Germany, Italy, Spain, the Netherlands, Belgium, Luxemburg, Poland, Ireland, Sweden, Denmark, Finland, Greece, and the Baltic countries, a catching up phase spending of 0.5% of GDP per year for the next ten years would lead to cumulated spending of about €900 billion and a debt-to-GDP ratio of about 5% in 2035.

Governance of Future of Defence Bonds

We focus on one possible implementation, but there are several. For concreteness, we take an example where the Financing Committee could be housed within the European Stability Mechanism (ESM). Other possibilities include the European Investment Bank (EIB) or a new agency. If the ESM were used, one would need to create two distinct pillars:

- Pillar I: Current ‘European Monetary Fund’ functions (crisis management function)
- Pillar II: Financing functions for the European Defence Architecture (common investment function)

Advantages of using the ESM:

- Established via intergovernmental treaty.
- Experienced in bond issuance and well capitalised.
- Crucially, ESM debt is off member-state balance sheets – a key advantage given fiscal constraints and NATO commitments.

The ESM treaty (not yet ratified) should be amended to:

- Authorise lending not only to member states but also to agencies (eg. the Future of European Defence Agency).
- Reflect the creation of the second financing pillar of a very different nature from the first pillar. The second pillar is there to fund a common investment of Team Europe.
- Authorise some non-euro area and some non-EU members to be part of pillar II of the ESM.

One potential disadvantage of using the ESM for this initiative is the fact that the ESM was explicitly designed as a crisis mechanism for the euro area and not a general financing vehicle. For that reason, the creation of a new financing agency could instead be considered.



Composition of the European Team

- The European Team should begin with a subset of EU countries willing to move quickly, prioritising governance quality over size.

It would be highly desirable to quickly associate non-EU countries such as Norway, the UK, Switzerland, and Ukraine.

- Once established, the framework should remain open to other volunteer countries.

This inclusiveness should be considered when revising the ESM treaty and building the legal framework or when setting up a new dedicated financing and issuing agency.

Why this approach would work

- Urgency: the geopolitical situation is recognised as critical across European capitals.
- European dimension: defence needs and technologies naturally transcend borders.
- Financing credibility: purpose-driven, efficient joint issuance contrasts with earlier Eurobond proposals.
- Market timing: global investors seek safe alternatives to dollar assets.

- Fiscal flexibility: enables member states to meet NATO commitments despite fiscal constraints.
- Economy: dual-use contributes to both security and long-term productivity growth. Proper governance of a common investment and joint financing helps build up the savings investment union and a European safe asset.
- Institutional blueprints: building on a NATO European branch/DARPA/ESM can help speed up the implementation.
- Historical context: allows Germany to channel large defence commitments into joint European projects, which is a plus given Europe's history.

Time horizon

- Treaty amendments and ratifications: approximately one year.
- Establishment of steering committees: similar timeframe.
- Strategy: begin rapidly with a small group and limited projects, ensuring sound governance, then scale up.

The urgency cannot be overstated. Russian aggression, shifting US commitments, and global competition over



trade, technology, critical minerals, talent, and intellectual property create a narrow window of political alignment. Europe must seize this opportunity to safeguard its autonomy and to finally develop and integrate its financial markets. ■

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Endnotes

1. The current initiatives such as the 2023 EDIRPA ( 300 million) to subsidise common procurement or the  150 bn loans to EU member states by SAFE (Security Action for Europe) are important and are complementary to this European defence architecture. They are key to address some of the current issues linked to the Ukraine war. But they are too small and insufficiently forward looking to provide incentives for innovation and industrial capacity building for the Future of Defence described in this column.

2. On the innovation side, DARPA is characterised by an agile governance structure – with experts in the relevant technological fields – to allocate funds to multiple research teams pursuing specific objectives, with clearly defined milestones evaluated before further disbursements are made. What characterizes DARPA is precisely this ability to set clear goals, provide incentives and resources, and ensure that those goals are achieved as quickly as possible.

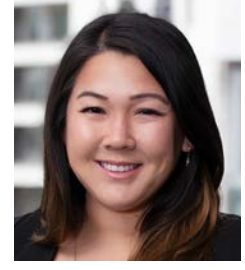
3. The failure to obtain full sovereign status in the past meant that jointly issued debt by European countries or the European Commission has not been included in indices, therefore has more limited demand and less attractive financing terms. The goal of the Steering committee should be to issue Future of Defence bonds at close to zero spread compared to the best euro area bond market performers. Because of the sound institutional set up, Future of Defence bonds should benefit from a convenience yield within a short time horizon, which would decrease the spread of the Future of Defence bonds. Pure defence bonds might exclude some investors due to their investment policies, but that we do not believe this is a significant constraint.

4. If catch up spending of 2% of EU GDP was made during a five-year period (2026-2030) with stabilisation and steady spending afterwards, debt would be stable at 10% of GDP after 2030. Cumulative spending would be  1.9 trillion (2026-2030) for the EU.

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Sanctions without borders? The increasing use of thematic sanctions



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Since the introduction in the US of the Global Magnitsky Human Rights Accountability Act in 2016, the EU, UK and US have increasingly used thematic sanctions as a foreign policy tool. This means that sanctions regimes have been established based on themes (ranging from corruption to terrorism) rather than being tied to a specific country.

The intention of these regimes is to establish accountability for prohibited practices as a global principle (such as protecting human rights or fighting corruption), rather than one limited by borders. This shift has several important implications across political, legal, and economic dimensions.

Thematic sanctions allow governments to freeze assets and ban travel for individuals or entities anywhere in the world which they deem to be responsible for violations of the values-based standards that they have set. There are currently ten regimes in effect across the EU, UK and US and new regimes are still emerging based on domestic and foreign policy priorities.

However, the use of these measures has also been subject to pushback from those who claim the sanctioning states are using them as a form of politicised global law enforcement.

Benefits

One of the key benefits of the establishment of thematic sanctions regimes is their flexibility. Allowing sanctioning states to act quickly to apply pressure on individuals or entities makes them extremely adaptable to emerging issues.

At the same time, they reduce the potential for diplomatic fallout caused by the targeting of specific countries. Their global nature also strengthens deterrence by signalling that no one is beyond the reach of sanctions, regardless of geography.

The regimes have been used effectively by the various sanctioning states both as a coordinated measure (for example human rights designations), and also to tackle specific concerns in a particular jurisdiction. For example, the US has developed a regime to combat international drug trafficking by targeting narcotics traffickers and their associated organizations.

The Foreign Narcotics Kingpin Designation Act (the Kingpin Act) originated to target and isolate members of the powerful drug cartels in Colombia during the 1980s and 1990s. Under the Kingpin Act, the President of the United States may designate individuals and entities on the US Department of the Treasury's Office of Foreign Assets Control's (OFAC) Specially Designated Nationals and Blocked Persons List (SDN List) as "Significant Foreign Narcotics Traffickers" subjecting them to strict economic sanctions.

Meanwhile, in the UK, where illegal migration has become a significant political concern, the Global Irregular Migration and Trafficking in Persons Regulations 2025¹ (the Regulations) were introduced in July 2025. The Regulations grant the power to designate individuals and entities involved in people-smuggling, trafficking in persons, and the instrumentalisation of migration for destabilising purposes.

The Regulations provide for asset-freezes, travel bans and director disqualifications against designated persons. The first wave of 25 designations were made in July. The extent to which the measures are having any practical effect, such as disrupting finances, or preventing the operations of smuggling networks is not yet known.

However, to bolster the measures, the Global Irregular Migration and Trafficking in Persons Sanctions (Overseas Territories) Order 2025² came into effect in October which applies the migration sanctions measures to the UK's overseas territories.

Challenges

The rise in thematic sanctions has created major compliance challenges for companies, especially multinational organisations operating across jurisdictions. Companies can no longer focus compliance just on 'high-risk countries', but rather risk assessments must now address both behavioural risk (what the counterparty does), as well as geographic risk (where they are located).

The rise of these regimes increases the importance of robust due diligence and beneficial ownership tracing. Companies must apply a risk-based approach and ensure that their due diligence measures go beyond name-based checks to thoroughly examine counterparties' activities, ownership,

and affiliations. This should include sufficient scrutiny of ownership structures and identification of the ultimate beneficial owner.

They should also ensure that their policies and procedures are regularly updated, and establish procedures for handling potential matches, including internal training and clear escalation protocols.

In addition to the complex compliance burden, there have been questions over the efficacy of thematic sanctions and whether they will have sufficient 'bite'. They are more symbolic in purpose: signalling the condemnation of certain behaviours.

However, whether they can serve as an effective coercive economic measure remains to be seen. Further, whilst they can be used to diffuse political fallout, they may also act to strain diplomatic relations with countries whose nationals are targeted, if not used carefully.

Additionally, there have been concerns raised about the overuse of sanctions measures (both thematic and geographical) and whether this serves to undermine their value, by pushing companies to use other currencies or other circumvention measures.

One regime that has received pushback is the current US Administration's sanctions on individuals currently serving on the International Criminal Court (ICC). In February 2025, the Administration issued Executive Order (EO) 14203 *"Imposing Sanctions on the International Criminal Court,"* which states that,

"Thematic sanctions mark a strategic evolution in coercive diplomacy: more targeted, value-driven, and flexible, but also more legally and politically complex"

"[t]he ICC has, without a legitimate basis, asserted jurisdiction over and opened preliminary investigations concerning personnel of the United States and certain of its allies, including Israel, and has further abused its power by issuing baseless arrest warrants targeting Israeli Prime Minister Benjamin Netanyahu and Former Minister of Defense Yoav Gallant."

The EO also states that the ICC does not have jurisdiction over the United States or Israel, not being signatories to the Rome Statute. In a press release, experts at the United Nations expressed concern regarding the EO stating that, these sanctions *"are a direct assault against the independence of the tribunal"* and that *"[t]he US Government must uphold the rule of law and the independence of judges and prosecutors by rescinding these sanctions."*³

Thematic sanctions mark a strategic evolution in coercive diplomacy: more targeted, value-driven, and flexible, but also more legally and politically complex. Their effectiveness will depend on transparency, international coordination, and whether they produce measurable behavioural change rather than simply symbolic condemnation. ■

Endnotes

1. <https://www.legislation.gov.uk/uksi/2025/902/introduction/made>.

2. <https://www.legislation.gov.uk/uksi/2025/1092/made>.

3. <https://www.ohchr.org/en/press-releases/2025/08/us-sanctions-icc-officials-undermine-independence-tribunal-and-justice#:~:text=%E2%80%9CSanctioning%20ICC%20judges%20and%20prosecutors,the%20Court%2C%E2%80%9D%20they%20said>.





Trump's tariffs as fiscal folly



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In 2025, the US government underwent a large fiscal switch. The US Congress enacted large income tax cuts, while the second Trump administration put new tariffs on goods at levels not seen in the US since the Great Depression. Such high tariffs are unheard of in the modern experience of most rich nations.

Typically, in high-income countries, tariff revenues account for a mere 1.25% of the value of goods imports and less than 2% of total government revenues¹.

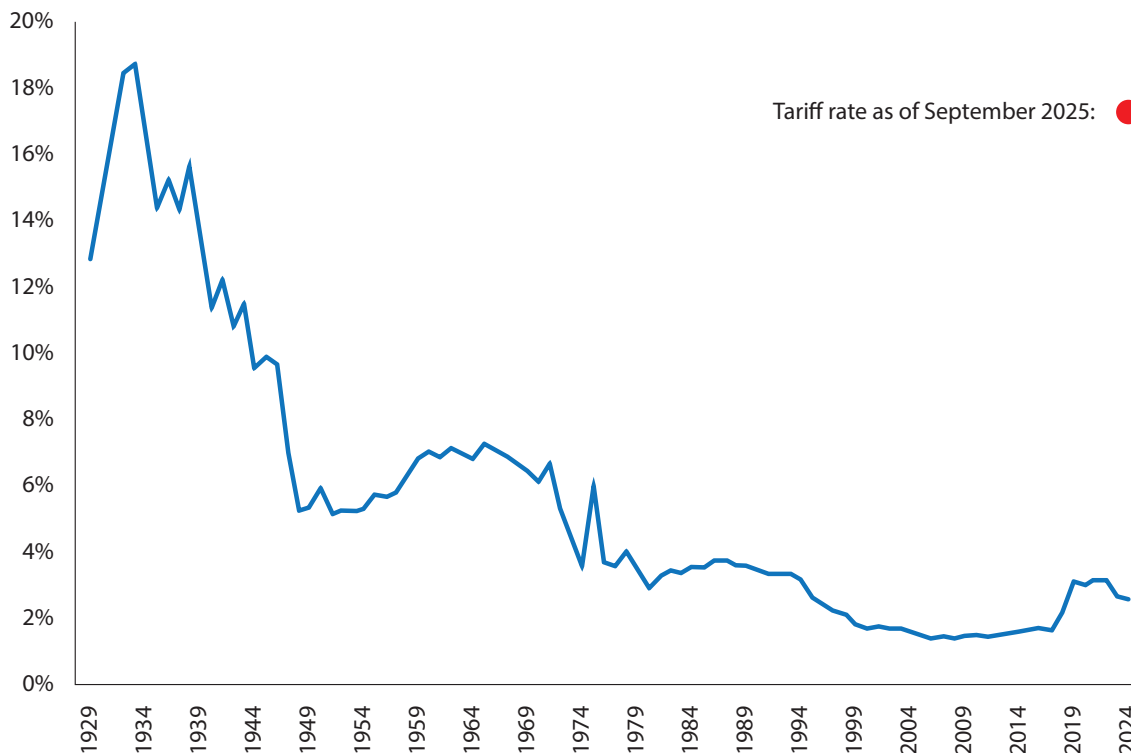
While there are ample analyses of the first Trump administration's China tariffs² and detailed histories of the use of tariffs in the US (Irwin 2017), the full implications of the

administration's 2025 fiscal pivot will take time to unpack. In a recent paper (Clausing and Obstfeld 2025), we begin by evaluating tariffs as a broad tool of fiscal policy, reviewing both tax policy and macroeconomic considerations.

By these criteria, this fiscal switch will leave most Americans worse off. The negative distributional effects of tariffs are compounded by high efficiency costs, negative political economy consequences, and the twin macroeconomic pressures of negative supply shocks – upward price pressures and reduced economic growth.

While tariff revenues have burgeoned under the new Trump tariff policies, reaching about \$30 billion per month in August

Figure 1. US effective tariff rates: Customs duties relative to total spending on goods imported, 1929-2025



Note: Actual revenues may be lower than those implied by this rate due to myriad exemptions. Source: Data on customs and imports are from the US Bureau of Economic Analysis. The 2025 tariff is from Budget Lab (2025a).

2025, several factors will determine the long-run revenue potential of US tariffs, including increasing rates of pass-through over time (as companies raise prices more if tariffs prove long-lasting), behavioural responses, tax avoidance, and the ability of firms to lobby for exemptions.

Other key considerations also reduce the fiscal benefits from tariffs, including mechanical reductions in other parts of the tax base (as tariff dollars cannot be simultaneously taxed elsewhere), payments to industries losing market share abroad (eg. farming), and the effects of reduced economic growth on the overall tax base.

There are also legal uncertainties regarding the President's tariff regime. If the US Supreme Court backs lower court rulings that invalidate the President's broad use of tariff authority under the International Emergency Economic Powers Act (IEEPA) – as many legal scholars deem highly possible – that will reduce the administration's flexibility in raising tariffs and is likely to substantially dampen tariff revenue. In 2025, most new US tariff revenues flow from IEEPA tariffs.

If such broad tariffs survive legal challenges, tariffs could net about \$2 trillion in revenue over the coming ten-year budget window. While projected US tariff revenues are insufficient to pay for the tax cuts enacted as part of the 2025 budget legislation (\$3.4 trillion over the budget window), they may prove hard for future US administrations to forgo, given the high current path of US deficits and debts³.

Still, potential tariff revenues are limited. Even if tariffs were levied at revenue-maximising rates, they would finance less than one-fifth of current US federal personal income tax revenue. Even tariffs at today's rates come with serious downsides.

We calculate that tariffs have efficiency costs that approximate 30% of revenue raised at current (September 2025) US tariff rates, and efficiency costs would reach 90% of revenue raised at revenue-maximising tariff rates⁴.

Moreover, tariffs are a more regressive tax than the income tax, since poorer households save very little of their income in comparison with richer households. (While tariffs are less efficient than value-added taxes, they have similar distributional effects; saving is exempt from both taxes.) The 2025 tax and budget legislation (OBBBA) cut Medicaid and food assistance, generating negative income effects for the bottom three deciles of the US population.

The legislation has a further regressive impact overall because tax cuts are a higher share of after-tax income for households higher in the income distribution. The tariffs add to this regressivity, and they generate a negative net impact for most households. For all but the top decile of the US income distribution, tax increases from tariffs outweigh the gains from OBBBA tax cuts (Budget Lab 2025b).

In addition to their economic costs, tariffs create political dysfunction, as they encourage rent-seeking and corruption. Foreign governments, firms, and lobbyists seek better

“While tariffs can be a useful tool for some circumstances in a rules-based system, the Trump administration's ad hoc deployment of high tariffs against nearly every country in the world does serious harm to US international economic and political relations”

treatment than their competitors (through lower tariff rates or tariff exemptions).

Adding to the distortions, the Trump administration has levied tariffs in a highly coercive manner, forcing several foreign governments to offer unprecedented terms including promises of multi-hundred billion dollar investment funds that apparently would be directed by the Trump administration.

US tariffs have also been used as a punishment based on criteria completely divorced from trade. As just one example, the US levied a 50% tariff on Brazilian products due in large part to displeasure with the Bolsonaro prosecution⁵.

The current implementation of US tariff policy is haphazard and uncertain, adding both opportunities for rent-seeking and substantial unpredictability. In less than eight months (though end of August), more than 87 major policy developments have shifted the US trade environment (Bown 2025).

At the same time, de minimis exceptions that streamline the customs treatment of small packages were abruptly ended, and complex new rules have complicated compliance.

These factors create administrative frictions that are particularly burdensome for smaller enterprises, and they raise costs for US importers and customs officials alike.

Supporters of tariffs may quibble with elements of implementation yet still describe the costs to households as ‘worth it’ to ensure two laudable aims: addressing US trade imbalances and increasing US manufacturing production and employment. Yet tariffs will not address US imbalances, since they do not address the root cause of the imbalances.

The US is a net international borrower, driven in large part by the large fiscal imbalances of the US federal government; US budget deficits now exceed 6% of GDP in a time of peace and full employment. So far, 2025 budget deficits are following a pattern that is nearly identical to those of 2023 and 2024 (Congressional Budget Office 2025), and the OBBBA will expand budget deficits relative to pre-OBBBA forecasts in the coming years.

Further, the Trump administration's insistence that countries commit to larger foreign investment in the US, if effective,

would increase trade imbalances by driving up the financial inflows that are the mirror of US current account deficits.

Although tariffs will reduce imports, they will also reduce exports through several channels. First, tariffs reallocate resources in the economy toward import-competing industries and away from export industries. All else equal, tariffs generate dollar appreciation which helps drive this reallocation⁶.

Second, exports are harmed by retaliation; the current plight of US soybean farmers is just one example of shirking markets for US exporters. Third, many US exports contain imported inputs, so tariffs raise input costs, generating negative competitiveness effects.

Beyond macroeconomic imbalances, the tariffs are also failing to lead a US manufacturing renaissance. This fact is unsurprising to those that studied past tariff episodes, including the China tariffs levied during the first Trump administration, which reduced job growth⁷.

US production in many industries has been harmed by disruption, uncertainty, and competitiveness shocks due to higher input costs. On net, the efficiency costs of tariffs will harm economic growth.

Ultimately, tariffs are a negative supply shock. Beyond harming output, they also generate upward price pressure, as both imports and goods that compete with them (or that use imported inputs) become more expensive. Upward price pressure takes time to propagate through the system for several reasons.

