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FOREWORD

A government of the people…

A government of the people, by the people, for the people. Abraham Lincoln's Gettysburg phrase has been much quoted, and the meaning, that government is composed of ordinary citizens who are elected by the people and work for the benefit of the people, seems to have been lost in translation in the West.

People normally refer to 1984 as the embodiment of the society that we are becoming. Perhaps they should go further back to Jonathan Swift's Gulliver's Travels. Lemuel Gulliver visits the land of Balnibarbi, where people insist on doing everything in an impractical fashion. Those few who wish to use common sense in their activities are forced by social and political pressure to conform to the impractical.

The epitome of the attitudes of the people of the land is found in the Grand Academy at the capital city of Lagado. At the academy Gulliver sees all sorts of experimentation going on. The most striking aspect of the projects is their absurdity, the second is that they all require a constant flow of money, like modern research and development projects.

Gulliver meets Munodi, who leads him on a tour around Balnibarbi where, apart from Munodi's own estate, the land has been ruined and eroded away. None of the Academy's plans worked and they destroyed the land. Only Munodi's fields remained bountiful, because he ignored these new directives and followed the customs of his ancestors.

This easily could be a metaphor for the Western world, where we see policies forced on the electorate that are seen to lack a coherent aim. This perhaps explains the recent successes of socially conservative parties throughout most of continental Europe. Does their popularity have anything to do with voters' rejection of radical progressivism, the aggressive and divisive dogma that has so intoxicated the left this century?

These voters are rooted in community, attachments to each other, traditions and in patriotic loyalty to the nation. They value conventional family structure on which they depend for security and emotional wellbeing. They value social orderliness; they depend on the networks of mutual obligation bound by tradition that make a community of shared interests and values and form the place they can call home. These views are incompatible with the nature of the European Union.

Has the West turned its back on their traditional bases? If they are in favour of democratic ideals, then they will need to reconnect with the electorate. Or is the West becoming a new Balnibarbi? ■

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Citizens protest against compulsion and coercion

Patrick van Schie discusses the provincial elections in the Netherlands, and examines whether this might be part of a broader trend among voters in Western democracies

Provincial elections in a relatively small country are not particularly likely to draw international attention, and so a large part of the world undoubtedly failed to notice that, on the 15th of March, elections were held in the Netherlands – a medium-sized country even from the perspective of its own inhabitants – for the Provincial Councils, the people's representatives for the country's 12 provinces.

Insofar as the foreign press covered the event at all, they reported the rise of yet another new right-wing 'populist' party, the Farmer-Citizen Movement (BBB). Whether it was the *BBC* or *The Guardian*, *The Washington Post* or *Die Zeit*, the international media seemed to agree that the Netherlands had become more firmly gripped by populism.

Populism is, however, a dubious concept in itself. The word is often used, especially by opponents of a party thus dubbed, with the intention of dismissing it, rather than gaining insight into its ideas, and I have argued this before (together with Fleur de Beaufort) in *World Commerce Review* (Summer 2021).

But the BBB, the party which from a national perspective became the largest in the Netherlands by polling 1.7 times the number of voters of the runner- up VVD of prime minister Mark Rutte, the largest party in government, has a profile which, on a number of counts, does not match that of the parties typically denoted as 'populist'.

The importance of provincial elections in the Netherlands

Most of the Dutch population are not at all clear about the business of provincial governance, which is why they have little affinity with the Provincial Councils, which are, as it were, parliaments at a provincial level.

Throughout recent decades, the turnout rate for provincial elections has often remained below 50%. By way of comparison, the turnout for the election of the House of Representatives, the most important constituent of the national parliament, is generally between 75 and 85% of eligible voters.

Insofar as the provincial elections could be considered to be a benchmark, it was a poor one; the turnout of supporters for some parties was more reliable than that of others. The Christian democrats, for example, traditionally score better in provincial than in national elections.

It is now up to the old, established parties to show that the protest vote has indeed been heard, and that the casting of it has been meaningful. If voters are able to see this, democracy will have worked and faith in the democratic system will continue to be high

The turnout on the 15th of March, however, was 57.5%. Although this remains significantly below that of parliamentary elections, a rising trend has been observed for some 15 years now for the provincial elections. This is directly related to the fact that in the Netherlands, the members of the Provincial Councils elect the members of the First Chamber – the Senate – according to an indirect system.