There was some import stockpiling before tariffs were levied, there are lagged effects of tariffs on intermediate goods, and some firms may be reluctant to raise prices until tariffs are more certain.

Indeed, there are serious uncertainties about the future path of tariffs, due to the mercurial nature of policy implementation as well as the strong possibility that the tariffs will be overturned by the Supreme Court. Still, tariffs inevitably lead to higher price levels, and the data indicate that this process is already underway.

In the end, the Trump administration's use of tariffs is misguided. Combining income tax cuts with large tariff increases risks makes the tax system less efficient, less progressive, and more prone to political abuse. The Trump tariff regime also generates stagflationary headwinds and reduces goodwill with foreign partners.

While tariffs can be a useful tool for some circumstances in a rules-based system (for example, as a remedy or safeguard), the Trump administration's ad hoc deployment of high tariffs against nearly every country in the world does serious harm to US international economic and political relations.

The underlying policy aims of tariffs, some of which are laudable, would be far better addressed through other tools. For instance, many other changes in the tax system can raise general revenue, the income tax system can redistribute income, and subsidies can encourage strategic industries, all at a lower efficiency cost than deploying tariffs. ■

Endnotes

1. Calculations are based on high-income OECD countries using import data from Harvard Atlas of Economic Complexity and tariff and tax revenue data from the OECD.
2. See Amiti et al (2019), Cavallo et al (2021), Fajgelbaum et al (2020a, 2020b), Fajgelbaum and Khandelwal (2022), Flaaen et al (2020), Houde and Wang (2023), Flaaen and Pierce (2024), Russ (2019), Russ and Cox (2020a, 2020b), Autor et al (2024), and Handley et al (2025).
3. Congressional Budget Office (2025b) estimates the budgetary impact of the 2025 legislation. The Congressional Budget Office (CBO) also has a static estimate of revenue potential from tariffs of \$3.3 trillion in Congressional Budget Office (2025c), higher than the \$2 trillion we note here and close to the cost of OBBBA. However, as CBO notes, tariffs will shrink the size of the economy, which will lower this estimate; CBO also does not account for some of the other relevant considerations acting to lower revenues over time. We discuss the range of tariff revenue estimates more fully in Clausing and Obstfeld (2025).
4. Revenue-maximising tariff rates are about 43%, averaging results from the two import demand specifications in Clausing and Obstfeld (2025).
5. In contrast, the Milei government in Argentina, more kindred in spirit to the Trump administration, has been promised a "whatever it takes" financial bailout, although the terms and success of this bailout remain to be seen.
6. During 2025, the US dollar has broadly depreciated. This departure from the theoretical prediction likely reflects other factors that are operating at the same time, including retaliation, political attacks on the Federal Reserve's independence, and a possible US economic slowdown. Still, econometric studies that control for macro variables suggest that tariff shocks typically lead to appreciation and little change in trade balances (Ostry et al 2025, Furceri et al 2020, 2021).
7. See sources in footnote 2.

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The rise and fall of globalisation

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For nearly four centuries, the world economy has been on a path of ever-greater integration that even two world wars could not totally derail. This long march of globalisation was powered by rapidly increasing levels of international trade and investment, coupled with vast movements of people across national borders and dramatic changes in transportation and communication technology.

According to economic historian J Bradford DeLong, the value of the world economy (measured at fixed 1990 prices) rose from US\$81.7 billion (£61.5 billion) in 1650, when this story begins, to US\$70.3 trillion (£53 trillion) in 2020 – an 860-fold increase. The most intensive periods of growth corresponded to the two periods when global trade was rising fastest: first during the “long 19th century” between the end of the French

revolution and start of the first world war, and then as trade liberalisation expanded after the second world war, from the 1950s up to the 2008 global financial crisis.

Now, however, this grand project is on the retreat. Globalisation is not dead yet, but it is dying. Is this a cause for celebration, or concern? And will the picture change again when Donald Trump and his tariffs of mass disruption leave the White House? As a longtime BBC economics correspondent who was based in Washington during the global financial crisis, I believe there are sound historical reasons to worry about our deglobalised future – even once Trump has left the building.

Trump’s tariffs have amplified the world’s economic problems, but he is not the root cause of them. Indeed, his approach



reflects a truth that has been emerging for many decades but which previous US administrations – and other governments around the world – have been reluctant to admit: namely, the decline of the US as the world’s no.1 economic power and engine of world growth.

In each era of globalisation since the mid-17th century, a single country has sought to be the clear world leader – shaping the rules of the global economy for all. In each case, this hegemonic power had the military, political and financial power to enforce these rules – and to convince other countries that there was no preferable path to wealth and power.

But now, as the US under Trump slips into isolationism, there is no other power ready to take its place and carry the torch for the foreseeable future. Many people’s pick, China, faces too many economic challenges, including its lack of a truly international currency – and as a one-party state, nor does it possess the democratic mandate needed to gain acceptance as the world’s new dominant power.

While globalisation has always produced many losers as well as winners – from the slave trade of the 18th century to displaced factory workers in the American Midwest in the 20th century – history shows that a deglobalised world can be an even more dangerous and unstable place.

The most recent example came during the interwar years, when the US refused to take up the mantle left by the decline of Britain as the 19th century’s hegemonic global

power. In the two decades from 1919, the world descended into economic and political chaos. Stock market crashes and global banking failures led to widespread unemployment and increasing political instability, creating the conditions for the rise of fascism. Global trade declined sharply as countries put up trade barriers and started self-defeating currency wars in the vain hope of giving their countries’ exports a boost. On the contrary, global growth ground to a halt.

A century on, our deglobalising world is vulnerable again. But to chart whether this means we are destined for a similarly chaotic and unstable future, we first need to explore the birth, growth and reasons behind the imminent demise of this extraordinary global project.

French model: mercantilism, money and war

By the mid-1600s, France had emerged as the strongest power in Europe – and it was the French who developed the first overarching theory of how the global economy could work in their favour. Nearly four centuries later, many aspects of ‘mercantilism’ have been revived by Trump’s US playbook, which could be entitled *How To Dominate the World Economy by Weakening Your Rivals*.

France’s version of mercantilism was based on the idea that a country should put up trade barriers to limit how much other countries could sell to it, while boosting its own industries to ensure that more money (in the form of gold) came into the country than left it.

“Today, the greatest risk is the collapse of the US Treasury bond market, which underpins the global financial system and is involved in 70% of global financial transactions by banks and other financial institutions”

England and the Dutch Republic had already adopted some of these mercantilist policies, establishing colonies around the globe run by powerful monopolistic trading companies that aimed to challenge and weaken the Spanish empire, which had prospered on the gold and silver it seized in the Americas.

In contrast to these ‘seaborne empires’, the much larger empires in the east such as China and India had the internal resources to generate their own revenue, meaning international trade – although widespread – was not critical to their prosperity.

But it was France which first systematically applied mercantilism across the whole of government policy – led by the powerful finance minister Jean-Baptiste Colbert (1661-1683), who had been granted unprecedented powers to strengthen the financial might of the French state by King Louis XIV. Colbert believed trade would boost the coffers of the state and strengthen France’s economy while weakening its rivals, stating:

It is simply, and solely, the absence or abundance of money within a state [which] makes the difference in its grandeur and power.

In Colbert’s view, trade was a zero-sum game. The more France could run a trade surplus with other countries, the more gold bullion it could accumulate for the government and the weaker its rivals would become if deprived of gold. Under Colbert, France pioneered protectionism, tripling its import tariffs to make foreign goods prohibitively expensive.

At the same time, he strengthened France’s domestic industries by providing subsidies and granting them monopolies. Colonies and government trading companies were established to ensure France could benefit from the highly lucrative trade in goods such as spices, sugar – and slaves.

Colbert oversaw the expansion of French industries into areas like lace and glassmaking, importing skilled craftsmen from Italy and granting these new companies state monopolies. He invested heavily in infrastructure such as the Canal du Midi, and dramatically increased the size of France’s navy and merchant marine to challenge its British and Dutch rivals.

Global trade at this time was highly exploitative, involving the forced seizure of gold and other raw materials from newly

discovered lands (as Spain had been doing with its conquests in the New World from the late 15th century). It also meant benefiting from the trade in humans, with huge profits as slaves were seized and sent to the Caribbean and other colonies to produce sugar and other crops.

In this era of mercantilism, trade wars often led to real wars, fought across the globe to control trade routes and seize colonies. Following Colbert’s reforms, France began a long struggle to challenge the overseas empires of its maritime rivals, while also engaging in wars of conquest in continental Europe.

France initially enjoyed success in the 17th century both on land and sea against the Dutch. But ultimately, its state-run French Indies company was no rival to the ruthless, commercially driven activities of the Dutch and British East India companies, which delivered enormous profits to their shareholders and revenues for their governments.

Indeed, the huge profits made by the Dutch from the Far Eastern spice trade explains why they had no hesitation in handing over their small North American colony of New Amsterdam, in return for expelling the British from a small toehold of one of their spice islands in what is now Indonesia. In 1664, that Dutch outpost was renamed New York.

After a century of conflict, Britain gradually gained ascendancy over France, conquering India and forcing its great rival to cede Canada in 1763 after the Seven Years war. France never succeeded in fully countering Britain’s naval strength. Resounding defeats by fleets led by Horatio Nelson in the early 19th century, coupled with Napoleon’s defeat at Waterloo by a coalition of European powers, marked the end of France’s time as Europe’s hegemonic power.

But while the French model of globalisation ultimately failed in its attempt to dominate the world economy, that has not prevented other countries – and now President Trump – from embracing its principles.

France found that tariffs alone could not sufficiently fund its wars nor boost its industries. Its broad version of mercantilism led to endless wars that spread around the globe, as countries retaliated both economically and militarily and tried to seize territories.

More than two centuries later, there is an uncomfortable parallel with what the results of Trump’s endless tariff wars might bring, both in terms of ongoing conflict and the organisation of rival trade blocs. It also shows that more protectionism, as proposed by Trump, will not be enough to revive the US’s domestic industries.

British model: free trade and empire

The ideology of free trade was first spelled out by British economists Adam Smith and David Ricardo, the founding fathers of classical economics. They argued trade was not a zero-sum game, as Colbert had suggested, but that all countries could mutually benefit from it. According to Smith’s classic text, *The Wealth of Nations* (1776):



If a foreign country can supply us with a commodity cheaper than we ourselves can make, better buy it off them with some part of the produce of our own industry, employed in such a way that we have some advantages.

As the world's first industrial nation, by the 1840s Britain had created an economic powerhouse based on the new technologies of steam power, the factory system, and railroads.

Smith and Ricardo argued against the creation of state monopolies to control trade, proposing minimal state intervention in industry. Ever since, Britain's belief in the benefits of free trade has proved stronger and more long-lasting than any other major industrial power – more deeply embedded in both its politics and popular imagination.

This ironclad commitment was born out of a bitter political struggle in the 1840s between manufacturers and landowners over the protectionist Corn Laws. The landowners who had traditionally dominated British politics backed high tariffs, which benefited them but resulted in higher prices for staples like bread. The repeal of the Corn Laws in 1846 upended British politics, signalling a shift of power to the manufacturing classes – and ultimately to their working-class allies once they gained the right to vote.

In time, Britain's advocacy of free trade unleashed the power of its manufacturing to dominate global markets. Free trade was framed as the way to raise living standards for the poor (the exact opposite of President Trump's claim that it harms workers) and had strong working-class support. When the Conservatives floated the idea of abandoning free trade in the 1906 general election, they suffered a devastating defeat – the party's worst until 2024.

As well as trade, a central element in Britain's role as the new global hegemonic power was the rise of the City of London as the world's leading financial centre. The key was Britain's embrace of the gold standard which put its currency, the pound, at the heart of the new global economic order by linking its value to a fixed amount of gold, ensuring its value would not fluctuate. Thus the pound became the worldwide medium of exchange.

This encouraged the development of a strong banking sector, underpinned by the Bank of England as a credible and trustworthy 'lender of last resort' in a financial crisis. The result was a huge boom in international investment, opening access to overseas markets for British companies and individual investors.

In the late 19th century, the City of London dominated global finance, investing in everything from Argentinian railways and Malaysian rubber plantations to South African gold mines. The gold standard became a talisman of Britain's power to dominate the world economy.

The pillars of Britain's global economic dominance were a highly efficient manufacturing sector, a commitment to free trade to ensure its industry had access to global markets, and

a highly developed financial sector which invested capital around the world and reaped the benefits of global economic development.

But Britain also did not hesitate to use force to open up foreign markets – for example, during the Opium Wars of the 1840s, when China was compelled to open its markets to the lucrative trade in opium from British-owned India.

By the end of the 19th century, the British empire incorporated one quarter of the world's population, providing a source of cheap labour and secure raw materials as well as a large market for Britain's manufactured goods. But that was still not enough for its avaricious leaders: Britain also made sure that local industries did not threaten its interests – by undermining the Indian textile industry, for example, and manipulating the Indian currency.

In reality, globalisation in this era was about domination of the world economy by a few rich European powers, meaning that much global economic development was curtailed to protect their interests. Under British rule between 1750 and 1900, India's share of world industrial output declined from 25% to 2%.

But for those at the centre of Britain's global formal and informal empire, such as the middle-class residents of London, this was a halcyon time – as economist John Maynard Keynes would later recall:

For middle and upper classes ... life offered, at a low cost and with the least trouble, conveniences, comforts and amenities beyond the compass of the richest and most powerful monarchs of other ages. The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole Earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep.

US model: protectionism to neoliberalism

While Britain enjoyed its century of global dominance, the United States embraced protectionism for longer after its foundation in 1776 than all other major western economies.

The introduction of tariffs to protect and subsidise emerging US industries had first been articulated in 1791 by the fledgling nation's first treasury secretary, Alexander Hamilton – Caribbean immigrant, founding father and future subject of a record-breaking musical. The Whig party under Henry Clay and its successor, the Republican Party, were both strong supporters of this policy for most of the 19th century. Even as US industry grew to overshadow all others, its government maintained some of the highest tariff barriers in the world.

Tariff rates rose to 50% in the 1890s with the backing of future president William McKinley, both to help industrialists and pay for generous pensions for 2 million civil war veterans and their dependants – a key part of the Republican electorate. It is no accident that President Trump has festooned the White House with pictures of Hamilton, Clay and McKinley – all supporters of protectionism and high tariffs.

In part, the US's enduring resistance to free trade was because it had access to an internal supply of seemingly limitless raw materials, while its rapidly growing population, fuelled by immigration, provided internal markets that fuelled its growth while keeping out foreign competition.

By the late 19th century, the US was the world's biggest steel producer with the largest railroad system in the world and was moving rapidly to exploit the new technologies of the second industrial revolution – based on electricity, petrol engines and chemicals. Yet it was only after the second world war that the US assumed the role of global superpower – in part because it was the only country on either side of the war that had not suffered severe damage to its economy and infrastructure.

In the wake of global destruction in Europe and Asia, the US's dominance was political, military and cultural, as well as financial – but the US vision of a globalised world had some important differences from its British predecessor.

The US took a much more universalist and rules-based approach, focusing on the creation of global organisations that would establish binding regulations – and open up global markets to unfettered American trade and investment. It also aimed to dominate the international economic order by replacing the pound sterling with the US dollar as the global medium of exchange.

Within a week of its entry in the second world war, plans were laid to establish US global financial hegemony. The US treasury secretary, Henry Morgenthau, began work on establishing an “*inter-allied stabilisation fund*” – a playbook for post-war monetary arrangements which would enshrine the US dollar at its heart.

This led to the creation of the International Monetary Fund (IMF) and World Bank at the Bretton Woods conference in New Hampshire in 1944 – institutions dominated by the US, which encouraged other countries to adopt the same economic model both in terms of free trade and free enterprise.

The Allied nations who were simultaneously meeting to establish the United Nations to try to ensure future world peace, having suffered the devastating effects of the Great Depression and war, welcomed the US's commitment to shape a new, more stable economic order.

As the world's biggest and strongest economy, there was (initially) little resistance to this US plan for a new international economic order in its own image. The motive was as much political as economic: the US wanted to provide economic benefits to ensure the loyalty of its key allies and counter the perceived threat of a communist takeover – in complete contrast to Trump's mercantilist view today that all other countries are out to ‘rip off’ the US, and that its own military might means it has no real need for allies.

After the war finally ended, the US dollar, now linked to gold at a fixed rate of \$35 per ounce to guarantee its stability, assumed the role as the free world's principal currency. It was both used for global trade transactions and held by foreign

central banks as their currency reserves – giving the US economy an ‘exorbitant privilege’.

The stable value of the dollar also made it easier for the US government to sell Treasury bonds to foreign investors, enabling it to more easily borrow money and run up trade deficits with other countries.

The conditions were set for an era of US political, financial and cultural dominance, which saw the rise of globally admired brands such as McDonald's and Coca Cola, as well as a powerful US marketing arm in the form of Hollywood.

Perhaps even more significantly, the relaxed, well-funded campuses of California would prove a perfect petri dish for the development of new computer technologies – backed initially by cold war military investment – which, decades later, would lead to the birth of the big-tech companies that dominate the tech landscape today.

The US view of globalisation was broader and more interventionist than the British model of free trade and empire. Rather than having a formal empire, it wanted to open up access to the entire world economy, which would provide global markets for American products and services.

The US believed you needed global economic institutions to police these rules. But as in the British case, the benefits of globalisation were still unevenly shared. While countries that embraced export-led growth such as Japan, Korea and Germany prospered, other resource-rich but capital-poor countries such as Nigeria only fell further behind.

From dream to despair

Though the legend of the American dream grew and grew, by the 1970s the US economy was coming under increasing pressure – in particular from German and Japanese rivals, who by then had recovered from the war and modernised their industries.

Troubled by these perceived threats and a growing trade deficit, in 1971 President Richard Nixon stunned the world by announcing that the US was going off the gold standard – forcing other countries to bear the cost of adjustment for the US balance of payments crisis by making them revalue their currencies. This had a profound effect on the global financial system: within a decade, most major currencies had abandoned fixed exchange rates for a new system of floating rates, effectively ending the 1944 Bretton Woods settlement.

The end of fixed exchange rates opened the door to the ‘financialisation’ of the global economy, vastly expanding global investment and lending – much of it by US financial firms. This gave succour to the burgeoning neoliberal movement that sought to further rewrite the rules of the financial world order.

In the 1980s and '90s, these policy prescriptions became known as the Washington consensus: a set of rules – including opening markets to foreign investment, deregulation and privatisation – that was imposed on developing economies

in crisis, in return for them receiving support from US-led organisations like the World Bank and IMF.

In the US, meanwhile, the increasing reliance on the finance and hi-tech sectors increased levels of inequality and fostered resentment in large parts of American society. Both Republicans and Democrats embraced this new world order, shaping US policy to favour their hi-tech and financial allies. Indeed, it was the Democrats who played a key role in deregulating the financial sector in the 1990s.

Meanwhile, the decline of US manufacturing industries accelerated, as did the gap between the incomes of those in the hinterland, where manufacturing was based, and residents of the large metropolitan cities.

By 2023, the lowest 50% of US citizens received just 13% of total personal income, while the top 10% received almost half (47%). The wealth gap was even greater, with the bottom 50% only having 6% of total wealth, while a third (36%) was held by just the top 1%. Since 1980, real incomes of the bottom 50% have barely grown for four decades.

The bottom half of the US population was suffering from a surge in 'deaths of despair' – a term coined by the Nobel-winning economist Angus Deaton to describe high mortality rates from drug abuse, suicide and murder among younger working-class Americans.

Rising costs of housing, medical care and university education all contributed to widespread indebtedness and growing financial insecurity. By 2019, a study found that two-thirds of people who filed for bankruptcy cited medical issues as a key reason.

The decline in US manufacturing accelerated after China was admitted to the World Trade Organization in 2001, increasing America's soaring trade and budget deficit even more. Political and business elites hoped the move would open up the huge Chinese market to US goods and investment, but China's rapid modernisation made its industry more competitive than its American rivals in many fields.