Thus, Dutch citizens can indirectly determine the composition of the national Senate for the next four years by means of the provincial elections, a fact which, for the majority of the voters, is almost certainly the most decisive factor in determining their choice.

Admittedly, at a national level political primacy lies with the House of Representatives, but the First Chamber (hereinafter referred to as Senate) must approve all laws and treaty adjustments, so it is able to obstruct the legislative work of a cabinet when it sees fit.

Since those parties which were traditionally the largest have diminished significantly, and parliament now comprises more parties than before, the formation of a new cabinet following elections for the House of Representatives has become an increasingly cumbersome process.

Whereas two parties from the former big three (the Christian Democrats, the Social Democrats and the Liberals) used to suffice to ensure an ample majority for a coalition in the House of Representatives, it now takes more parties, which then have to rely on a scantier majority.

The current Rutte IV cabinet is a 4-party coalition, supported by only 77 of the 150 members of the House of Representatives. As it was, the coalition didn't have a majority in the Senate before the 15th of March and could count on only 32 out of the Senate's 75 members. The most recent provincial elections are likely to lead to a loss of

10 of these 32 seats, meaning that more parties that do not form part of the coalition will be required to ensure a majority for legislative proposals.

Unless, that is, the coalition manages to secure the support of the new BBB. With 17 seats in the new Senate, this party has only 5 fewer seats in that chamber than the combined coalition parties and could ensure – on its own – that the legislative proposals of the cabinet are determined by the Senate.

The comet-like rise of the BBB

The winner on March 15th is a very young party, only founded on the 1st of November 2019, yet in the elections for the House of Representatives in 2021, barely 18 months later, the BBB secured 1.0% of all votes. The March 2023 provincial elections saw an abrupt increase to 19.2%, and in three rural provinces in the north-eastern part of the country, the party secured roughly a third of all votes.

Considering the demographic makeup of the electorate, it is highly improbable that all of these votes were cast by farmers and their families, and indeed, the BBB appeared to be popular among other citizens as well.

In Leeuwarden, the largest city in the northern rural province of Friesland for instance, the BBB polled 17.4%. The BBB's broad power of attraction is clearly evinced by the fact that the party even drew quite a few voters in the three largest cities in the West of the country: in Amsterdam, for example, they achieved 5.0%, in Rotterdam (with its international port) 8.2% and in The Hague (the seat of Dutch government) 8.7%.

Furthermore, the gains of the BBB come at the expense of a wide range of parties: traditional centre-right parties such as the liberal VVD and the Christian democratic CDA, as well as the right-wing nationalist parties like the PVV led by Geert Wilders, but a quarter also came from parties on the left of the political spectrum.

In addition, the BBB has been successful in drawing citizens who have not turned out for previous elections to the ballot box; about a quarter of the electorate stayed at home when the provincial elections were last held.

A similar picture emerges from the self-classification of voters. Of those voters who position themselves in the centre, 24% voted for the BBB. The percentage is 26 for voters who consider themselves to be moderately right, and 20 for those who see themselves as firmly on the right (among the latter, the liberal VVD did slightly better with 22%).

However, as many as 8% of moderately left-wing voters also opted for the BBB, and even 4% of firmly left-wing voters. This suggests that the BBB is actually more of a centre-right party capable of drawing in voters from the left of the political spectrum.

In terms of its political programme, the BBB cannot per se be classified as a right-wing party. Its manifesto is not complete (yet). For instance, it is not clear where the party stands with regard to foreign policy or defence, although the BBB's sole member in the House of Representatives, popular front woman Caroline van der Plas, did condemn the Russian invasion of Ukraine.

When it comes to subjects touching on social legislation and healthcare, Van der Plas has so far voted more often with the left-wing opposition than with the centre-right parties. On the other hand, the BBB is in favour of a more stringent migration policy and stepping-up the investment in motorways.

Several politicians and media commentators have suggested that most BBB voters are older, less-educated people. Admittedly, the BBB is less popular among young voters, but the level of education is a fairly good reflection of the levels among the age groups from which the BBB draws most of its voters.

In this respect, too, the caricature of populism does not really fit. Furthermore, in contrast to other so-called 'populist' parties (such as Wilders' PVV and the extreme-socialist SP on the left wing) the BBB does not wage opposition at any price. Van der Plas and her party members have intimated, also since their March election victory, that they want to bear the responsibility of governance in the provinces and use the clout of their seats in the Senate to deflect cabinet policy.