Ultimately, this era of intensive financialisation of the world economy created a series of regional and then global financial crises, damaging the economies of many Latin American and Asian economies. This culminated in the 2008 global financial crisis, precipitated by reckless lending by US financial institutions. The world economy took more than a decade to recover as countries wrestled with slower growth, lower productivity and less trade than before the crisis.

For those who chose to read it, the writing was on the wall for America's era of global domination decades ago. But it would take Trump's victory in the 2016 presidential election – a profound shock to many in the US 'liberal establishment' – to make clear that the US was now on a very different course that would shake up the world.

Making a bad situation more dangerous

In my view, Trump is the first modern-day US president to fully

understand the powerful alienation felt by many working-class American voters, who believed they were left out of the US's immense post-war economic growth that so benefited the largely urban American middle classes. His strongest supporters have always been lower-middle-class voters from rural areas who are not college-educated.

Yet Trump's key policies will ultimately do little for them. High tariffs to protect US jobs, expulsion of millions of illegal immigrants, dismantling protections for minorities by opposing DEI (diversity, equality and inclusion) programmes, and drastically cutting back the size of government will have increasingly negative economic consequences in the future, and are very unlikely to restore the US economy to its previous dominant position.

Long before he first became president, Trump hated the eye-watering US trade deficit (he's a businessman, after all) – and believed that tariffs would be a key weapon for ensuring US economic dominance could be maintained. Another key part of his 'America First' ideology was to repudiate the international agreements that were at the heart of the US's postwar approach to globalisation.

In his first term, however, Trump (having not expected to win) was ill-prepared for power. But second time around, conservative thinktanks had spent years outlining detailed policies and identifying key personnel who could implement the radical U-turn in US economic policy.

Under Trump 2.0, we have seen a return to the mercantilist point of view reminiscent of France in the 17th and 18th centuries. His assertion that countries which ran a trade surplus with the US 'were ripping us off' echoed the mercantilist belief that trade was a zero-sum game – rather than the 20th-century view, pioneered by the US, that globalisation brings benefits to all, no matter the precise balance of that trade.

Trump's tax-and-tariff plans, which extend the tax breaks to the very rich while reducing benefits for the poor through benefit cuts and tariff-driven inflation, will increase inequality in the US.

At the same time, the passing of the One Big Beautiful Bill is predicted to add some US\$3.5 trillion to US government debt – even after the Elon Musk-led *"Department of Government Efficiency"* cuts imposed on many Washington departments. This adds pressure to the key US Treasury bond market at the centre of the world financial system, and raises the cost of financing the huge US deficit while weakening its credit rating. Continuing these policies could threaten a default by the US, which would have devastating consequences for the entire global financial system.

For all the macho grandstanding from Trump and his supporters, his economic policies are a demonstration of American weakness, not strength. While I believe his highlighting of some of the ills of the US economy were overdue, the president is rapidly squandering the economic credibility and good will that the US built up in the postwar years, as well as its cultural and political hegemony. For

people living in America and elsewhere, he is making a bad situation more dangerous – including for many of his most ardent supporters.

That said, even without Trump's economic and societal disruptions, the end of the US era of hegemonic dominance would still have happened. Globalisation is not dead, but it is dying. The troubling question we all face now, is what happens next.

Why the world's next financial meltdown could be much worse with the US on the sidelines

Globalisation has always had its critics – but until recently, they have come mainly from the left rather than the right.

In the wake of the second world war, as the world economy grew rapidly under US dominance, many on the left argued that the gains of globalisation were unequally distributed, increasing inequality in rich countries while forcing poorer countries to implement free-market policies such as opening up their financial markets, privatising their state industries and rejecting expansionary fiscal policies in favour of debt repayment – all of which mainly benefited US corporations and banks.

This was not a new concern. Back in 1841, German economist Friedrich List had argued that free trade was designed to keep Britain's global dominance from being challenged, suggesting:

When anyone has obtained the summit of greatness, he kicks away the ladder by which he climbs up, in order to deprive others of the means of climbing up after him.

By the 1990s, critics of the US vision of a global world order such as the Nobel-winning economist Joseph Stiglitz argued that globalisation in its current form benefited the US at the expense of developing countries and workers – while author and activist Naomi Klein focused on the negative environmental and cultural consequences of the global expansion of multinational companies.

Mass left-led demonstrations broke out, disrupting global economic meetings including, most famously, the World Trade Organization (WTO) in 1999. During this 'battle of Seattle', violent exchanges between protesters and police prevented the launch of a new world trade round that had been backed by then US president, Bill Clinton.

For a while, the mass mobilisation of a coalition of trade unionists, environmentalists and anti-capitalist protesters seemed set to challenge the path towards further globalisation – with anti-capitalism 'Occupy' protests spreading around the world in the wake of the 2008 financial crash.

In the US, a further critique of globalisation centred on its domestic consequences for American workers – namely, job losses and lower pay – and led to calls for greater protectionism. Although initially led by trade unions and some Democratic politicians, this critique gradually gained purchase in radical right circles who opposed giving any role

to international organisations like the WTO, on the grounds that they impinged on American sovereignty.

According to this view, only by stopping foreign competition whose low wages undercut American workers could prosperity be restored. Immigration was another target.

Under Donald Trump's second term as US president, these criticisms have been transformed into radical, deeply disruptive economic and social policies – with tariffs and protectionism at their heart. In so doing, Trump – despite all his grandstanding on the world stage – has confirmed what has long been clear to close observers of US politics and business: that the American century of global dominance, with the dollar as unrivalled no.1 currency, is drawing rapidly to a close.

Even before Trump first took office in 2017, the US had begun to withdraw from its leadership role in international economic institutions such as the WTO. Now, the strongest part of its economy, the hi-tech sector, is under intense pressure from China, whose economy is already bigger than the USs by one key measure of GDP. Meanwhile, the majority of US citizens are facing stagnant incomes, higher prices and more insecure jobs.

In previous centuries, when first France and then Great Britain reached the end of their eras of world domination, these transitions had painful impacts beyond their borders. This time, with the global economy more closely integrated than ever before and no single dominant power waiting in the wings to take over, the impacts could be felt even more widely – with very damaging, if not catastrophic, results.

Why no one is ready to take the US's place

When it comes to taking over from the US as the world's leading hegemonic power, the only viable candidates with big enough economies are the European Union and China. But there are strong reasons to doubt that either could take on this role – notwithstanding the fact that in 2022, then US president Joe Biden's National Security Strategy called China: *"The only competitor with both the intent to reshape the international order and, increasingly, the economic, diplomatic, military and technological power to do so."*

At times Biden's successor, President Trump, has sounded almost jealous of the control China's leaders exert over their national economy, and the fact they do not face elections and limits on their terms in office. But a one-party, authoritarian political system which lacks legal checks and balances is a key reason China will find it hard to gain the cultural and political dominance among democratic nations that is part of achieving world no.1 status – despite the influence it already wields in large parts of Asia and Africa.

China still faces big economic challenges too. While it is already the global leader in manufactured goods (rapidly moving into hi-tech products) and the world's largest exporter, its economy is still very unbalanced – with a much smaller consumer sector, a weak property market, many inefficient state industries that are highly indebted, and a

relatively small financial sector restricted by state ownership. Nor does China possess a global currency, despite its (limited) attempts to make the renminbi a truly international currency.

As I found on a reporting trip to Shanghai in 2007 to investigate the effects of globalisation, there are also enormous differences between China's prosperous coastal megacities – whose main thoroughfares rival New York and Paris – and the relative poverty in the interior, especially in rural areas. But nearly two decades on from that visit, with the country's growth rate slowing, many university-educated young people are also finding it hard to find well-paid jobs now.

Meanwhile Europe – the only other contender to take the US's place as global no.1 – is deeply politically divided, with smaller, weaker economies to the east and south far more sceptical about the benefits of globalisation, and increasingly divided on issues such as migration and the Ukraine war. The challenges of achieving broad policy agreement among all member states, and the problem of who can speak for Europe, make it unlikely that the EU as currently constituted could initiate and enforce a new global world order on its own.

The EU's financial system also lacks the heft of the US's. Although it has a common currency (the euro) managed by the European Central Bank, its financial system is far more fragmented. Banks are regulated nationally, and each country issues its own government bonds (although a few eurobonds now exist). This makes it hard for the euro to replace the dollar as a store of value and reduces the incentive for foreigners to hold euros as an alternative reserve currency.

Meanwhile, any future prospects of a renewal of US global leadership look similarly unpromising. Trump's policy of cutting taxes while increasing the size of the US government debt – which now stands at US\$38 trillion, or 120% of GDP – threatens both the stability of the world economy and the ability of the US to finance this mind-boggling deficit.

Tellingly, the Trump administration shows no interest in reviving, or even engaging with, many of the international financial institutions which America once dominated, and which helped shape the world economic order – as US trade representative Jamieson Greer expressed disdainfully in the New York Times recently:

Our current, nameless global order, which is dominated by the WTO and is notionally designed to pursue economic efficiency and regulate the trade policies of its 166 member countries, is untenable and unsustainable. The US has paid for this system with the loss of industrial jobs and economic security, and the biggest winner has been China.

While the US is not, so far, withdrawing from the IMF, the Trump administration has urged it to call out China for running such a large trade surplus, while abandoning its concern about climate change. Greer concluded that the US has *"subordinated our country's economic and national security imperatives to a lowest common denominator of global consensus."*

World without a global no.1

To understand the potential dangers ahead, we must go back more than a century to the last time there was no global hegemon. By the time the first world war officially ended with the signing of the Treaty of Versailles on June 28, 1919, the international economic order had collapsed. Britain, world leader over the previous century, no longer possessed the economic, political or military clout to enforce its version of globalisation.

The UK government, burdened by the huge debts it had taken out to finance the war effort, was forced to make major cuts in public spending. In 1931, it faced a sterling crisis: the pound had to be devalued as the UK exited from the gold standard for good, despite having yielded to the demands of international bankers to cut payments to the unemployed. This was a final sign that Britain had lost its dominant place in the world economic order.

The 1930s were a time of deep political unease and unrest in Britain and many other countries. In 1936, unemployed workers from Jarrow, a town in north-east England with 70% unemployment after its shipyards closed, organised a non-political 'hunger march' to London which became known as the Jarrow crusade. More than 200 men, dressed in their Sunday best, marched peacefully in step for over 200 miles, gaining great support along the way.

Yet when they reached London, prime minister Stanley Baldwin ignored their petition – and the men were informed their dole money would be docked because they had been unavailable for work over the past fortnight.

Europe was also facing a severe economic crisis. After Germany's government refused to pay the reparations agreed in the 1919 Versailles treaty, saying they would bankrupt its economy, the French army occupied the German industrial heartland of the Ruhr and German workers went on strike, supported by their government.

The ensuing struggle fuelled hyperinflation in Germany. By November 1923, it took 200,000 million marks to buy a loaf of bread, and the savings and pensions of the German middle class were wiped out. That month, Adolf Hitler made his first attempt to seize power in the failed 'Beer hall putsch' in Munich.

In contrast, across the Atlantic, the US was enjoying a period of postwar prosperity, with a booming stock market and explosive growth of new industries such as car manufacturing. But despite emerging as the world's strongest economic power, having financed much of the Allied war effort, it was unwilling to grasp the reins of global economic leadership.

The Republican US Congress, having blocked President Woodrow Wilson's plan for a League of Nations, instead embraced isolationism and washed its hands of Europe's problems. The US refused to cancel or even reduce the war debts owed it by the Allied nations, who eventually repudiated their debts. In retaliation, the US Congress banned all American banks from lending money to these so-called allies.

Then, in 1929, the affluent American 'jazz age' came to an abrupt halt with a stock market crash that wiped off half its value. The country's largest manufacturer, Ford, closed its doors for a year and laid off all its workers. With a quarter of the nation unemployed, long lines for soup kitchens were seen in every city, while those who had been evicted camped out wherever they could – including in New York's Central Park, renamed 'Hooverville' after the hapless US president of that time, Herbert Hoover.

In rural areas where the collapse in agricultural prices meant farmers could no longer make a living, armed farmers stopped food and milk trucks and destroyed their contents in a vain attempt to limit supply and raise prices. By March 1933, as President Franklin D Roosevelt took office, the entire US banking system had ground to a standstill, with no one able to withdraw money from their bank account.

With its focus on this devastating Great Depression, the US refused to get involved in attempts at international economic cooperation. With no notice, Roosevelt withdrew from the 1933 London Conference which had been called to stabilise the world's currencies – sending a message denouncing 'the old fetishes of the so-called international bankers'.

With the US following the UK off the gold standard, the resulting currency wars exacerbated the crisis and further weakened European economies. As countries reverted to mercantilist policies of protectionism and trade wars, world trade shrank dramatically.

The situation became even worse in central Europe, where the collapse of the huge Credit-Anstalt bank in Austria in 1931 reverberated around the region. In Germany, as mass unemployment soared, centrist parties were squeezed and armed riots broke out between communist and fascist supporters. When the Nazis came to power, they introduced a policy of autarky, cutting economic ties with the west to build up their military machine.

The economic rivalries and antagonisms which weakened western economies paved the way for the rise of fascism in Germany. In some sense, Hitler – an admirer of the British empire – aspired to be the next hegemonic economic as well as military power, creating his own empire by conquering and ruthlessly exploiting the resources of the rest of Europe.

Nearly a century later, there are some disturbing parallels with that interwar period. Like America after the first world war, Trump insists that countries the US has supported militarily now owe it money for this protection. He wants to encourage currency wars by devaluing the dollar and raise protectionist barriers to protect domestic industry.

The 1920s was also a time when the US sharply limited immigration on eugenic grounds, only allowing it from northern European countries which (the eugenicists argued) would not 'pollute the white race'.

Clearly, Trump does not view the lack of international cooperation that could amplify the damaging economic

effects of a stock or bond market crash as a problem that should concern him. And in today's unstable world, for all the US's past failings as a global leader, that is a very worrying proposition.

How the US responded to the last financial crisis

Once again, the rules of the international order are breaking down. While it is possible that Trump's approach will not be fully adopted by his successor in the White House, the direction of travel in the US will almost certainly remain sceptical about the benefits of globalisation, with limited support for any worldwide economic rules or initiatives.

We see similar scepticism about the benefits of globalisation emerging in other countries, amid the rise of right-wing populist parties in much of Europe and South America – many backed by Trump. Fuelling these parties' support are growing concerns about income inequality, slow growth and immigration which are not being addressed by the current political system – and all of which would be exacerbated by the onset of a new global economic crisis.

With the global economy and financial system far bigger than ever before, a new crisis could be even more severe than the one that occurred in 2008, when the failure of the banking system left the world teetering on the brink of collapse.

The scale of this crisis was unprecedented, but key US and UK government officials moved boldly and swiftly. As a BBC reporter in Washington, I attended the House of Representatives' Financial Services Committee hearing three days after Lehman Brothers went bankrupt, paralysing the global financial system, to find out the administration's response.

I remember the stunned look on the face of the committee's chairman, Barney Frank, when he asked US Treasury secretary Hank Paulson and US Federal Reserve chairman Ben Bernanke how much money they might need to stabilise the situation:

"Let's start with US\$1 trillion," Bernanke replied coolly. "But we have another US\$2 trillion on our balance sheet if we need it."

Shortly afterwards, the US Congress approved a US\$700 billion rescue package. While the global economy has still not fully recovered from this crisis, it could have been far worse – possibly as bad as the 1930s – without such intervention.

Around the world, governments ended up pledging US\$11 trillion to guarantee the solvency of their banking systems, with the UK government putting up a sum equivalent to the country's entire yearly GDP. But it was not just governments. At the G20 summit in London in April 2009, a new US\$1.1 trillion fund was set up by the International Monetary Fund (IMF) to advance money to countries that were getting into financial difficulty.

The G20 also agreed to impose tougher regulatory standards for banks and other financial institutions that would apply globally, to replace the weak regulation of banks that had

been one of the main causes of the crisis. As a reporter at this summit, I recall widespread excitement and optimism that the world was finally working together to tackle its global problems, with the host prime minister, Gordon Brown, briefly glowing in the limelight as organiser of that summit.

Behind the scenes, the US Federal Reserve had also been working to contain the crisis by quietly passing on to the world's other leading central banks nearly US\$600 billion in 'currency swaps' to ensure they had the dollars they needed to bail out their own banking systems.

The Bank of England secretly lent UK banks £100 billion to ensure they didn't collapse, although two of the four major banks, Royal Bank of Scotland (now NatWest) and Lloyds, ultimately had to be nationalised (to different extents) to keep the financial system stable.

However, these rescue packages for banks, while much needed to stabilise the global economy, did not extend to many of the victims of the crash – such as the 12 million US households whose homes were now worth less than the mortgage they had taken out to pay for them, or the 40% of households who experienced financial distress during the 18 months after the crash. And the ramifications of the crisis were even greater for those living in developing countries.

A few months after the 2008 financial crisis began, I travelled to Zambia, an African country totally dependent on copper exports for its foreign exchange. I visited the Luanshya copper mine near Ndola in the country's copper belt. With demand for copper (used mainly in construction and car manufacturing) collapsing, all the copper mines had closed.

Their workers, in one of the few well-paid jobs in Zambia, were forced to leave their comfortable company homes and return to sharing with their relatives in Lusaka without pay.

Zambia's government was forced to shut down its planned poverty reduction plan, which was to be funded by mining profits. The collapse in exports also damaged the Zambian currency, which dropped sharply. This hit the country's poorest people hard as it raised the price of food, most of which was imported.

I also visited a flower farm near Lusaka, where Dutch expats Angelique and Watze Elsinga had been growing roses for export for over a decade – employing more than 200 workers who were given housing and education. As the market for Valentine's Day roses collapsed, their bankers, Barclays South Africa, suddenly ordered them to immediately repay all their loans, forcing them to sell their farm and dismiss their workers. Ultimately, it took a US\$3.9 billion loan from the IMF and World Bank to stabilise Zambia's economy.

Should another global financial crisis hit, it is hard to see the Trump administration (and others that follow) being as sympathetic to the plight of developing countries or allowing the Federal Reserve to lend major sums to foreign central banks – unless it is a country politically aligned with Trump, such as Argentina. Least likely of all is the idea of Trump

working with other countries to develop a global trillion-dollar rescue package to help save the world economy.

Rather, there is a real worry that reckless actions by the Trump administration – and weak global regulation of financial markets – could trigger the next global financial crisis.

What happens if the US bond market collapses?

Economic historians agree that financial crises are endemic in the history of global capitalism, and they have been increasing in frequency since the 'hyper-globalisation' of the 1970s. From Latin America's debt crisis in the 1980s to the Asia currency crisis in the late 1990s and the US dotcom stock market collapse in the early 2000s, crises have regularly devastated economies and regions around the world.

Today, the greatest risk is the collapse of the US Treasury bond market, which underpins the global financial system and is involved in 70% of global financial transactions by banks and other financial institutions. Around the world, these institutions have long regarded the US bond market, worth over \$30 trillion, as a safe haven, because these 'debt securities' are backed by the US central bank, the Federal Reserve.

Increasingly, the unregulated 'shadow banking system' – a sector now larger than regulated global banks – is deeply involved in the bond market. Non-bank financial institutions such as private equity, hedge funds, venture capital and pension funds are largely unregulated and, unlike banks, are not required to hold reserves.

Bond market jitters are already unnerving global financial markets, which fear its unravelling could precipitate a banking crisis on the scale of 2008 – with highly leveraged transactions by these non-bank financial institutions leaving them exposed.

Buyers of US bonds are also troubled by the Trump administration's plan to raise the US deficit even higher to pay for tax cuts – with the national debt now forecast to rise to 134% of US GDP by 2035, up from 120% in 2025. Should this lead to a widespread refusal to buy more US bonds among jittery investors, their value would collapse and interest rates – both in the US and globally – would soar.

The governor of the Bank of England, Andrew Bailey, recently warned that the situation has "*worrying echoes of the 2008 financial crisis*", while the head of the IMF, Kristalina Georgieva, said her worries about the collapse of private credit markets sometimes keep her awake at night.

A bad situation would grow even worse if problems in the bond market precipitate a sharp decline in the value of the dollar. The world's 'anchor currency' would no longer be seen as a safe store of value – leading to more withdrawals of funds from the US Treasury bond market, where many foreign governments hold their reserves.

A weaker dollar would also make imported goods more expensive for US consumers, while potentially boosting

the country's exports. This is precisely the course of action advocated by Stephen Miran, chair of the US president's Council of Economic Advisors – who Trump appears to want to be the next head of the Federal Reserve.

One example of what could happen if bond markets become destabilised occurred when the shortest-lived prime minister in UK history, Liz Truss, announced huge unfunded tax cuts in her 2022 budget, causing the value of UK gilts (the equivalent of US Treasury bonds) to plummet as interest rates spiked. Within days, the Bank of England was forced to put up an emergency £60 billion rescue fund to avoid major UK pension funds collapsing.

In the case of a US bond market crash, however, there are growing fears that the US government would be unable – and unwilling – to step in to mitigate such damage.

A new era of financial chaos

Just as worrying would be a crash of the US stock market – which, by historic standards, is currently vastly overvalued. Huge recent increases in the US stock market's overall value have been driven almost entirely by the 'magnificent seven' hi-tech companies, which alone make up a third of its total value.

If their big bet on artificial intelligence is not as lucrative as they claim, or is overshadowed by the success of China's AI systems, a sharp downturn, similar to the dotcom crash of 2000-02, could well occur.

Jamie Dimon, head of the US's biggest bank JPMorgan Chase, has said he is *"far more worried than other [experts]"* about a serious market correction, which he warned could come in the next six months to two years.

Big tech executives have been overoptimistic before. Reporting from Silicon Valley in 2001 as the dotcom bubble was bursting, I was struck by the unshakeable belief of internet startup CEOs that their share prices could only go up.

Furthermore, their companies' high stock valuations had allowed them to take over their competitors, thus limiting competition – just as companies such as Google and Meta (Facebook) have since used their highly valued shares to purchase key assets and potential rivals including YouTube, WhatsApp, Instagram and DeepMind. History suggests this is always bad for the economy in the long run.

With the business and financial worlds now ever more closely linked, not only has the frequency of financial crises increased in the last half-century, each crisis has become more interconnected. The 2008 global financial crisis showed how dangerous this can be: a global banking crisis triggered stock market falls, collapses in the value of weak currencies, a

debt crisis in developing countries – and ultimately, a global recession that has taken years to recover from.

The IMF's latest financial stability report summarised the situation in worrying terms, highlighting 'elevated' stability risks as a result of *"stretched asset valuations, growing pressure in sovereign bond markets, and the increasing role of non-bank financial institutions. Despite its deep liquidity, the global foreign exchange market remains vulnerable to macrofinancial uncertainty."*

I believe we may be entering a new era of sustained financial chaos during which the seeds sown by the death of globalisation – and Trump's response to it – finally shatter the world economic and political order established after the second world war.

Trump's high and erratically applied tariffs – aimed most strongly at China – have already made it difficult to reconfigure global supply chains. Even more worrying could be the struggle over the control of key strategic raw materials like the rare earth minerals needed for hi-tech industries, with China banning their export and the US threatening 100% tariffs in return (as well as hoping to take over Greenland, with its as-yet-untapped supply of some of these minerals).

This conflict over rare earths, vital for the computer chips needed for AI, could also threaten the market value of high-flying tech stocks such as Nvidia, the first company to exceed US\$4 trillion in value.

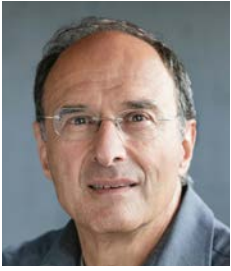
The battle for control of critical raw materials could escalate. There is a danger that in some cases, trade wars might become real wars – just as they did in the former era of mercantilism. Many recent and current regional conflicts, from the first Iraq war aimed at the conquest of the oilfields of Kuwait, to the civil war in Sudan over control of the country's goldmines, are rooted in economic conflicts.

The history of globalisation over the past four centuries suggests that the presence of a global superpower – for all its negative sides – has brought a degree of economic stability in an uncertain world.

In contrast, a key lesson of history is that a return to policies of mercantilism – with countries struggling to seize key natural resources for themselves and deny them to their rivals – is most likely a recipe for perpetual conflict. But this time around, in a world full of 10,000 nuclear weapons, miscalculations could be fatal if trust and certainty are undermined.

The challenges ahead are immense – and the weakness of international institutions, the limited visions of most governments and the alienation of many of their citizens are not optimistic signs. ■

This article is based on a two-part series originally published on The Conversation.



Rewiring trade for a warming world

Dennis Snower is Founding President of the Global Solutions Initiative; a Visiting Professor at the Institute for Global Prosperity, University College London; a Professorial Research Fellow of INET Oxford, Oxford University; an International Research Fellow of Said Business School, Oxford University; and a Non-Residential Senior Fellow at Brookings

COP30 in Belém has made one thing unmistakably clear: environmental sustainability can no longer be siloed from global trade. The next frontier in climate policy lies in reshaping the rules of international commerce so they reflect the real ecological costs – and benefits – of economic exchange.

Yet we live in a divided world, fractured not only by wealth and power but by fundamentally different value systems across generations, regions, and discount rates.

In this column, I outline how trade rules can be made responsive to environmental costs in such a context – by distributing policy authority across institutions, leveraging ‘coalitions of the willing’, and aligning finance with principles of precaution and proportionality.

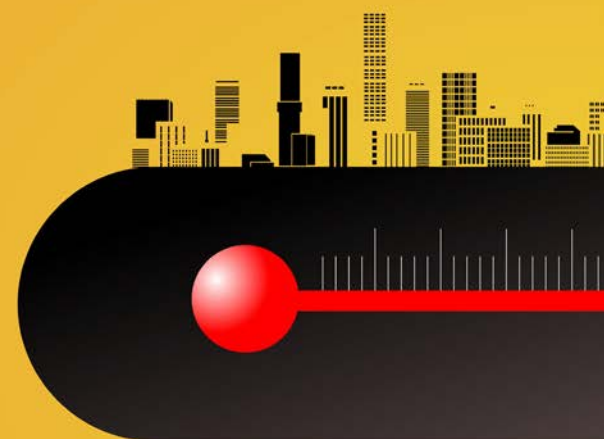
The proposals build on insights from climate economics (Stern 2007, Weitzman 2014), global governance (Hovi *et al* 2016), policy analysis under deep uncertainty (Lempert *et al* 2024), as

well as policy contributions on climate clubs, carbon pricing, and sustainable trade (eg. Campolmi 2024, Lashkaripour 2022, Snower 2022, Pisani-Ferry *et al* 2023, Weder di Mauro and Zettelmeyer 2025).

Mapping the political economy of environmental trade rules

Environmental trade measures inevitably generate winners and losers – not only across countries, but also across time. Four major divides define the problem:

1. Current versus future generations, where short-term economic interests dominate long-term ecological sustainability.
2. Rich versus poor countries, where carbon-intensive exporters fear ‘green protectionism’.
3. Politically powerful versus weaker states, where the latter struggle to shape standards.



4. High versus low discount-rate constituencies, which value environmental risks differently.

A robust trade framework must remain operational even when actors disagree about environmental costs. That requires procedural fairness, redistributive mechanisms, and adaptive governance – principles familiar to economists but still absent from trade law.

From principles to practice: institutional roles

National governments

Governments remain the central actors in implementing climate-responsive trade rules. They can:

- Conduct trade and environment impact assessments (TEIAs) that include long-term, low-discount evaluations of environmental externalities in export sectors.
- Enact border carbon adjustments compatible with WTO rules under Article XX (General Exceptions) – provided they use transparent, internationally verified emissions data.
- Earmark carbon revenues for intergenerational investment funds, similar to sovereign wealth funds but targeted at ecosystem restoration.

These measures align with the precautionary principle, ensuring trade does not cause irreversible harm before evidence is complete (Cooney 2004).

International organisations

The WTO, UNEP, and OECD can establish shared methodologies for measuring the carbon and biodiversity footprints of traded goods.

The WTO's Committee on Trade and Environment can help clarify how Article XX applies to climate-linked trade measures, reducing litigation risk.

“Trade must now serve as a channel for managing uncertainty, not amplifying it. That means institutionalising precaution, embedding redistribution, and rewarding participation in coalitions of the willing”

The World Bank and regional development banks can co-finance adjustment costs for developing countries – aligning with the ‘common but differentiated responsibilities’ (CBDR) principle.

Businesses and consumer organisations

Firms can internalise environmental costs via green certification schemes and supply chain disclosures (such as the EU's Corporate Sustainability Reporting Directive). Consumer associations can amplify these mechanisms by verifying that labels and digital product passports reflect real environmental data.

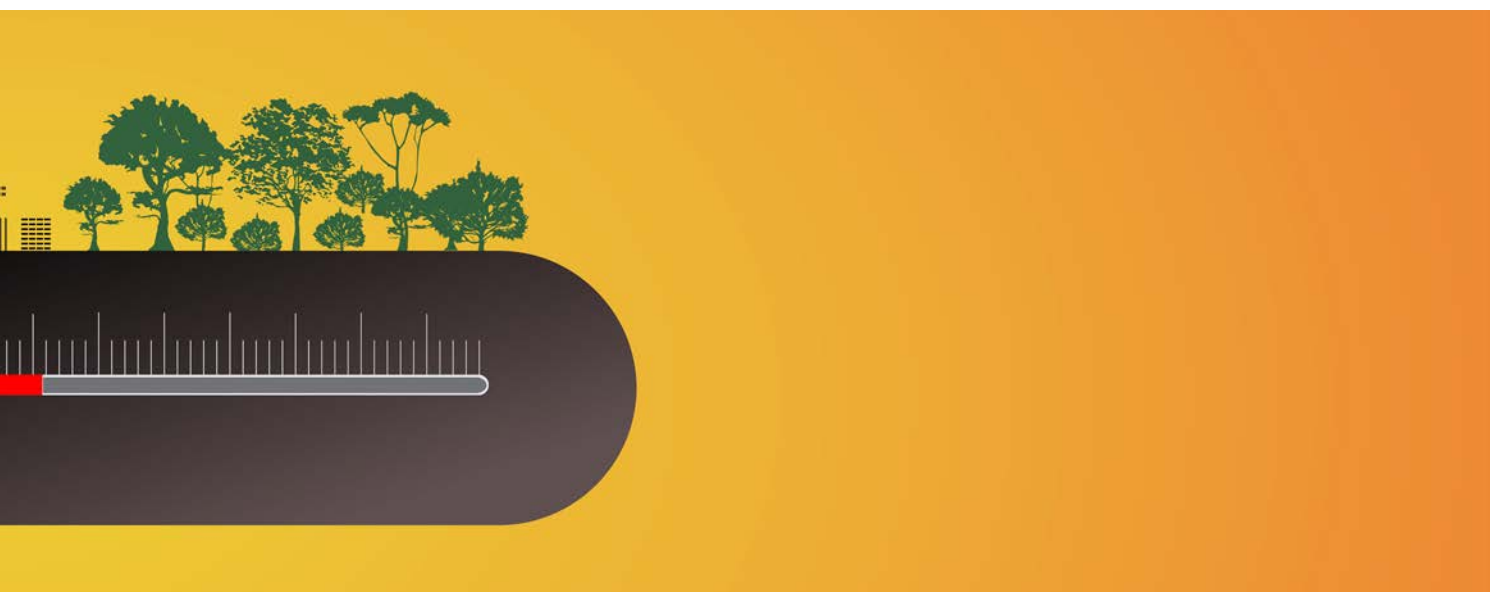
Insurers and financial institutions

Insurers and institutional investors can price environmental risk into trade finance. By linking premiums or credit spreads to carbon and biodiversity metrics, they create a financial gradient that rewards low-impact trade.

This market-driven risk adjustment aligns with Weitzman's (2014) argument that fat-tailed climate risks justify higher precautionary costs today to avoid catastrophic losses later.

The role of coalitions of the willing

Because universal agreement is improbable, coalitions of the willing – clusters of like-minded states – can pioneer climate-trade integration. Climate clubs (Hovi *et al* 2016) or sectoral alliances (eg. the Clean Energy Materials Club or the Zero Deforestation Supply Chain Coalition) can set common standards for carbon accounting, circular production, or deforestation-free trade.



These clubs can offer:

- Reciprocal trade preferences (eg. lower tariffs or procurement access for members).
- Technology-sharing agreements and joint certification systems for green exports.
- Revenue-sharing schemes, where proceeds from BCAs finance green transitions in low-income partners.

Club-like structures can overcome global coordination failures by creating credible incentives for cooperation while avoiding free-riding.

Financing the transition

Implementing climate-aligned trade policy requires new fiscal architecture:

- Carbon border revenues can be recycled into green transition funds under international supervision, with disbursement linked to measurable outcomes (emission cuts, reforestation).
- Green bonds and blended finance mechanisms can leverage private capital for exporters facing adjustment costs.
- Insurance and reinsurance pools, backed by development banks, can cover climate-related export disruptions.

This financing logic reflects Stern's (2007) insight that upfront investment in mitigation and adaptation yields long-term welfare gains – effectively treating ecological stability as capital formation.

Balancing precaution and proportionality

A recurring tension in trade governance is whether to apply the precautionary principle (restrict potentially harmful trade until

safety is proven) or to maintain the onus of proof on regulators (allow trade unless harm is demonstrated).

For climate-linked trade, the answer must be context-dependent:

- When environmental harm is irreversible (eg. deforestation, biodiversity collapse), the precautionary principle should dominate.
- When evidence is ambiguous but reversible, proportionality and due process should guide policy, ensuring restrictions are temporary, targeted, and reviewable.

This pragmatic balance is consistent with WTO jurisprudence and EU environmental law, allowing environmental ambition without violating the principle of open trade.

Towards a resilient global trade system

COP30 has reframed trade as an instrument of planetary stewardship. The challenge for policymakers is not to reach universal agreement on the exact 'price' of carbon, but to build rules that function amid disagreement – rules that redistribute fairly, evolve adaptively, and reflect long-term ecological value.

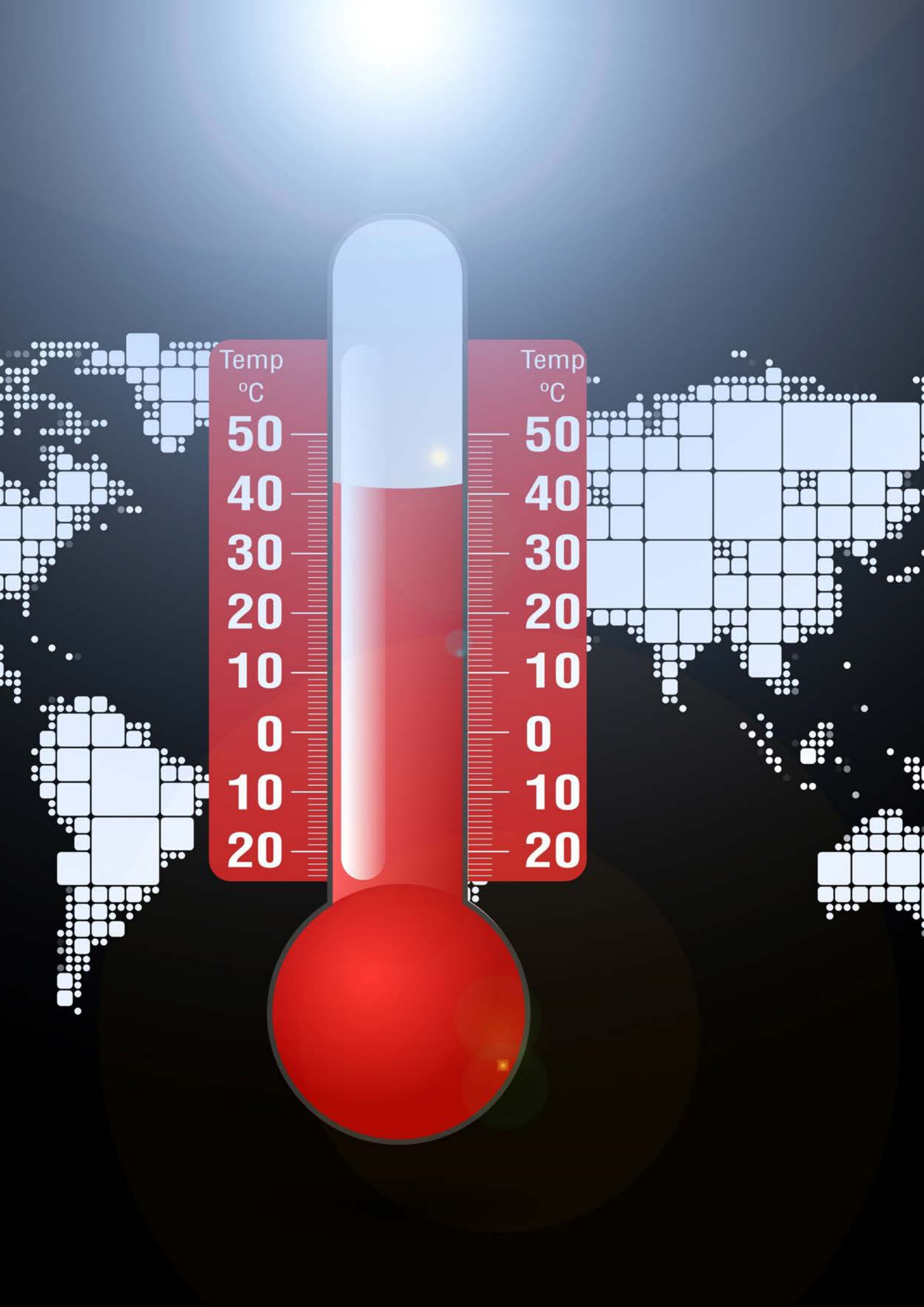
Trade must now serve as a channel for managing uncertainty, not amplifying it. That means institutionalising precaution, embedding redistribution, and rewarding participation in coalitions of the willing.

The 2026 US G20 presidency will test whether an 'America First' mindset can evolve into 'Earth First Trade' – one that recognises that in an interconnected economy, the health of global trade depends on the health of the planet. ■

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AI and central banking

Michael S Barr is Vice Chair for Supervision at the Federal Reserve

It is a pleasure to discuss the transformational nature of artificial intelligence. Like other central banks around the world, we at the Federal Reserve have been exploring the use of AI in our operations for quite some time as well as considering the implications of AI's adoption for the financial sector and the broader economy.