Nitrogen and the farming businesses under threat

The BBB's main policy is its aspiration to put an end to the uncertainty that cabinet policy has introduced for farmers, and cattle farmers in particular. The issue is that, inspired by the political party D66, the second largest party in the present House of Representatives, a very substantial reduction of nitrogen emissions was incorporated into the coalition agreement of the Rutte IV cabinet.

D66 is the most left-wing of the coalition partners, and calls itself 'social liberal' (but it has been adopting an increasingly collectivist attitude). This reduction in emissions should theoretically prevent the further erosion of flora in numerous (often small) areas to which a protected-nature status has been attributed, because it is from agriculture in particular that a huge contribution to the nitrogen deposition in these protected areas is expected. The cabinet wants to achieve this chiefly by reducing overall livestock numbers, or even by the compulsory purchase of complete farming operations.

Although the agricultural sector has already realised a substantial reduction in nitrogen emissions by means of innovations, and also by decreasing livestock numbers, a methodical approach has been agreed at the instigation of left-wing coalition partner D66 which includes considerable reduction objectives that were to have been realised in 2030.

In the process, D66 is even demanding that livestock numbers be halved. Furthermore, the cabinet has not ruled out the instrument of the compulsory purchase of farms.

Such a policy might be able to count on the support of left-wing urban voters but, in more rural regions in particular, much resistance has been caused by the cabinet's rigid adherence to the methodical objectives and the imminent violation of property rights.

The BBB has indicated that two elements must be removed from the agenda without fail: firstly, that the proposed nitrogen reduction must have been fully realised in 2030 and, secondly that farmers may be subjected to compulsory purchase orders.

This may seem to be restricted to the interests of farmers, but the broad support of the BBB by wider society is indicative of a more fundamental aversion to the passion of politicians, civil servants and environmental organisations (often funded by taxpayers) in general for more and more regulation.

To many people, it seems that a reality exists in the governmental centre of The Hague which is expressed in the form of rules on paper – or worse, in computer systems – in which abstract goals are laid down and, quite frequently, stepped up. This bureaucratic reality clashes with the materially visible reality inhabited by farmers and citizens which lies beyond the realm of governance. This phenomenon is not typically Dutch.

Centre of power versus periphery and a culture war

Outside the Netherlands, the country is often referred to as Holland. Holland is not, however, the same thing as the Netherlands. Holland, which is situated in the west of the country, consists of 2 of the 12 Dutch provinces.

If you add to Holland the most centrally-situated province of Utrecht, you have the 3 provinces in which 'the Randstad' is situated (a group of major cities including Amsterdam, Rotterdam, The Hague, Utrecht, Haarlem, Leiden, Delft and Dordrecht).

Even within these three provinces though, there are areas with a rather more rural or semi-rural character, such as a large area directly north of Amsterdam. In addition, the Netherlands includes 9 other provinces situated outside of this centre, and home to some 54.5% of the population.

Many of those living in the so-called peripheral provinces harbour a latent suspicion that they are being slighted.

Added to this is the feeling which has existed for some years now that their areas are being overlooked when it comes to investment in infrastructure or culture and other amenities, while at the same time being expected to accommodate a disproportionately large number of asylum-seekers and install windmills – not the charming touristic versions but rather the tall, modern, horizon-polluting noisy ones – in their landscape.

Many people in these peripheral provinces have the feeling that a small group of left-wing voters – cosmopolitan and progressive – in the Randstad and the university cities are in favour of migrants and modern windmills, as long as these are accommodated in the outer provinces, as far from their own surroundings as possible.

In addition, the feeling of many ordinary Dutch people is that an attack is being carried out on their traditional way of life under the dubious flag of diversity.

This is affecting traditions that are cherished throughout the Netherlands, but above all in the outer provinces, ranging from village entertainments like 'road bowling' – popular in the eastern part of the country – to the

national celebration of Sinterklaas festivities, when the eponymous Christmas saint is accompanied by his highly contentious black helper, Zwarte Piet.

There also appears to be a gradual undermining of regional dialects and of the Dutch language itself. Many higher-education establishments conduct a policy of internationalisation, not least because it yields financial benefits. This implies that many students must be attracted from aboard, and is why many lectures are now delivered in (often very poor) English instead of Dutch.