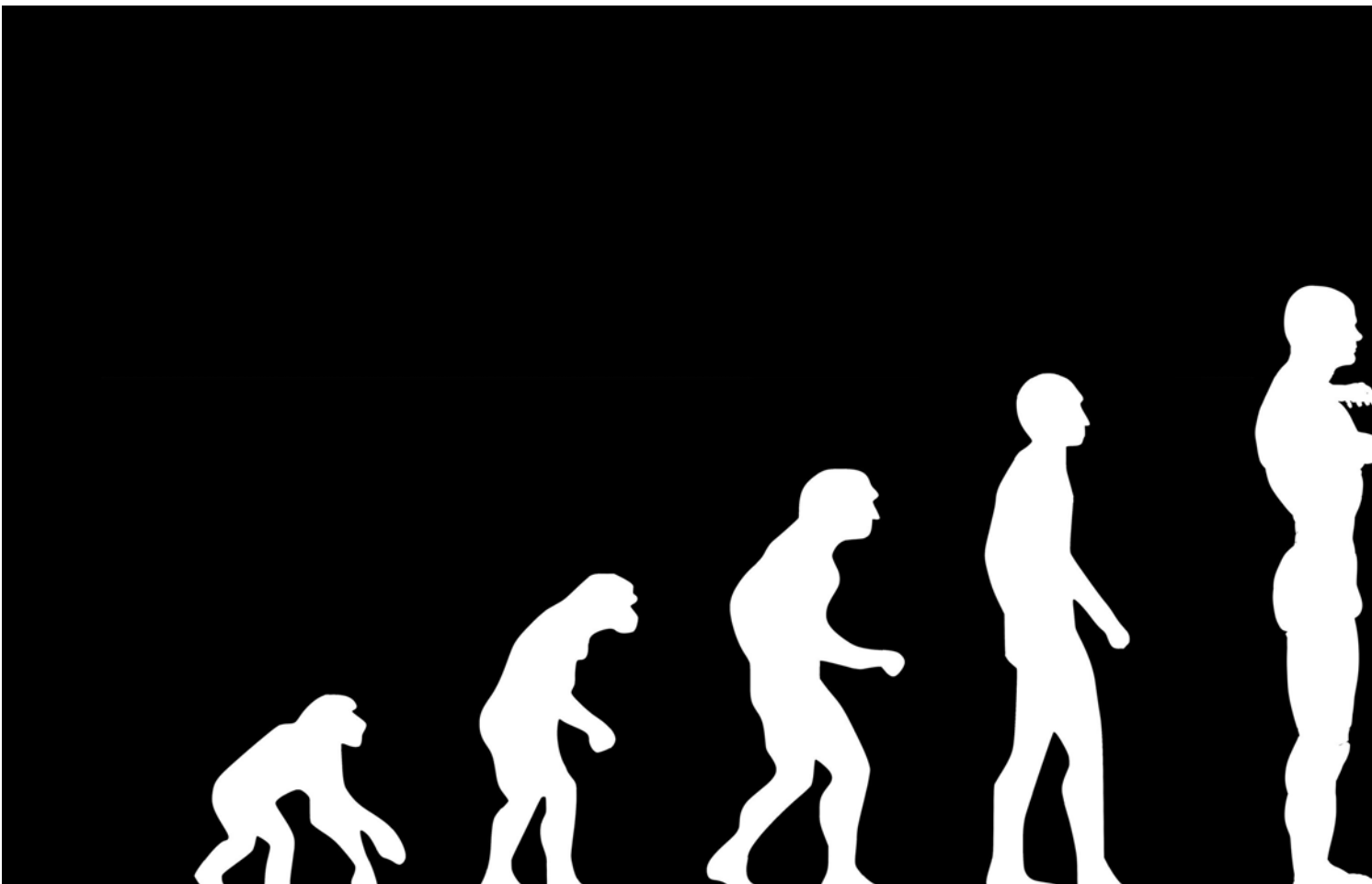
At the Fed, we've been interested in the effects of AI on the economy and its role in the financial system for decades. Remarkably, in 1997, Governor Susan Phillips delivered a speech noting the use of AI in consumer loan underwriting¹. In the past year, no fewer than seven speeches by Fed Governors have had 'AI' in the title.

I'll discuss the opportunities presented by AI relevant for central bankers as well as the risks it may pose that policymakers should consider. I will leave you with three main takeaways.

The state of AI innovation and deployment

My first main point is that while AI is a big deal that will transform economies, there are a range of outcomes for how it could do so.

AI—algorithms that mimic human thought, communication, and choices—has been with us for decades, but AI entered a new era with the launch of ChatGPT in late 2022. Generative AI (GenAI) captured our imagination with convincing



conversations in which it is possible to go deep on a wide range of topics.

Earlier forms of AI were often the bailiwick of digitally native companies, but GenAI is spreading rapidly through the economy. As of 2024, three in four large companies were using GenAI, though some report it has yet to improve their bottom line².

Smaller companies have been slower to adopt GenAI, with adoption rates reported in the high single digits, albeit with a high degree of heterogeneity among sectors. Also, one could surmise, based on other surveys of individuals, that work-related use is more widespread among employees than their CEOs realise³.

A recent survey by the Federal Reserve Bank of New York showed that firms plan to retrain their workforces to take advantage of AI to enhance productivity, with widespread layoffs limited⁴. But survey respondents also report that AI has led firms to scale back hiring, a development that may be contributing to the recent low levels of job creation in the US economy, a concern for many workers and particularly for newer entrants to the job market.

Taking a step back, as I have noted in the past, I see two basic scenarios for how AI can transform the economy⁵. In the first scenario, there is incremental adoption of GenAI that augments existing tasks and jobs.

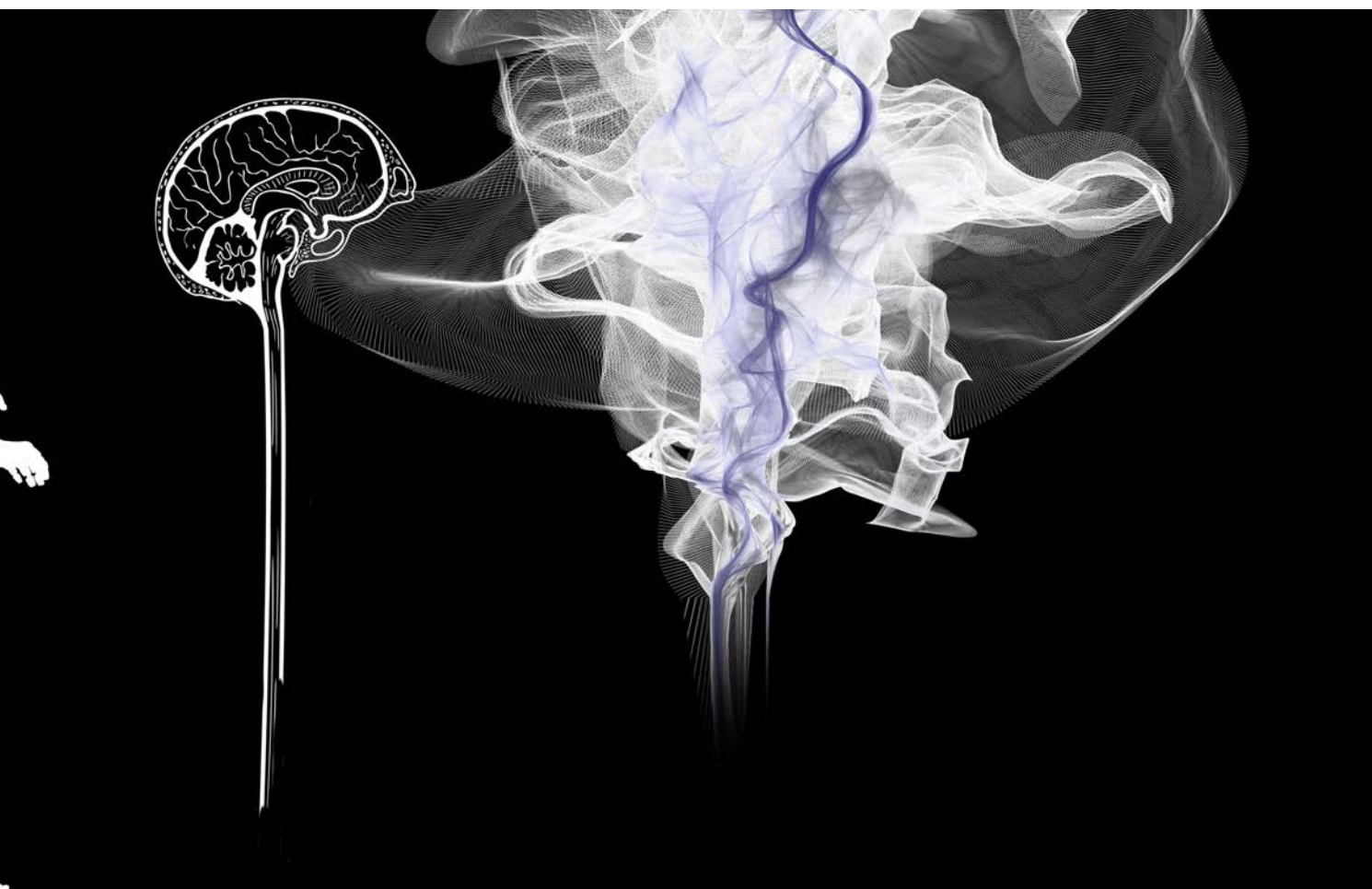
“AI has the potential to fundamentally change the economy and society. And as central bankers, we need to keep up”

In the second scenario, a revolution occurs. GenAI transforms the nature of work and leisure, boosting the efficiency of research and development, remaking industries, and creating firms with new—perhaps radically new—business models.

Right now, it is difficult to predict which scenario (or perhaps one or more intermediate scenarios) will come to pass.

We can already see incremental change as GenAI is increasingly integrated with standard workplace software. With its natural language interface, GenAI is inherently user friendly, so few workers need special skills or unusually onerous training to use it. At the same time, some start-ups have a more revolutionary flavour because they are centred on AI from the outset.

One indicator of how the labour market is evolving toward deeper integration with AI is the skills mentioned in job postings. While overall the share of job listings that mention AI-related skills is small—about 5 percent—in the information sector, it is about 20 percent. The financial sector, where firms



are always looking for a technological edge, is not far behind, with 1 in 10 job postings mentioning AI⁶.

So we can see that the skills needed in some key sectors are already changing. The speed of that change is likely to increase. If the AI changes happen gradually, workers and firms will have time to adjust, but if they happen rapidly, there may be significant dislocations in the short term.

A massive wave of data centre investment has begun, pointing to signs of confidence among leading AI companies that the use of AI at scale throughout the economy is just around the corner. If they're right and AI is useful enough to keep what is currently projected to be \$3 trillion of new data centre capacity utilised effectively, we can expect significant changes in economies.

Investment in capital generally raises labour productivity and offers the potential for higher output growth without pressure on inflation over the longer term. As I have discussed in previous remarks, if these changes are significant, they can also affect the conduct of monetary policy⁷.

Of course, it may be the case instead that investment exceeds short-term demand, in which case there may be losses and adjustments to the AI sector.

AI and the financial sector

The second key point I would like to make is that the financial sector is adopting AI quickly, and while there are many benefits to this adoption, the risks will need to be managed carefully.

So far, AI adoption in the financial sector appears to be most concentrated in areas that can enhance operational efficiency, including applications that involve text analysis, classification, and information search inside the firm, as well as customer-facing functions.

These incremental improvements to common business functions are a key reason to be hopeful about AI raising labour productivity in that sector.

At the same time, there is significant investment in experimentation with AI for core functions for financial services. Data-driven financial-sector-specific tasks, including credit decision support, fraud detection, and trading are using AI-specific tools. Ensuring that AI is used appropriately for these functions faces appreciable challenges.

First, the amount of organisational change needed by financial services firms to utilise GenAI may be substantial. History suggests progress may be slow. Adoption of machine learning, an AI technology that preceded GenAI, was concentrated in firms that were highly digitised from their founding—and even in those cases, adoption was a long process⁸.

Fintech firms organised to exploit AI from their founding can play a key role in driving efficiency forward in the sector, providing services to the incumbent firms⁹. But productivity may even decrease in the short term, as heavy investments

in business-process improvements take time to play out to productivity gains.

A second challenge is the practical constraints of rushing into AI for core business activities in the financial sector, as firms need to ensure that the resulting processes and outcomes are consistent with relevant laws and appropriate risk management. Large institutions are exploring the use of GenAI, including agentic AI, in their financial models—but doing so requires care.

To successfully leverage the potential of GenAI on a sustainable basis, decisions based on those models must be well controlled, numerically and legally precise, explainable, and replicable. AI developers still struggle to some extent with all of those criteria. We need to reduce the risk that AI reinforces biases in consumer lending.

And we also need to guard against the risks that could result from the use of AI in financial markets. For example, profit maximisation by AI-powered trading algorithms may result in tacit collusion, market manipulation, or trading strategies that result in significant market volatility or even systemic risk¹⁰.

We will need innovation that is responsive to these risks to see additional advances in the use of AI for a broad array of core financial services functions.

AI and central banking

A third and final point I would like to leave you with is that central banks, including the Fed, need to keep up with AI by increasing our speed of adoption for our own operations.

The nature of central banking work is inherently careful, considered, and measured when evaluating anything new. This is particularly true for any new technologies¹¹. But it seems clear already that the many advantages offered by AI could assist central banks in at least some of their operations, and the speed at which this technology is moving makes it appropriate to proactively engage in using AI for our own operations.

That is why the Federal Reserve is using AI, where appropriate, to increase staff efficiency and effectiveness. My view is that GenAI is a transformative technology that central banks need to remain engaged with to ensure an ability to execute as technology evolves.

As we push ahead on efficiency gains, it is important that we leverage the right tools for the task at hand, recognizing that GenAI is not always the best choice. Some of the challenges that we face can be addressed by robotic process automation or traditional AI methods. These are the same kinds of questions that every business and organisation considering AI should be weighing.

At the Federal Reserve, we have focused on ensuring we can leverage AI capabilities by establishing an AI program and governance framework for the use of AI technologies¹². We are taking an enterprise-wide approach of learning-by-doing and broadly adopting high-value uses of GenAI, such as writing, coding, and research activities.

We have taken a 'hands on keys' approach to having staff engage with it. We are identifying the business processes that can be improved and transformed with the technology.

One internal application of GenAI I am particularly excited about that helps us achieve all these goals is technology modernisation. We are applying GenAI-enabled tools within clear guardrails to translate legacy code, generate unit tests, and accelerate cloud migration.

So far, the result of this usage is faster delivery, improved quality, and enhanced developer experience. And it will likely mean better outcomes in support of the American people.

Given AI's current and prospective role in economic activity, we are devoting the necessary resources to understanding it,

including by analysing not only AI's economic and financial implications, but also exploring how AI can enhance our financial stability work, strengthen supervisory and regulatory capabilities, and ensure the smooth functioning of our payment systems.

These are just some of the ways that the Fed, like other organisations, is using AI to make us more productive and capable. These efforts may also help us understand the effect of AI on the economy, the banking system, and the payment system.

That task will be a major job for central banks in the years ahead. AI has the potential to fundamentally change the economy and society. And as central bankers, we need to keep up. ■

Endnotes

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3. On adoption by large firms, see McKinsey & Company (2025), "The State of AI: Agents, Innovation, and Transformation," November 5. On adoption by smaller firms, see the Business Trends and Outlook Survey from the US Census Bureau, which is available on its website. On adoption by individuals, see Alexander Bick, Adam Blandin, and David J Deming (2024), "The Rapid Adoption of Generative AI," Working Paper Series 32966 (Cambridge, Mass.: National Bureau of Economic Research, September; revised February 2025).
4. See Ben Hyman, Jaison R Abel, Natalia Emanuel, Nick Montalbano, and Richard Deitz (2025), "Are Businesses Scaling Back Hiring Due to AI?" Federal Reserve Bank of New York, Liberty Street Economics (blog), September 4. Other surveys have shown similar results; see, for example, Jeremy Korst, Stefano Puntoni, and Prasanna Tambe (2025), "Accountable Acceleration: Gen AI Fast-Tracks Into the Enterprise (PDF)," 2025 Report, October 29.
5. See Michael S Barr (2025), "Artificial Intelligence: Hypothetical Scenarios for the Future," speech delivered at the Council on Foreign Relations, New York, February 18.
6. Job-posting statistics are based on the classification by Lightcast and are calculated using the methodology developed in Daron Acemoglu, David Autor, Jonathon Hazell, and Pascual Restrepo, "Artificial Intelligence and Jobs: Evidence from Online Vacancies," *Journal of Labor Economics*, vol. 40 (April), pp. 5293–340. Data are available by subscription from Lightcast.
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10. The most recent Financial Stability Report is available on the Federal Reserve Board's website.
11. A report from the Bank of International Settlements notes that central bankers have the prospect of improving data quality, enhancing operations, and improving decision-making with the use of AI and provides a framework for considering questions of governance and risk management when doing so; see Bank of International Settlements (2025), "Governance of AI Adoption at Central Banks (PDF)," January.
12. See the "Board of Governors of the Federal Reserve System Compliance Plan for OMB Memorandum M-25-21."

The views expressed here are my own and are not necessarily those of my colleagues on the Federal Reserve Board or the Federal Open Market Committee. This article is based on a speech delivered at the Singapore Fintech Festival, Singapore, November 11, 2025.





How financial authorities should tackle AI challenges

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Artificial intelligence differs from other technological advancements in finance, such as the initial adoption of computers and automatic trading systems. As Norvig and Russell (2021) note, AI is a rational maximising agent, one that not only analyses and recommends but also makes decisions.

Even though many would wish to, the financial authorities cannot slow down the move towards autonomous AI systems in the private sector, nor should they persist in demanding features such as explainable models that reflect pre-AI concerns. Banks that deploy AI gain an immediate competitive advantage, forcing their competitors to follow while leaving the supervisors no choice but to go along.

The financial authorities are in an AI 'arms race' with the private sector – one they currently seem set to lose. This increases the risk of an ineffective supervisory structure and costly financial crises. Our research (Danielsson *et al* 2023, Danielsson and Uthemann 2025) examines how AI affects systemic risk and the effectiveness of financial regulation. We build on that work here, focusing both on the operational realities that face the financial authorities and how they can best respond.

How AI affects the financial authorities

The financial authorities face a difficult dilemma. The same AI that helps them in executing their mission also undermines their control. At the micro-level, AI excels at finding regulatory arbitrage and designing pricing algorithms that master price



discrimination or even abuse. Technically, this AI might comply with the authorities' rules, but in ways they might not find palatable. Existing approaches for preventing abuse might be inadequate to meet challenges from AI.

AI helps those intent on exploiting and damaging the financial system, whether criminals and terrorists or hostile nation states. Those attackers need only one successful breach, whereas the defenders must guard the entire system. We call this the 'defender's dilemma', and it can only get worse with time.

AI creates risks that current monitoring frameworks miss. When AI takes over critical functions, most importantly, liquidity management, it is likely that extant systemic risk dashboards based on past performance and practices will not detect new forms of emergent risks.

Ultimately, AI gives rise to wrong-way risk when the risk it creates is the highest at times when we have the greatest exposure to that risk factor.

AI crises

Financial crises occur when banks shift from maximising profits to survival, the *one-in-a-thousand-day problem* discussed in Danielsson (2024). Speed is always of the essence, as the first bank to act decisively in a crisis is the most likely to survive, while the laggards face massive losses and even bankruptcy.

AI accelerates the speed of crises through its unmatched capacity to monitor the system, evaluate strategic alternatives and execute complex decisions at a speed no human can match. When a shock occurs, the AI engines rapidly parse vast streams of market, macroeconomic, political and competitor data, updating forecasts and adjusting positions.

This speed advantage means that by the time supervisors register an abnormal market move, significant shifts in liquidity or asset pricing may already have taken place. There is a significant competitive advantage in acting quickly, as the first to react to a shock minimises losses, while the last faces significant losses and even bankruptcy.

Strategic complementarities arise when AI engines monitor and react to one another's visible market footprints. When one system moves in response to stress, others may interpret it as confirming evidence and adjust accordingly.

The result is self-reinforcing action across institutions, creating a rapid convergence of behaviour even without direct coordination. This is not illegal, and there is nothing the authorities can do to prevent this behaviour.

Similarity in AI design and operation reinforces this tendency towards synchronisation. Many, if not most, private sector institutions procure systems from the same small set of vendors, train them on overlapping datasets and optimise for comparable objectives.

“AI accelerates the speed of crises through its unmatched capacity to monitor the system, evaluate strategic alternatives and execute complex decisions at a speed no human can match”

The combined effect is to compress the timeline of crises. Events that once unfolded over days or weeks can now play out in minutes or hours, leaving almost no window for policy intervention.

While such systems smooth out minor fluctuations in calm markets, their tendency towards rapid, coordinated action under stress increases the probability and severity of extreme market moves. This dynamic lowers observed day-to-day volatility but produces a fatter-tailed distribution of outcomes.