International students are also prioritised in the allocation of the scarce accommodation in the cities where education is provided, with the result that Dutch students are often compelled to remain living at home with their parents for the period of their study and beyond.

Discontent and democracy

One common denominator behind this dissatisfaction which causes it to pervade the big cities as well, is the fact that voters have noticed that the government no longer delivers what they expect, and that traditional politicians orient themselves to a policy reality rather than to the reality inhabited by ordinary citizens.

To an increasing degree, this policy reality is determined by verdicts from unelected judges, who allow their own political bias to resonate in the interpretation of laws and treaties (judicial activism).

These judicial verdicts are then presented – in combination with EU directives from Brussels – as adamantine (or TINA; 'there is no alternative').

Dutch people are definitely not inclined to rise up against judicial power as such, or even against EU membership, but increasingly often they are noticing that political decisions are no longer being made by democratic process but are rather being determined by untouchable institutions.

For the greater part, these phenomena are not unique to the Netherlands; similar growing dissatisfaction exists in many countries.

To a degree, the Netherlands distinguishes itself from quite a few other countries in that, thanks to its electoral system, such dissatisfaction can easily be translated into seats in parliament. The Netherlands has a system of proportional representation, with an electoral threshold that is not higher than the number of votes required for one full seat.

This means that, for the House of Representatives, this threshold consists of a 150th part of the electorate, and that dissatisfaction can be channelled along democratic lines.

This happened in the recent provincial elections through a massive vote for a moderate party, which has been unjustly depicted as a sign of extremist populism.

It is now up to the old, established parties to show that the protest vote has indeed been heard, and that the casting of it has been meaningful. If voters are able to see this, democracy will have worked and faith in the democratic system will continue to be high. ■

Patrick van Schie is a historian and Director of the TeldersStichting, the liberal think tank of the Netherlands

Britain's road to Brexit

Patrick Minford evaluates the progress being made on the Brexit agenda, focussing on trade, regulation and the EU border

In this article I evaluate the progress being made in the Brexit agenda. This has always been one of long-term reform, involving trade with the EU and the rest of the world, as well as the restoration of UK-based regulation.

Free trade: the official assessment misunderstands the gains from international trade agreements

Britain has just signed a highly significant trade agreement with nearly a dozen Asian countries - the Comprehensive and Progressive Agreement for Trade Partnership, the CPTPP; call it the Trans-Pacific Partnership, TPP, agreement for short.

According to the Department of Trade's official assessment the TPP will add 0.08% to UK GDP in the long run, which has been derided by Remainer opinion as negligible compared with the supposed loss of GDP due to lower EU trade, set at 4% of GDP by the Office of Budget Responsibility, a government-funded budgetary watchdog.

These official estimates are flawed by two key mistakes. First, they are based on so-called 'gravity' models which assume that trade effects of trade liberalisation fall off the higher the distance of a trade partner. Second, they assume that trade barriers with the EU must be raised by Brexit in spite of the Trade and Cooperation Agreement, TCA, with the EU whose aim is precisely to eliminate trade barriers between the UK and the EU.

Start with the second; it takes time first for negotiations on numerous details to be concluded, as the long discussions on implementing the Northern Ireland Protocol of the TCA illustrate. It also takes time for people and businesses to adapt to the new border processes. But as the recent agreement on the Protocol show, they eventually succeed.

It is reasonable to assume that other details will similarly be sorted out over time; hence we should assume the TCA achieves its long run objective of removing trade barriers with the EU, in which case there will be no long run EU trade effects.

Now turn to the first issue of the gains from wider trade agreements, found to be minimal by the official model used. In our trade modelling work at Cardiff University, we have repeatedly tested the 'gravity' model on different countries' data and found it to be widely rejected.

One of the major objectives of Brexit is to replace the EU's intrusive precautionary principle with the pragmatic common law principles under which experimentation is permitted to enable vigorous innovation

The reason is that while of course 'gravity' (ie. distance and size) does affect the extent of trade by itself, the effects of trade liberalisation and other changes over time have rather similar effects on all trade and they work by bringing down national prices into line with world competition; a model along these lines is generally consistent with the data.

The 'gravity' model that says they have limited price effects and disproportionately affect nearer and larger trade partners is generally rejected by the data.

How the gravity model fails in tests of its ability to mirror long term trade trends

Many followers of economic debate think that a good test of a theory is its ability to forecast future events. But it turns out that forecasting well is a bad test of a model; many poor models forecast well, and many good models forecast badly.

Forecasts in other words have little to do with how well a model understands the underlying causal processes at work, which is what we care about. Models that are based on exploiting lagged indicators usually do better than good causal models, and all forecasts are upset by big shocks that are unforecastable, reducing forecasting ability all round and making forecast success largely a matter of luck. This criticism also applies to 'likelihood ratio' testing which is based on models' capacity to forecast past data accurately.

Instead, a reliable way of testing models is to ask if they can mimic the behaviour of real-world data. This behaviour is produced by the unknown true model, so the closer a model can get to producing similar behaviour, the greater its claim to be the true model.

This test of a model is known as 'indirect inference' testing; in this method the data behaviour is described accurately by some past relationships found in the data, and the proposed causal model is simulated to see if it implies relationships close to this- and so is 'indirectly' similar rather than 'directly' forecasting data.

In repeated 'Monte Carlo' experiments using mocked-up data from supposed true models we have found that these indirect inference tests are extremely powerful in rejecting false models, whether of the macro economy or of trade.

In recent work at Cardiff we have asked whether a model of world trade including all the major countries or country blocs of policy interest- the US, the EU, China, the UK, and the rest of the world- can mimic these countries' behaviour in trade and output.

We have a 'classical' and a 'gravity' version of the model. The results are striking - as the table below of the probabilities of each model for each country and the world as a whole show rather strikingly. What can be seen is that the gravity model probability falls in all cases below the 5% cut-off level (ie. 0.05), while the Classical model generally has a probability well above this level.

The only exception is the US whose individual facts are not well fitted by either model. Nevertheless, the Classical model fits the world as a whole very well. It also fits UK trade facts particularly well.

You might ask why so many economists adhere to gravity models in commenting on Brexit. The answer seems to be that these models do quite well in mimicking short term macro behaviour, in effect behaving like business cycle macro models, which frequently use the same gravity assumption that trade in different countries' goods compete imperfectly.

Table 1. Test results of the full world global model

Country	P-values	
	Classical model	Gravity model
UK	0.2429	0.0412*
US	0.0037*	0.0078*
Euro area	0.0936	0.0114*
CH	0.0829	0.0142*
World	0.3095	0.026*

*Note: P-value * indicates a rejection of the model at 5% significance level.*
Source: Minford, P, Dong, X, Xu, Y (2021)' Testing competing world trade models against the facts of world trade', Cardiff Economics working paper E 2021/20.

But while this assumption works well for the short run, in the long run it breaks down as competition irons out differences between products. We know that in the short run Brexit is bound to cause disruption, but the whole point of Brexit, as we have seen, is to improve long run performance - in the process ironing out the EU trade disruption through the improving TCA.

This testing failure of the gravity model, as we have just seen, applies strongly to UK trade in particular (as found some time ago in earlier work of ours)

The TPP countries currently account for about 6% of our trade in goods- largely food and manufactures. But the key point totally missed in the official assessment is that our importers will now have a barrier-free source of these goods for them to access if they need to and our exporters will have their markets to sell to; this via competition will reduce our import and export prices on these goods to world levels.

This in turn impacts on our consumer choices and our production structure. Eliminating the trade barriers to these goods that we inherited from the EU- which are estimated to average about 20% - would according to our detailed model of UK trade and the economy increase UK GDP in the long run by around 6% - a big gain, very many times the official estimate - and lower consumer prices by 12%.

This is the 'static' benefit, assuming trade does not grow, as of course it will, given that Asia is a fast-growing part of the world economy.

A natural reaction to this estimate will be that, just as the official one was far too small, this one is extravagantly large. It is certainly true that it is based on a long-term assessment, not the short term gravity models used by Remainers.

It also assumes that in the long term there is free trade within this Pacific bloc which is the aim of the TPP; the initial agreement is hedged about with quota restrictions on the amount that can be freely traded but these should be eventually phased out as markets develop and confidence expands that they are not disrupting them; UK businesses will be incentivised to accept easier import access by the reciprocal access for their exports.

Furthermore, the TPP is due to expand as new members join; those interested include S Korea, Thailand, several Latin American economies and both Taiwan and China. The US could also return to being a member. As it expands the TPP will reinforce these competitive effects on our economy.