Supervision

The fundamental motivation for regulating the financial system is to align the interests of the private sector with society. In technical language, this is a principal-agent problem, where the principal (the supervisor) seeks to make the agent (the financial institution) act in the interest of society.

That relationship changes with AI, as the one-sided principal-agent problem becomes two-sided: principal-agent-AI. The supervisors seek to control the behaviour of banks, while both must control their AI. Unfortunately, the way we now incentivise – the carrots and sticks inherent in the supervisory structure – does not work with AI.

In effect, the supervisors’ traditional levers of incentives, penalties and reputational pressure lose traction when key decisions are delegated to autonomous systems.

Banks cannot effectively explain how AI works, nor how it makes decisions. Meanwhile, the supervisors cannot effectively regulate algorithms to which penalties, reputational damage and bonus clawbacks mean nothing.

Ultimately, this implies that the current slow and deliberate human-centred control system is ill-suited to controlling a far more agile AI system.

AI brings new challenges in accountability. It is already very difficult to hold individual bankers accountable. That becomes even harder as AI use proliferates, creating new avenues for those intent on exploiting the system for private gain.

Policy responses

The authorities cannot outpace the private sector, but they can narrow the gap. To begin with, they need to develop their

own AI capabilities directly within the operational functions of the authorities. Financial stability, monetary policy and supervision should take the lead on AI in their organisations, and not leave it to auxiliary divisions such as IT, data or innovation.

One challenge is the implementation of AI engines. The authorities are justifiably reluctant to use commercial systems, especially from vendors in foreign jurisdictions, as there is a significant chance of data leakage and confidentiality violations. The alternative is to develop their own internal engines, either directly or by using open-source engines.

While seemingly attractive, we suspect that most authorities will find it difficult, if not impossible, to allocate the necessary financial and human capital resources to set up their own engines to match the capabilities of private-sector systems.

The vast middle ground might be engagement with vendors in the local jurisdiction to set up high-quality AI engines for authority purposes. Doing this in the local jurisdiction is important as it allows the authority to exercise the necessary control.

The financial system is global, but the authorities operate within narrow and jealously guarded silos. Here, AI can help. Authorities across multiple jurisdictions could set up a single AI engine for a common purpose and to meet global challenges. However, restrictions on data sharing preclude doing that today.

The authorities can leverage a technique called federated learning: training takes place locally inside each authority and on data it controls, while only model weights are shared. Federated learning allows authorities to train a shared model across jurisdictions without sharing the underlying data.

Since consequent neural networks are significantly over-parameterised and the result of optimisation across multiple jurisdictions, there is practically no way to reverse the engine weights onto individual data points. This protects confidentiality while enabling collective intelligence.

Furthermore, AI creates new ways for real-time supervision. It is technically straightforward to set up direct AI-to-AI communication links (known as API interfaces) that allow the authority AI to communicate directly with the private-sector AI so that it can test responses and benchmark regulations.

These ideas build on early experiments in interactive stress testing, such as the Bank of England’s 2024 ‘system-wide exploratory scenario’, which incorporated interactive elements that allowed participants to adjust strategies in response to emerging conditions during the simulation.

Fast crises require fast responses, and current crisis-intervention facilities are likely to be too slow. This suggests that the authorities should set up automated facilities to pre-empt a crisis, perhaps to release liquidity at the same time that private-sector AI contemplate whether to run in response to an external shock.

Finally, the authorities should keep track of AI use in their monitoring frameworks. Directly identifying AI adoption at a divisional level in the private sector (such as risk management, credit and treasury functions) is a fruitful avenue. This would include the type of AI engines used, how they are trained and where they are procured from.

This same framework should also monitor vendor concentration, since dependence on a small set of providers increases the risk of synchronised behaviour during stress.

Conclusion

The financial authorities find it difficult to meet challenges arising from AI. If they proactively engage with AI, the

authorities can markedly improve the supervisory process and stabilise the financial system. If they do not, the likely outcome is more misbehaviour, fraud, instability and financial crises.

Unfortunately, much of the authorities' public discussion of the impact of AI on the financial system does not seem to engage with the most important threats arising from AI. Instead, much of their AI policy analysis appears to remain grounded in traditional, pre-AI methodological approaches.

Ultimately, the effectiveness and stability of the financial system depends on whether the authorities can master the same AI technologies that already are revolutionising the way private-sector firms operate. ■

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A threat to financial stability

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The multi-issuer model for cryptoasset stablecoins poses significant financial stability risks and regulatory challenges for the EU. In such a model, an Electronic Money Token (EMT) — a stablecoin — is jointly issued by both an EU-regulated institution and one or more third-country entities.

This arrangement was not foreseen and not explicitly regulated under the EU legislation governing stablecoins, the Markets in Crypto-Assets Regulation (MiCAR), applicable from mid-2024.

There are thus substantial ambiguities which issuers can exploit. These stablecoins – deemed fungible across jurisdictions – facilitate regulatory arbitrage, fragment reserve management, and potentially expose EU issuers and their banking partners to systemic stress, redemption runs, and contagion. Hence regulatory reforms are needed urgently. The urgency is heightened by the passage of the American stablecoin-enabling GENIUS Act in July 2025.

In this column, we provide a framework for understanding and mitigating the multi-issuer stablecoin (MISC) loophole — a gap which, if left unaddressed, could have far-reaching consequences for EU financial stability and investor protection. We advocate prompt legal and supervisory adaptation to ensure MiCAR meets the realities of a globalised crypto-finance landscape.

We first explain the model and the regulatory background, then provide a technical and legal risk assessment. We highlight the need for a robust EU-level regulatory and supervisory response, bespoke prudential standards, explicit crossborder arrangements, and greater harmonisation at the global level.

The multi-issuer model and its risks

Stablecoins are supposed to maintain a stable value, pegged to an official currency or a basket of assets. They are meant to be backed by reserves in the form of high-quality liquid assets (EU and US requirements are somewhat different). The design is not entirely robust: there are multiple instances in which key stablecoins have ‘broken’ their pegs under stress; and there is significant everyday volatility for the major stablecoins, USDT and USDC, around the \$1 peg.

A multi-issuer arrangement arises when a stablecoin is issued in multiple jurisdictions by different legal entities with the same controlling interest — for example, a European subsidiary and a US parent or affiliate issuing ‘the same’ token. These tokens are treated by the issuer and the holders as interchangeable (fungible), regardless of the regulatory framework.

For intra-EU issuance, joint liability is clear and fully subject to rules under MiCAR. In a crossborder framework, with issuance in the EU and a third country, the fungibility of tokens muddles accountability, as an EU entity may be responsible for redemptions originally claimed from a non-EU affiliate, over which it has neither legal nor operational control (Figure 1). But there is no explicit provision in MiCAR for third-country crossborder co-issuance, although issuers market multi-issuer stablecoin tokens as fully fungible, regardless of the original jurisdiction.

This model poses significant prudential and regulatory issues. First, the reserves backing the stablecoin are fragmented. When the same stablecoin is issued by both EU and non-EU entities, reserve assets are split and managed under different regulatory regimes, with no guarantee the reserves held in the third country will be available for attempted redemptions in the EU in stress episodes.

EU law requires prompt, cost-free redemption at par by EU issuers. But the third-country issuer may apply fees or delays. And in a crisis, the third-country authorities might ‘ringfence’ (withhold) locally held reserves, jeopardising redemptions in the EU.

This national ringfencing of liquidity was observed within the EU itself during the crises of autumn 2008 and spring 2020, despite the supposedly ironclad legal prohibition of capital flow barriers within the EU.

The multi-issuer stablecoin model therefore raises major macroprudential issues. First, there would be clear incentives to run in a stress episode. Regulatory arbitrage enables stablecoin holders to redeem preferentially in the jurisdiction offering the most favourable terms, likely the EU. This increases the likelihood of a run, especially if holders (correctly) perceive the inadequacy of EU-held reserves to meet redemptions.

Second, there might be contagion to and across banks. If a run on an EU stablecoin issuer occurs, and the issuer is a credit institution, direct contagion may affect the bank. For e-money institutions (EMIs), large, required reserves (eg. 30% or 60% deposited with EU banks for (non-significant issuers) mean that redemptions could strain the liquidity positions of associated banks, especially those with concentrated exposure to cryptoasset players.

The risk is heightened by the likely development of ‘crypto-friendly’ banks: with no overall cap on the aggregate stablecoin-related liability any one bank can have, the rise of banks heavily reliant on crypto sector funding is likely, amplifying systemic risk. The fragility of this funding and the consequent systemic risk were observed in the US mini-crisis of March 2023 (Silicon Valley Bank, Signature Bank, Silvergate Bank), which required major intervention by the federal authorities (Admati *et al* 2023).

There is a significant likelihood of circumvention of EU safeguards and regulatory arbitrage. Foreign-issued tokens under a multi-issuer arrangement may exploit favourable EU rules (eg. par redemption, absence of fees, market prominence), while not being subject to EU-level reserves, risk management, or supervisory scrutiny.

The risk is exacerbated by the difficulty of tracking the effective volumes of tokens in circulation within the EU and abroad, especially for those held in off-chain wallets. Thus, requirements designed to mitigate financial stability and policy risks (eg. issuance caps for foreign currency electronic money tokens, enhanced oversight at critical thresholds) become difficult to uphold.

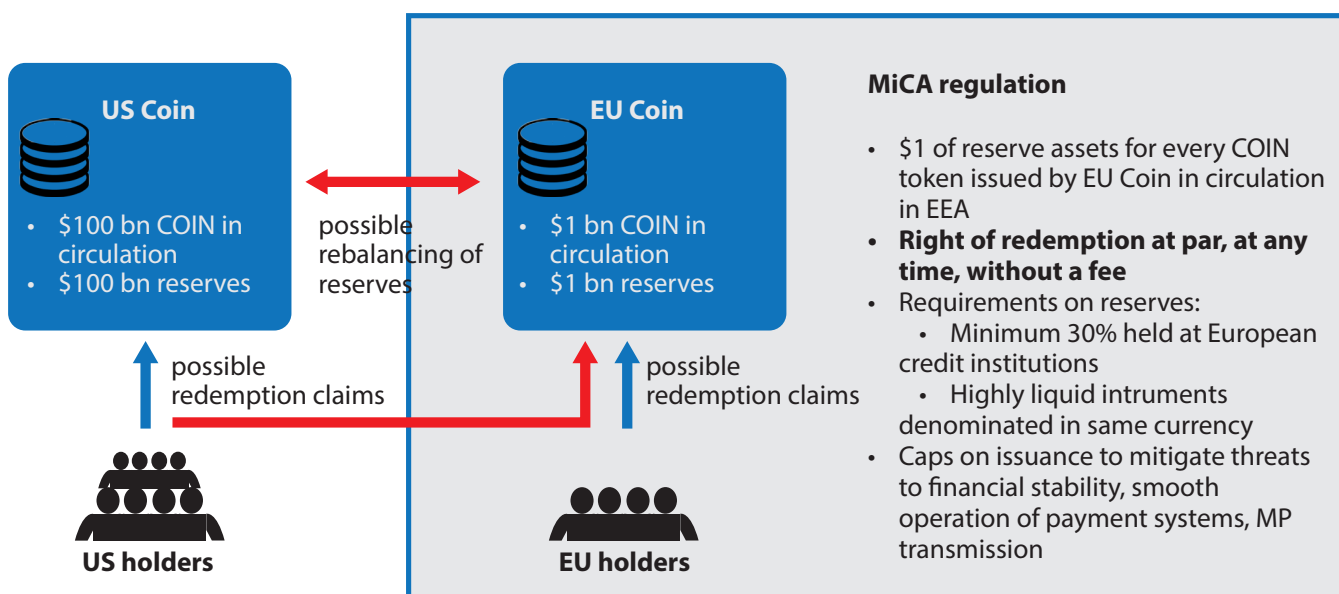
“The multi-issuer model introduces critical vulnerabilities into the EU financial system, undermines MiCAR’s single-market protections, and exposes EU issuers to liabilities and operational risks beyond their control”

Note that there is an incentive to hold stablecoins in the US: although the GENIUS Act prohibits paying interest on stablecoins, there is a way around this via cryptoasset service providers which can hold the stablecoins and pay interest to the owner.

The multi-issuer stablecoin scheme does not provide the necessary investor protection, one of the main objectives of MiCAR. Investors may be led to believe an ‘EU-branded’ stablecoin carries full EU protections when part of the token stock is issued outside the EU and not subject to MiCAR.

Moreover, supervisory reach is limited, especially because EU supervisors lack control over third-country assets or operations yet may have to take actions with respect to redemptions from holders who have acquired tokens from third-country issuers. This is a sharp deviation from standards in classical banking regulation.

Figure 1. Illustrative example of an EU and third-country stablecoin multi-issuer model applied to the EU and US



Notes: The diagram conceptualises the flow of reserves and redemption claims between an EU and a US stablecoin issuer. It highlights how tokens can move and be redeemed in either jurisdiction, while underlying reserves remain subject to two regulatory and supervisory silos, increasing the risk of misalignment in crises. Source: ESRB, Report on stablecoins, crypto-investment products and multi-function groups, October 2025.



EU regulators have no control over the marketing practices of third-country issuers, which might misrepresent redemption arrangements and links to the EU-based issuer. That then poses reputational risks for the EU authorities. The model sets a precedent for non-EU issuers to access the EU single market while evading regulatory obligations, making the EU vulnerable to international regulatory arbitrage.

While EU supervisors cannot oversee non-EU risk management, they would de facto be tasked with maintaining the solvency and liquidity of all tokens, a legal and prudential stretch never tolerated in the traditional crossborder banking world.

There are several issues regarding reserve allocation and the operational hurdles to running a multi-issuer stablecoin scheme. First, the rebalancing mechanism. For the system to work, reserve assets must be transferable in both directions between the EU and non-EU issuers to fulfil redemptions as they arise. This is only as effective as the underlying legal and operational frameworks and the ability to move funds promptly — often unreliable, especially under stress.

Where reserves are invested in third-country money market funds, as permitted under the GENIUS Act, redemption can be frozen by local authorities, further weakening the reliability of crossborder pools. The most acute risk, therefore, is having a liquidity shortfall locally due to operational, legal, or market blockages in moving assets crossborder.

Second, we lack reliable data on where tokens are held, due to the prevalence of self-hosted wallets (44% for Circle USDC as of February 2025) and limited reporting from non-EU crypto providers. This leads to large judgment calls in stress testing and risk modelling for EU supervisors.

The actual exposure of the EU issuer is unknown; estimates of 'EU-circulating' supply are only lower bounds, reducing confidence in reserve adequacy and crisis planning. Limited knowledge of self or omnibus wallet holders means redemption behaviour is unpredictable, raising the risk of unanticipated runs.

Arbitrage opportunities would arise if the coin were trading below par in one jurisdiction and could be redeemed at par and for free in the EU, inviting profit-seeking redemptions during even minor price declines — a classic 'run' scenario. The MiCAR ban on redemption fees amplifies this incentive.

Legal and supervisory considerations

Crossborder multi-issuer schemes entirely within the EU are governed by MiCAR, which grants national competent authorities latitude under Article 35 (own funds requirements), Article 45(4) (liquidity enhancements post-stress testing), and Article 94(1)v (broad preventive powers), enabling strengthened buffers for at-risk institutions. Increases to own funds requirements would have legal precedent: for example, a 20% uplift for non-significant issuers and a 20–40% increase for significant ones, based on stress test findings, risk outlook, and redemption guarantees.

The European Banking Authority (EBA) can take into account considerations relating to multi-issuance. If the token is 'significant', it is subject to EU-level oversight, which facilitates crossborder coordination and a level playing field. But classification is hindered by incomplete or contested data about token distribution and reporting inadequacies by Crypto Asset Service Providers (CASPs).

Still, supervisors may revoke authorisations, impose redemption fees, or limit redemptions in an emergency, provided they meet the MiCAR flexibility requirements.

Policy options and recommendations

There is a wide range of policy options available to the EU authorities for dealing with the specific risks posed by multi-issuer stablecoins. The first would simply be to ban them, as the European Systemic Risk Board has recommended. Against this, there has been considerable lobbying pressure in Brussels from well-funded issuers.

But some key members of the European Parliament have resisted and have written to Commissioner Albuquerque setting out their concerns. And President Lagarde of the



European Central Bank has forcefully expressed her opposition to multi-issuer stablecoins (Lagarde 2025). At the time of writing, the European Commission had not set out its final position.

If the Commission deems that under existing legislation, multi-issuer stablecoins are permissible, then they could propose amendments to MiCAR to cover multi-issuer schemes explicitly and lay out a framework for cross-jurisdiction equivalence, reciprocity, and asset ringfencing protections.

Meanwhile, macroprudential authorities should intensify scrutiny and systemic risk analysis of multi-issuer schemes. The authorities could require EU stablecoin issuers engaged in multi-issuer arrangements to set high minimum denomination amounts, or limit issuance if the ECB identifies payment systems or monetary policy risks. They could impose higher own-funds or stricter liquidity requirements based on stress-testing outcomes whenever reserve sufficiency is in doubt.

Enhanced disclosure obligations for issuers would be desirable, with the European Securities Markets Authority (ESMA) providing whitepaper disclosure templates detailing the structure, risks, and reserve-management specifics of any multi-issuer token. These should be strengthened, with harmonised reporting standards for cryptoasset service providers and issuers, both inside and outside the EU, to map accurate token distribution and calibrate policy.

Ideally, the authorities should develop enforceable global regulatory standards in coordination with Financial Stability Board (FSB) guidance and robust cooperation agreements to ensure liquidity flows and consistent application of prudential rules, even during crises. And within the EU, national competent authorities (NCAs) should coordinate, but not in a decentralised way — an EU-level approach is judicially and practically more robust.

Decentralised equivalence assessments (by each NCA) create the risk of fragmentation, a practice the European Commission would not tolerate in other areas of financial regulation. The European Banking Authority or European Securities Markets Authority should lead here.

The multi-issuer model introduces critical vulnerabilities into the EU financial system, undermines MiCAR's single-market protections, and exposes EU issuers to liabilities and operational risks beyond their control.

Systemic risks include investor runs, bank contagion, loss of monetary policy sovereignty, and undermined regulatory credibility. Immediate regulatory action at both EU and global levels is necessary, with legal clarification of multi-issuance, harmonised prudential tools, robust cooperation arrangements, and enhanced crisis management protocols. ■

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Author's Note: Co-Chair of European Systemic Risk Board Crypto Asset Task Force. Views expressed here are personal and not those of the Task Force, whose report was published on 20 October 2025. I am grateful for exchanges with Yvan Dubravica, Adam Glogowski, Steffen Kern, and Elisabeth Noble on these issues. This column extends the analysis in Portes (2025). It is an amended version of a chapter to appear in a CEPR eBook edited by Dirk Niepelt. This article was originally published on VoxEU.org.



A global stablecoin glut

Stephen I Miran is a Member of the Board of Governors of the Federal Reserve System

I am excited to be discussing stablecoins. This innovation has been unfairly treated as a pariah by some, but stablecoins are now an established and fast-growing part of the financial landscape. Putatively, stablecoins were originally intended to facilitate holding and trading cryptocurrency. But their proliferation has been aided by providing users with a stable store of value, a means of payment, and the ability to move capital quickly, irrespective of territorial borders.

Demand for dollars continues to be strong, so it's no surprise that a more efficient means of accessing dollars has become increasingly popular. With the passage this year of the GENIUS Act (Guiding and Establishing National Innovation for US Stablecoins Act), there is now a clear regulatory pathway in the US for stablecoin issuers to broaden their reach and solidify stablecoins as a core part of the payment system.

I believe economic research has some catching up to do. Economists meticulously study demand for dollar assets and consider how monetary policy may be affected, and the rapid growth of stablecoins affects the supply of loanable funds in the US economy. I am encouraged that the Federal Reserve is taking steps to recognize the importance of stablecoins for the payment system; greater transparency and rising adoption should help us consider their effect on monetary policy as well¹.

Stablecoins and dollars

Essentially all stablecoins are denominated in dollars, and their success is at least partly due to the US dollar's enduring status as the world's preferred currency². Stablecoins are also contributing to the dollar's dominance by allowing an ever-growing share of people around the globe to hold assets and conduct transactions in the most trusted currency.

My thesis is that stablecoins are already increasing demand for US Treasury bills and other dollar-denominated liquid assets by purchasers outside the United States and that this demand will continue growing. All else equal, this new demand lowers borrowing costs for the US government.

However, as a central banker, my focus is on what I believe may be a substantial and long-term force putting downward pressure on a crucial guideline for monetary policymakers known as r^* . The neutral rate, or r^* , is the policy interest rate that neither stimulates nor restricts economic activity when

the economy is operating at its potential once the transitory effects of cyclical economic shocks have abated.

There are several open questions with respect to the impact of stablecoins on US monetary policy: How many assets will be managed by stablecoin issuers? Will the funds come from domestic or foreign sources, and where might substitution pull funds out of the banking system? What are the systemic risks related to runs on stablecoins?

Since monetary policy must be forward looking, my colleagues and I would be best served exploring these topics now. In these remarks, I'll focus on the consequences for monetary policy if stablecoin growth follows industry expectations. In short, stablecoins may become a multitrillion dollar elephant in the room for central bankers.

GENIUS Act

While I tend to view new regulations sceptically, I'm greatly encouraged by the GENIUS Act. This regulatory apparatus for stablecoins establishes a level of legitimacy and accountability congruent with holding traditional dollar assets.

For the purposes of monetary policy, the most important aspect of the GENIUS Act is that it requires US-domiciled issuers to maintain reserves backed on at least a one-to-one basis in safe and liquid US dollar-denominated assets. These reserves can be held in bank deposits, short-term Treasuries, overnight repurchase agreements (repos) or reverse repos backed by US Treasuries, or government money market funds.

Depending on the source of funds used to invest in stablecoins, it may constitute new loanable funds in the US economy or the overall amount of money available for borrowing and lending.

Even stablecoins outside the ambit of the GENIUS Act are likely to boost demand for Treasuries and other dollar-denominated assets. Stablecoins that do not comply with the GENIUS Act can invest reserves in a much broader range of assets but, to be viewed as reliable stores of value, will likely end up still investing substantially in US dollar securities with minimal credit risk.

The inter-quartile range of private-sector estimates compiled by Federal Reserve staff roughly projects stablecoin uptake

reaching between \$1 trillion and \$3 trillion by the end of the decade. For reference, the Fed grew its holdings of US Treasury securities by just over \$3 trillion during the latest round of quantitative easing in response to the COVID-19 pandemic. In total, under \$7 trillion in Treasury bills are outstanding today. If these forecasts prove accurate, the magnitude of additional demand from stablecoins will be too large to ignore.

Potential for broad adoption

The innovation of public blockchains means that stablecoins can trade freely on rails that anyone in the world can use. This advancement represents potentially transformational change for consumers and businesses outside the US, particularly those in emerging market economies (EMEs) or even advanced foreign economies (AFEs) with burdensome restrictions on their payment systems.

In many jurisdictions, low-friction payment rails are unavailable. Banking services to convert local currency or assets into dollars may be limited. Basic banking services themselves may be limited. And billions of people worldwide are subject to capital controls preventing convertibility and access to dollars. Globally, savers disproportionately favour dollar-denominated assets, and the ubiquity of capital controls is indicative of that revealed preference.

For stablecoins to enter widespread use, there must be a bridge from local fiat currencies into stablecoins. One can imagine many possible bridges, often already in use for existing dollar vehicles: remittances from immigrants working in the US might take the form of stablecoins; exporters may receive portions of their payment in stablecoins, perhaps undeclared if domiciled in jurisdictions that proscribe stablecoin use; people might trade local currency for cryptocurrency and then use that cryptocurrency to buy a stablecoin; or they might trade physical cash or goods or services or other assets for stablecoins.

Stablecoins merely make it easier to traverse some of these bridges and increase incentives for doing so because once stablecoins are in circulation in an economy, they can circulate more freely and cheaply behind capital controls than traditional forms of dollar payments³.

These bridges will not be frictionless or have infinite capacity. For people who want to use dollars either as a store of value or a means of payment but are unable to do so, stablecoins make it incrementally easier. Stablecoins will not instantly obliterate barriers to dollar use, but they will perforate those barriers.

Reserve assets and currency provided by the US are global public goods, but some jurisdictions prohibit their citizens' enjoyment of them. Stablecoins might establish an easier means for the financially repressed to enjoy these global public goods and evade draconian restrictions on their finances.

For individuals and businesses in many nations, especially those in which dollars are used for large purchases like homes, this also leapfrogs the challenges of high and unstable inflation or volatile exchange rates.

“The scope for rapid increases in stablecoin issuance makes it now even more imperative to consider what widespread adoption may mean for monetary policy, both in the US and abroad”

To be fair, stablecoin growth may not live up to the forecasts I cited earlier. Potential limits on yield and reward arrangements could limit adoption, particularly in open economies. The presumption that the crypto industry will grow at the prodigious rates of recent years cannot be taken for granted. But even with these considerations, it seems likely to me that the growth in stablecoin usage outside the US will continue at a high rate.

One important distinction is that if domestically purchased stablecoins are financed with bank deposits, or foreign purchases are financed with existing dollar-denominated holdings, then that doesn't affect the amount of loanable funds in the financial system.

Further, there's some risk that a flow of deposits out of the US banking system and into stablecoins could disintermediate banks, affecting the transmission of monetary policy and stunting the velocity of money.

However, because GENIUS Act payment stablecoins do not offer yield and are not backed by federal deposit insurance, I see little prospect of funds broadly fleeing the domestic banking system. The real opportunity in stablecoins is to satiate untapped foreign appetite for dollar assets from savers in jurisdictions where dollar access is limited; by contrast, users in the US and AFEs like the eurozone already freely access Treasuries, dollars, and other instruments that offer yield or deposit insurance.

I therefore expect most demand for stablecoins to come from locales unable to access dollar-denominated saving instruments, boosting demand for dollar assets.

Implications for monetary policy

The supply–demand balance for loanable funds determines the neutral interest rate, or r^* . As I discussed in a recent speech, I believe a range of different factors are putting downward pressure on r^* and should be considered in formulating monetary policy⁴.

Some researchers have tried to estimate how much stablecoin growth might lower interest rates. In 2024, work by Marina Azzimonti and Vincenzo Quadrini estimated that if stablecoins are in widespread use and fully backed by US securities, it could put as much as 40 basis points of downward pressure on interest rates⁵.



In estimating the effect of the projected growth of stablecoin issuance on demand for Treasuries and other highly liquid dollar assets, it is helpful to make a comparison to what most researchers believe was a large factor during an era of declining interest rates that began around the turn of the millennium—what former Fed Chairman Ben Bernanke called the global saving glut⁶.

In measuring the global saving glut, Bernanke reported that the annual US current account deficit widened by 4 percentage points of US gross domestic product (GDP) from 1996 to 2004⁷.

As I mentioned earlier, projections indicate between \$1 trillion to \$3 trillion of growth in stablecoins over the next several years. Adoption depends on regulatory clarity, institutional integration, and factors emanating from outside the US—for instance, growth in EMEs, foreign exchange fluctuations, foreign political stability, and so forth.

An additional \$2 trillion of foreign demand for dollar assets by the end of the decade would, all else equal, increase the current account deficit by roughly 1.2 percentage points of GDP over this period. This increase would represent about 30 percent of the size of the original global saving glut.

More bullish stablecoin-uptake forecasts on the order of \$4 trillion would double the size of this effect, making it about 60 percent the size of the original global saving glut. These magnitudes would matter for monetary policy.

Demand could obviously differ in domestic versus foreign adoption or miss these estimates. My goal is not to pinpoint the most accurate forecast, but to highlight the potential power of this channel. You can fill in your own numbers using this same method—my crystal ball is no clearer than others’.

Moreover, the asset mix purchased by the rest of the world 20 years ago differs from that purchased by stablecoin issuers. The effects of a lower neutral rate might therefore manifest in financial markets differently than they did last time.

Even relatively conservative estimates of stablecoin growth imply an increase in the net supply of loanable funds in the economy that pushes down r^* . If r^* is lower, policy rates should also be lower than they would otherwise be to support a healthy economy. A failure of the central bank to cut rates in response to a reduction in r^* is contractionary.

If a global stablecoin glut looks like a global saving glut, some other consequences may be replicated, too. For instance, a lower r^* increases the odds that the zero lower bound (ZLB) binds in the future, limiting the ability of short-term interest rates to move down to provide accommodation but not restraining their ability to move up to restrict activity.

Markets may expect policy to spend more time at the ZLB because of that inability to provide accommodation and get away from zero. That may make the fed funds rate more volatile to the upside with respect to other financial conditions, even as downside volatility remains muted by the ZLB, simulating elements of former Chairman Alan Greenspan’s ‘conundrum’⁸.

Moreover, if a global stablecoin glut is driven by flows out of foreign currencies and into the US dollar, it will, all else equal, make the dollar stronger. Depending on the strength of this effect relative to other forces affecting the Fed’s price-stability and maximum-employment mandates, that might be something that monetary policy reacts to.

Finally, incremental dollarization may reduce the benefits of floating exchange rates. Exchange rates often function as shock absorbers, adjusting rapidly to changes in relative conditions across countries so that nominal prices don’t have to. If nominal prices are sticky and exchange rates are not, the cyclical distortions associated with those rigidities are less detrimental for the economy.

Increased real price rigidity because exchange rates cannot adjust would intensify the volatility of global business cycles. And Fed policy will have a greater effect on foreign economic growth with greater dollarization, increasing business cycle synchronization.



Whether this phenomenon would matter for the US and not just for countries that dollarize a portion of their economies remains speculative⁹.

America's capital markets are the world's deepest, helping to support economic growth, fund new ideas, and allocate capital efficiently. However, our financial infrastructure, not unlike our physical infrastructure, could use a reboot.

Stablecoins may well lead the way on this front, facilitating dollar holdings and payments domestically and abroad. While there has been extensive research on the topic since the advent of stablecoins a decade ago, the scope for rapid increases in issuance makes it now even more imperative to consider what widespread adoption may mean for monetary policy, both in the US and abroad. ■

Endnotes

1. See Board of Governors of the Federal Reserve System (2025), *proceedings of the Payments Innovation Conference*, streamed live on October 21, YouTube (Washington: Board of Governors).
2. For the list of stablecoins circulating, see the DeFiLlama website; at the time of writing, 99.6 percent of stablecoins were denominated in dollars. For more on the enduring global preference for dollars, see Carol Bertaut, Bastian von Beschwitz, and Stephanie Curcuru (2025), "The International Role of the U.S. Dollar – 2025 Edition," *FEDS Notes*, (Washington: Board of Governors of the Federal Reserve System, July 18).
3. Although many countries have existing black markets for dollars, these are likely to be less preferred to stablecoins because of the difficulty of verifying and saving currency. Relative to stablecoins, physical cash is riskier, and both more difficult and costlier to store or move in large volumes. Moreover, many black market dollars trade at a premium because the amount of dollars available is limited.
4. See Stephen I Miran (2025), "Nonmonetary Forces and Appropriate Monetary Policy," speech delivered at the Economic Club of New York, New York, September 22.
5. See Marina Azzimonti and Vincenzo Quadrini (2024), "Digital Assets and the Exorbitant Dollar Privilege (PDF)" *AEA Papers and Proceedings*, vol. 114 (May), pp. 153–56. This paper and related work by the same authors—including the 2025 paper "Digital Economy, Stablecoins and the Global Financial System," *NBER Working Paper Series 34066* (Cambridge, Mass.: National Bureau of Economic Research, July)—expand on some of these ideas but do so in a model in which stablecoin issuers can choose to hold much less—or even none—of their assets in Treasury securities. The prediction on the interest rate depends on the fraction of reserves held in Treasury securities by stablecoin issuers. With a low enough fraction, the stablecoin steady-state interest rate can actually also be higher. However, such a pattern does not match what we observe from issuers or the guidelines in the GENIUS Act, and I therefore prefer to assume a high value of the fraction of reserves held in Treasury securities. It follows that the stablecoin steady-state interest rate is lower than the steady-state interest rate in which stablecoins are absent.
6. In his 2005 speech that coined the term and launched a thousand papers, then-Fed Governor Ben Bernanke estimated that the global saving glut began around 2001. See Ben S Bernanke (2005), "The Global Saving Glut and the U.S. Current Account Deficit," remarks delivered at the Sandridge Lecture, Virginia Association of Economists, Richmond, Virginia, March 10.
7. After peaking in 1995 at 7.91 percent, the 10-year yield fell to 4.92 percent in January 2001.
8. See Alan Greenspan (2005), testimony before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, February 16, 109th Cong. (Washington: U.S. Government Printing Office), quoted text in paragraph 23.
9. Caballero, Fahri, and Gourinchas (2017) note that once the ZLB for global interest rates is reached, the world economy becomes increasingly interdependent as countries can no longer use monetary policy to insulate their economies from world capital flows; see Ricardo J Caballero, Emmanuel Farhi, and Pierre-Olivier Gourinchas (2017), "The Safe Assets Shortage Conundrum (PDF)," *Journal of Economic Perspectives*, vol. 31 (Summer), pp. 29–46.

The views expressed here are my own and are not necessarily those of my colleagues on the Federal Reserve Board or the Federal Open Market Committee. This article is based on a speech delivered at the BCVC Summit 2025, Harvard Club of New York City, New York, New York, 07 November 2025.



Act now before it's too late

Jonathan Sharp is CEO of Britannic Technologies

This year cybercrime has been like a tsunami taking down several well-known enterprises including Jaguar Land Rover, M&S, Harrods, Co-op, Renault and even a nurse, Kido. Costing companies billions, having to reduce staff and putting some suppliers out of business.

Cybercrime is now a national emergency and the National Cyber Security Centre (NCSC) and the National Crime Agency announced they cannot fight cybercrime alone, putting the onus on businesses and organisations to secure their systems and data, and prioritising cybersecurity as a critical agenda item, embedding it into every decision they make.

The frightening and alarming aspect is that cybercriminal groups like Scattered Spider and Scattered Laspus\$ Hunters consist of teenage hackers, some from the UK. The cybercrime business model is successful and profitable, and the lure of making a lot of money and the kudos received is too tempting for some of the Gen Z to resist.

But the crimes will NOT stop unless we educate young adults of the dangers of cybercrime, companies stop paying the ransoms and businesses ensure that its cybersecurity strategy is top of their agenda.

Dr Richard Horne, CEO of National Cyber Security Centre stated, *"All organisations need to see this as a wake-up call to understand what their exposure is to cyber-attacks, to ensure they've got the right defences in place, and to make sure they've got a plan to be able to continue operations and recover should they be hit by a cyber-attack."*

Don't pay up

The National Cyber Security Centre (NCSC) and the National Crime Agency advise businesses not to pay the ransom because it encourages cybercrime and the criminal's win. In January 2025 the government proposed a ban on the public sector organisations from making ransomware payments. However, this is a very grey area littered with loopholes especially if it is extended to the private sector.

Businesses that suffer from a cyber-attack demanding for ransomware often contact their insurance provider and/or the NCSC so they can negotiate a cheaper ransom. It's a catch 22 if they don't pay up and can't operate then will the

government support them to get back? If not, then they may have no option but to pay up.

Social and economic problem

It is critical that the government, education institutions and businesses collaborate on the education and awareness of how to stop cybercrime.

Research from Oxford University compiled the first ever 'World Cybercrime Index' identifying key cybercrime hotspots by ranking the most significant sources of cybercrime at national level. The greatest cybercriminal threats were Russia at the top of the list followed by Ukraine, China, USA, Nigeria and Romania.

However, it has recently transpired that groups of teenagers and twentysomethings from the UK are cyber criminals. So, this is a now a home-grown problem that we must tackle.

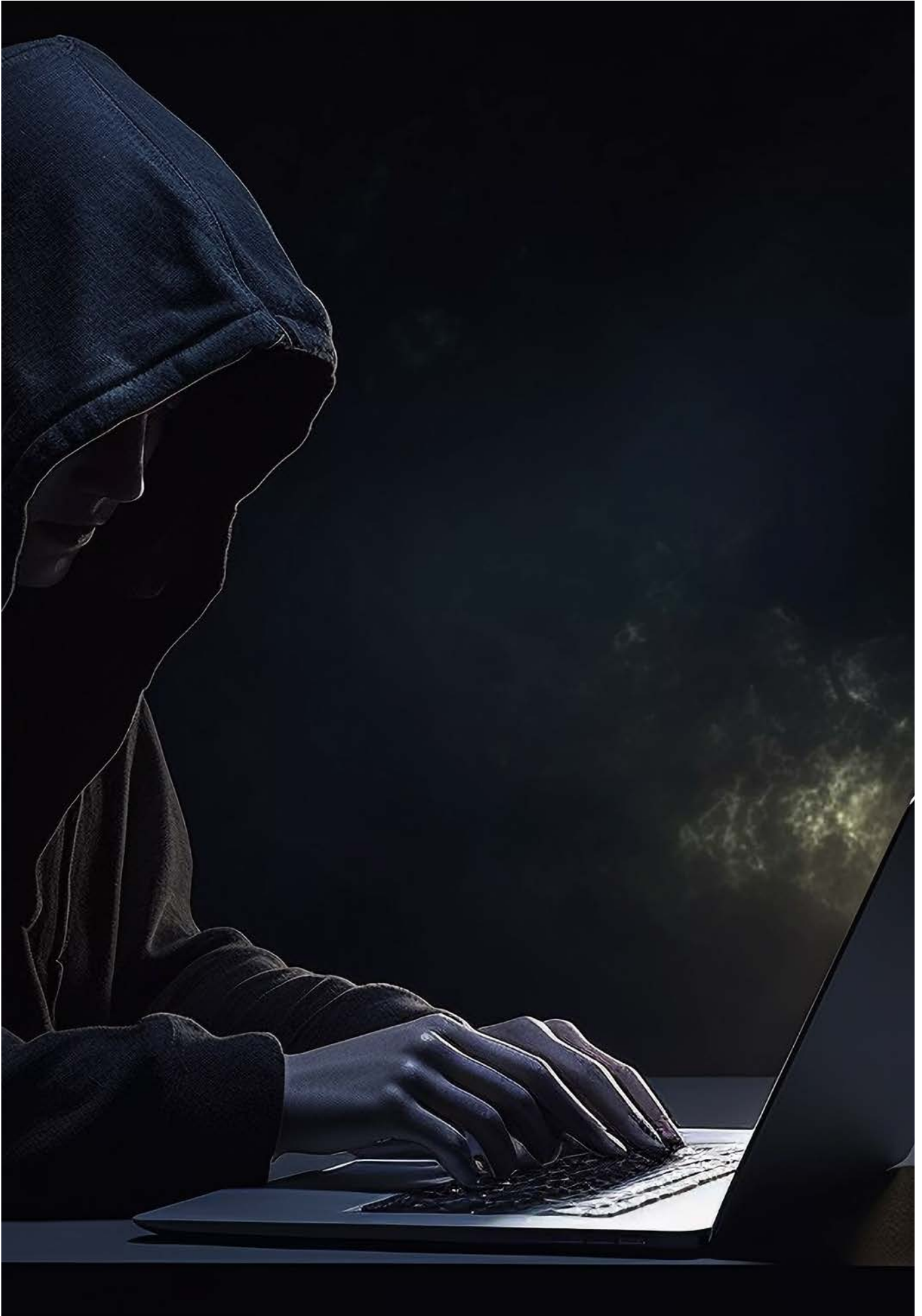
Education is key

It is no surprise that cyber criminals are teenagers and in their early twenties, these digital natives spend hours gaming and online which can be gateway to the dark web and hacking subcultures. Hacking tools, malware and phishing tutorials are easily available on the dark web along with subscriptions to a cybercriminal network that for a monthly fee provides access to data from leading companies and organisations.

The kudos and lure of making a lot of money attracts the teenagers but the reality of the crime they are committing is not realised because in the digital world it feels ureal and less serious. They are duped that they won't be caught as its anonymous, but the reality is it is very serious, and they will go to prison for their crimes.

Young people need to be educated of the dangers of cybercrime and taught cybersecurity and ethical hacking. Talking about the dangers of cybercrime and showing them case studies of the perpetrators that got caught and went to prison. This needs to be actioned now with secondary schools, colleges and universities working together with government organisations such as the National Cyber Security Centre and the National Crime Agency.

Making cybersecurity jobs cool, glamorous and exciting informing the young people they can have well paid careers



“It is vital to build a culture where employees feel compelled but comfortable to report any suspicious activity”

as spies for nationally recognised organisations. The 007s of the cyber world.

Education institutes can work with the government and industry to create competitions, work experience and apprenticeships. The National Cyber Security Centre have started an initiative called CyberFirst a programme creating opportunities to help young people explore their passion for cyber and emerging tech.

Offering university bursary scheme, competitions and free events and courses, partnering with schools and colleges across the UK with the intent to educate children in cybersecurity which will hopefully lead to a career in cybersecurity, and attracts local industry to offer work experience and apprenticeships.

These measures are critical to close the digital skills gap which is significant regarding cybersecurity. In 2024 the Government issued a report stating that 32% of businesses and 40% of charities lacked confidence in dealing with cyber security breaches or attacks and had not outsourced this function.

Thinking and operating differently

To fight cybersecurity, we all must change the way we think and operate in everything we do online and with technology. We need to be agile, flexible and have an open mind on learning new methods of operating and working, and we can never sit still.

It has been suggested that supply models such as ‘Just in Time’ may have to change to leaner models because if a company is hacked then the disruption to the supply chain is massive, resulting in the companies not being able to get stock.

Act before and not after

Companies and organisations need to secure their technology, people and processes from cybercrime before it happens by implementing a secure IT network and business continuity strategy. So, if a cyber-attack does occur, they can act either before it happens or immediately when it does and carry on as business as usual without facing massive consequences.

Top tips for how business can secure against cybercrime

Cybersecurity is not an optional spend for businesses it is now a critical matter of survival protecting your business, people and reputation of a cyber breach.

It is no longer the sole remit of the IT department, everyone in the company from the CEO down should be accountable for cybersecurity. Security needs to be embedded into the

culture of the company and to ensure it is employees need to be educated on cybersecurity.

Education and awareness

Human error accounts for a staggering 95% of cyber related incidents (Mimecast 2025) so it is imperative that employees are trained regularly on how to be cyber secure. Training them through workshops and courses using phishing simulations where companies send employees fake but realistic phishing emails to test their ability to recognise threats and how they respond to it.

Teaching employees about not to click on links, input passwords from phishing emails and messages, creating weak passwords and overall poor security hygiene.

It is vital to build a culture where employees feel compelled but comfortable to report any suspicious activity.

Robust passwords

The easiest way for cybercriminals to hack into your network is through weak or repeated passwords. Enforce a rule where all employees must use complex and unique passwords with a combination of upper and lower case letters, numbers and symbols to keep out the cybercriminals. Provide a password manager on your systems to avoid employees having to remember them and make them more secure.

Multi Factor Authentication (MFA)

For an additional security layer incorporate a multi factor authentication (MFA) for a second verification step, this could be a code that is sent to their mobile phone or an authenticator application. Research from Microsoft shows that an MFA can block more than 99.2% of cyber-attacks.

Secure devices

It is also critical not to leave work devices unattended in a public place, use a public Wi-Fi connection and in the office, employees need to ensure screen locks are activated. Protect all devices with encryption and have the ability to wipe data if they are lost or stolen. If employees use their personal devices for work, then have robust BYOD policies in place.

Secure Wi-Fi networks

The Office for National Statistics reported that over a quarter of the UK workforce were hybrid working at the start of 2025 and with the rise in cybercrime a secure network is vital. Remote and hybrid workers should use a Virtual Private Network (VPN) so employees can connect securely making it harder for hackers. Without a VPN you are exposing yourself to an attack.

Update software and devices

If your software and devices are not kept up to date then the cyber criminals will detect weaknesses in aged unpatched systems and devices. Businesses should run strict patch management policies, turn on automatic updates and implement reputable malware and anti-virus software.

Business continuity plan

Back up your data and follow the 321 rules where you have



three copies of your data, stored on two different types of storage, one online and other offsite. Conduct tests regularly to ensure they can be restored and recovered should a disaster occur. A cybersecurity plan is evolutionary that requires constant updating, maintenance and changing.

AI for good

Investing in layered security with perimeters, secure endpoints and AI monitoring that can detect threats and anomalies in real time. Providing protection for employees and customers that can be actioned before an attack happens.

AI can also be used to detect deepfakes which are used by criminals in social engineering so deploying a solution that can identify these irregularities can stop a cyberattack in advance. It is vital that employees are trained on spotting these in links and emails etc.

Building trust

Customers, suppliers and partners want to do business with a company that is secure and resilient, someone who they can trust will look after their data and their affairs. This is also a legal requirement for GDPR requirements and Directors' fiduciary duty. Solutions such as call and messaging

branding build trust because customers see the call or text message are from you therefore know it is not a scam call or text and will answer it.

It is also paramount to have the latest and up to date security standard certifications such as ISO027001 and Cyber Essentials Plus certifications to build trust with all stakeholders.

Stake holder chain

The supply chain and customer environments are often one of the weakest links in cyber resilience. It is critical to perform rigorous audits and ongoing compliance monitoring to ensure they are safe and do not expose your business to a cyber-attack.

Protect yourselves

Beating cybercrime requires a collective collaboration between education institutions, parents, the government and businesses which will take time. But you don't have time, so it is up to you to protect your business from an cyberattack ensuring you have the latest AI real-time cybersecurity network and solutions in place to protect your business, people and technology.

Don't be a victim to cybercrime and act now before it's too late for your business and your reputation. Some recover but some don't! ■

Excellence & innovation in aviation regulation

The Cayman Islands Aircraft Registry provides Total Aircraft Registration Solutions!

When it comes to aircraft registration, jurisdiction matters. For owners, financiers, and operators navigating the complex world of international aviation, the Cayman Islands has emerged as a jurisdiction of choice, offering a compelling combination of stability, efficiency, and sophistication that few other registries can match.

We have highlighted below the key reasons owners, financiers and operators regard the Cayman Islands as the jurisdiction of choice for aircraft registrations.

A foundation built on stability

The story of the Cayman Islands' success in aviation registration begins with its remarkable political and economic stability. As an overseas territory of the United Kingdom, this Caribbean jurisdiction enjoys the best of both worlds: the backing and

credibility of British governance, combined with substantial autonomy in managing its own affairs.

The Cayman Islands has operated with a stable parliamentary democracy, electing a Parliament every four years handling local governance, while a UK-appointed Governor oversees matters including internal security and serves as the vital link between the Cayman Islands and Westminster. This dual structure has created an environment of predictability and reliability that aviation stakeholders find essential when making long-term investment decisions.

With a GDP per capita estimated at \$72,616 for 2024, higher than the \$72,120 recorded for 2023, and a Moody's credit rating of Aa3, the Cayman Islands ranks among the world's top 20 financial centers. But perhaps more importantly for the aviation industry, it has achieved this status while maintaining



a tax-neutral environment, which creates an exceptionally favorable framework for crossborder transactions.

Some might question whether a tax-neutral jurisdiction can maintain international credibility, but the Cayman Islands has systematically addressed this concern. As an early adopter of FATCA and the OECD's Common Reporting Standard, the jurisdiction has demonstrated its commitment to transparency and compliance.

It has implemented comprehensive frameworks including the International Tax Co-operation (Economic Substance) Law and maintains 36 bilateral agreements on tax information exchange. The jurisdiction has successfully balanced international compliance standards with appropriate privacy protections.

The political stability, highly developed legal system and infrastructure and its position as an international financial centre make the Cayman Islands the jurisdiction of choice for registration of aircraft.

A legal system based on English common law

For financiers and aircraft owners alike, legal certainty is paramount. The Cayman Islands delivers this through a sophisticated legal system rooted in English common law, with

“The political stability, highly developed legal system and infrastructure and its position as an international financial centre make the Cayman Islands the jurisdiction of choice for registration of aircraft”

the UK Privy Council serving as its final court of appeal. This connection provides an assurance that few other jurisdictions can offer: that legal principles will be interpreted and applied consistently with centuries of established precedent.

The primary aviation legislation, the Air Navigation (Overseas Territories) Order as amended from time to time, is a UK statutory instrument that extends proven regulatory standards to the territory. Supplemented by the Overseas Territories Aviation Requirements (OTARs) and various local statutes, this framework creates a comprehensive regulatory



environment that international stakeholders understand and trust.

The British-based system of registration for both aircraft and aircraft mortgages within a stable legal system based on English common law is another compelling reason to choose to register an aircraft and any associated aircraft mortgage in the Cayman Islands. This system of registration thus appeals to aircraft owners and financiers alike.

The CAACI: where efficiency meets expertise

At the operational heart of the Cayman Islands' aviation success story is the Civil Aviation Authority of the Cayman Islands (CAACI). Established in 1987, this statutory body has built a reputation that extends far beyond what one might expect from a small jurisdiction.

The CAACI's responsiveness continues to distinguish it in an industry where timing is critical. Its due diligence process is typically approved within 2–3 business days, and aircraft registrations generally progress within an average timeframe of 3 to 6 weeks. The registry also facilitates same-day mortgage registrations and Cape Town filings, all while upholding the rigorous standards expected of a leading regulatory authority.

Consider the practical advantages: the authority deploys highly qualified, full-time airworthiness surveyors to inspect aircraft at their home bases or other designated facilities eliminating the need for costly and time-consuming aircraft repositioning.

The use of full-time surveyors assists in the CAACI building long term relationships with clients. Letters of Authorisation for operational and airworthiness approvals are issued within days rather than the weeks or months common elsewhere.

Bespoke electronic document management system: VP-C Online

Recognizing that aviation operates around the clock, the CAACI provides 24/7 access through its VP-C Online system for applications, securely depositing documents and provides a mechanism for checking the status of works in progress.

The VP-C Online platform itself represents a significant technological advancement—a customised electronic document management system that allows authorised users to access their aircraft's documentation at any time, from anywhere. This isn't simply digitization for its own sake; it's a carefully designed system that streamlines processes and provides genuine operational advantages.

Ease of operation into US airspace

For many aircraft operators, access to United States airspace is essential. Here the Cayman Islands offers a distinctive advantage: operators of Cayman Islands-registered aircraft are exempt from certain TSA Waiver Authorization requirements that apply to many other foreign registrations.

This exemption provides significant operational flexibility. Normally, operators seeking to fly within or over US airspace

must submit TSA Waiver Authorization applications five to seven business days in advance, as requests must be processed through multiple agencies. Without proper authorization, flights face diversion, grounding, or cancellation.

The ability to operate on shorter notice can be operationally critical and economically valuable, particularly for business aviation where schedule flexibility often provides competitive advantage.

Protecting financial interests

For financiers, the security of their interests is non-negotiable. The Cayman Islands provides multiple layers of protection that have made it particularly attractive to the lending community.

The jurisdiction's participation in the Cape Town Convention, which entered into force for the Cayman Islands in November 2015, provides internationally recognized protections for security interests in aircraft equipment. But recognizing that the Convention doesn't apply in all circumstances, the Cayman Islands has maintained its local mortgage registration regime, and many sophisticated financiers utilize both systems for maximum protection.

The Mortgaging of Aircraft Regulations, 2015 (MAR) offers several compelling features. Registration is straightforward, with no requirement that the mortgage be governed by Cayman Islands law. Once registered, mortgages remain valid for their entire duration without renewal requirements.

The priority system provides clear certainty: registered mortgages receive statutory priority over subsequently registered and unregistered mortgages, with this priority remaining unaffected by mortgagor bankruptcy. Even before aircraft registration is complete, mortgagees can protect their position by filing priority notices that prevent other security interests from jumping ahead in line.

The mortgage register itself is publicly searchable for a nominal fee, providing transparency while the registration process remains efficient. Deregistration is equally straightforward, requiring a mortgage discharge form and accompanying legal documents including a Deed of Release.

For leased aircraft, the CAACI goes further, providing 'comfort letters' to lessors and owners that acknowledge ownership and leasing structures and confirm that aircraft removal requires written authorization from the lessor or owner. These letters, noted on the Aircraft Register, provide an additional protection layer that lessors appreciate.

A hub for aviation business

The Cayman Islands hasn't simply focused on registration; it has created infrastructure to support aviation businesses more broadly through the Cayman Maritime & Aviation City, a special economic zone designed to facilitate aviation businesses.

The advantages are substantial: tax neutrality; 100% foreign ownership permitted; three-to-four week fast-track licensing;

and a 'one-stop-shop' administration that consolidates rent, licensing fees, and work permit fees into a single annual payment. The authority can obtain renewable five-year work and residency visas within five working days regardless of employees' country of origin, with no maximum limit on work permits.

For companies seeking to obtain a Cayman Islands Air Operator's Certificate (AOC)—which requires demonstrating a principal place of business in the Cayman Islands—the Maritime & Aviation City provides an efficient, practical solution. This creates opportunities for commercial operations that might otherwise face significant barriers to entry.

Innovation in transition registration

One of the CAACI's most innovative offerings addresses a specific pain point in the aviation finance industry: what happens when aircraft are transitioning between leases or have been repossessed? The CAACI's transition register provides a solution.

This isn't a parking lot for end-of-life aircraft; rather, it's a temporary registration facility for assets in transition. Lessors and financiers can register aircraft on a respected registry while they work through remarketing, sale, or storage arrangements. The CAACI actively works with lessors and financiers to maintain aircraft and keep certificates current, preserving asset value during what can be a challenging period.

The registration service is quick and cost-competitive, while deregistration is streamlined and can be completed same-day when needed. During the transition period, the CAACI issues special flight authorizations to accommodate ferry flights, and aircraft remain subject to any registered mortgages, maintaining financier protections.

This offering demonstrates the CAACI's understanding of practical industry needs and its willingness to develop creative solutions that add genuine value.

Making registration work in practice

The practical mechanics of Cayman Islands registration are designed for efficiency. The Aircraft Register is primarily a 'private register', focused on aircraft not operated for hire or reward, though commercial operations are permitted under specific circumstances including Article 83 bis agreements and memoranda of understanding with other aviation

authorities, and those established in the Special Economic Zone (SEZ).

Eligibility requirements are broad, encompassing UK nationals, Commonwealth citizens, nationals of European Economic Area States or the Swiss Confederation, and appropriately structured companies incorporated in those jurisdictions.

The CAACI's policy is to only accept aircraft with a Maximum Take-Off Weight (MTOW) exceeding 12,500 lbs./5,700kg. Exceptions are considered based on generality of interests to aviation on the CIAR in respect of modern light turbojet, turboprop aircraft and helicopters based on Cayman Islands registered yachts, demonstrating flexibility where appropriate.

The compelling case

The Cayman Islands' success in aircraft registration isn't the result of any single factor but rather the combination of multiple advantages that together create an exceptionally attractive package. Political and economic stability provides the foundation. A sophisticated legal system based on English common law offers certainty.

The CAACI delivers efficiency, professionalism, and genuine expertise. Exemption from certain TSA requirements facilitates US operations. Registration and mortgage procedures provide strong security while remaining straightforward. The Maritime & Aviation City offers infrastructure for aviation businesses. And innovative solutions like the transition register address real industry needs.

For owners, financiers, and operators evaluating where to register aircraft, the Cayman Islands presents a compelling value proposition. It offers the stability and legal sophistication of an established aviation jurisdiction while maintaining the efficiency and responsiveness. In an industry where certainty, security, and operational efficiency are paramount, the Cayman Islands has positioned itself not just as a viable alternative, but increasingly as the jurisdiction of choice.

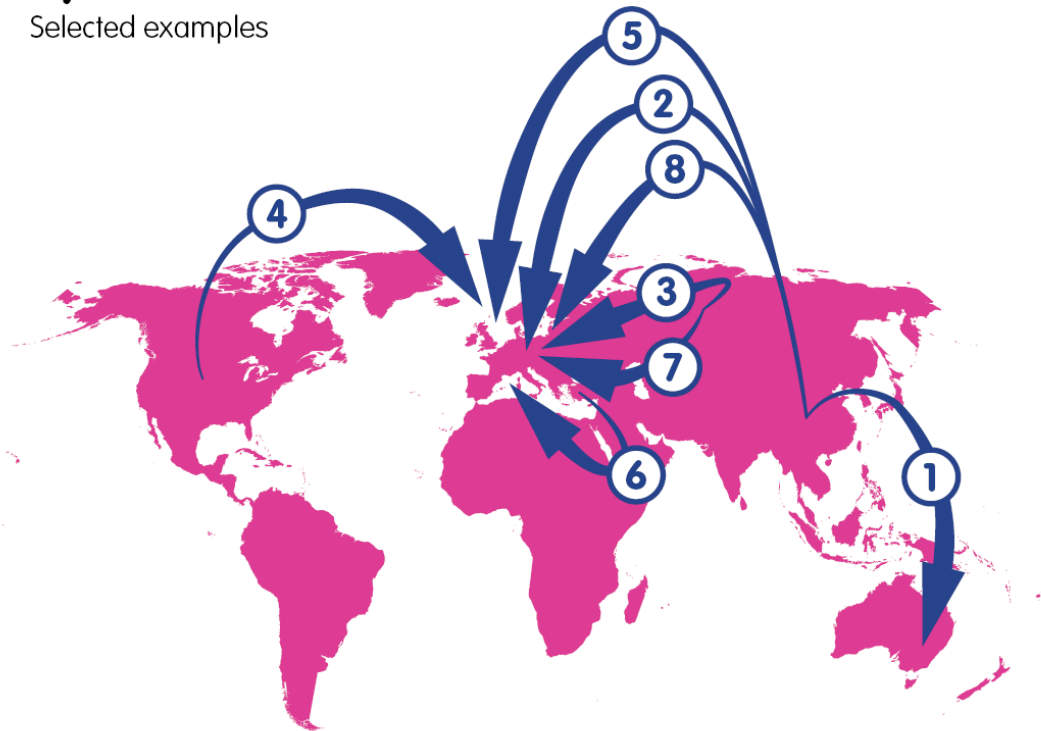
As international aviation continues to evolve, with increasing complexity in ownership structures, financing arrangements, and operational requirements, the Cayman Islands appears well-positioned to remain at the forefront of aircraft registration. Its combination of established strengths and continued innovation suggests that more aircraft will be carrying the VP-C registration prefix in the years ahead. ■





The EU is increasingly threatened by economic coercion

Selected examples



1. Chinese curb on Australian exports to push back against an investigation into the origins of covid-19 (2020)

2. Chinese threat of car tariffs to pressure Germany into accepting Huawei's 5G infrastructure (2019)

3. Russian ban on Polish imports of fruit and vegetables following EU sanctions over the war in Ukraine (2014)

4. US threat of section 301 tariffs to prevent France and other European countries from levying taxes on digital services (2020)

5. Chinese 'popular boycott' of EU companies (such as Adidas and H&M) following EU sanctions on Chinese officials involved in human rights violations in Xinjiang (2021)

6. Turkish boycott of French-labelled goods following President Emmanuel Macron's announcement of policies to combat extremism (2020)

7. Russian threat to ban Czech beer imports following Czech government's declaration of links between Russian intelligence services and the 2014 Czech warehouse explosions (2021)

8. Reported Chinese suspension of rail freight to Lithuania and block on export permits for Lithuanian producers in reaction to the announcement that a Taiwanese Representative Office would open in Lithuania (2020)

Power is now defined by control over flows of people, goods, money, and data. Many states use economic tools to enhance their geopolitical power.

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