The gravity models used to condemn Brexit are short term in focus, not much different from the 'macroeconomic' models we use for analysing the business cycle. Hence, they put much emphasis on the short-term EU trade disruption due to the mere fact of creating a new border, which in time with the TCA and WTO rules on 'seamless' borders should disappear; and they do not factor in the long-term effects of lowering the large EU barriers against non-EU trade.

It is these that loom large in the classical trade model that properly explains long term trade/economy movements. Unfortunately, commentators generally look for quick results from policy changes that can only work well in the long term. Brexit was always about the long-term economic gains from self-government and not about quick wins.

Our estimate is aimed at this long-term situation; it is large relative to the short-term and it will take a long time. But Rome was not built in a day, nor will post-Brexit Britain emerge blinking successfully from transitional problems in just a few years.

How this free trade agenda leads to a full Brexit with EU irrelevance

Because of the short-term focus of the current Whitehall consensus gravity model, it is not well understood just what radical implications this free trade has for our future relations with the EU.

As we have seen in the long-term free trade implies equalisation of our home prices with world prices, which in turn means that we would export to the EU at these very same prices and would only import from the EU goods that were priced at the same competitive level.

This means that any threats by the EU to levy tariff or other trade barriers on UK goods in the course of any future negotiations on the TCA and any proposed new UK regulations, would be entirely empty. The reason is simple

enough; UK export prices to the EU would be unaffected, as for example should they fall, UK goods would be diverted to other world markets at the full world price.

Hence any EU trade barriers would simply raise the prices paid for UK goods by EU consumers. Should EU sales suffer as a result, then more goods would be sold elsewhere at world prices.

Similarly, if the UK were to raise barriers against EU imports in retaliation against any such EU barriers, it would not affect UK prices of these imports as they would have to compete with world imports to be sold at all. As a result, EU sellers' prices would be reduced. If as a result they supplied less imports, these would be replaced by imports from elsewhere.

It follows that the TCA itself would become irrelevant, dominated as our trade with the EU would now be by the prices prevailing in the world at large. Furthermore, the EU would get most welfare from UK trade free of barriers as this would keep down the prices of UK goods to its consumers and keep up the prices of its UK exports to world prices.

Hence, we would expect that our relations with the EU would default to barrier-free trade. As for UK regulations, the UK would be entirely free to set them as it suited it best, free of EU trade threats.

Progress in restoring UK-based regulation

It can be seen from this trade analysis that the UK will be unrestricted in its ability to restore UK-based regulation once free trade around the world is created. Meanwhile there has been progress on this front on the ground.

The Retained EU Law Bill currently going through Parliament mandates the sunsetting of all remaining EU regulations by the end of 2023; while this target date has now been abandoned as too ambitious, it is reasonable to assume the sunsetting process will be completed in the next year or so.

Most significantly in any case, existing regulations by now are all the responsibility of UK regulators, under the direct control of Parliament. This will ensure that UK regulation is done by new UK processes supervised by UK law and regulators in consultation with UK industrial interests. The sunset deadline forces these bodies to work urgently to find optimal UK replacements.

One of the major objectives of Brexit is to replace the EU's intrusive precautionary principle with the pragmatic common law principles under which experimentation is permitted to enable vigorous innovation. As long as EU regulations are left in place by default, their replacement is delayed by bureaucratic inertia. As nature abhors a vacuum, so the abolition of remaining EU regulations should stimulate the necessary consultations to produce new UK-based regulation.

Conclusions

What this all implies is that the Brexit agenda is indeed being rolled out, contrary to much Remainer vilification, and is set to bring material long term benefits to the UK economy as this continues, besides ensuring that Brexit is fully completed.

Meanwhile EU trade will continue to bounce back in the short run as the government continues to negotiate the necessary details to achieve the TCA's aim of free trade with the EU. With Brexit now well on track, it is important that our Civil Service establishment gets behind it and does not minimise its significance.

We should add that those wanting Brexit to succeed in the long run should not be afraid of an agenda for improving the TCA and relations with the EU, fearful of making concessions over short run issues. What our analysis here shows is that in the long run, once free trade truly prevails, the UK will be entirely free to set its own trade and regulative policies, regardless of EU pressures. ■

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The problem with preferential trade agreements

Preferential agreements can be an alternative to a sclerotic WTO, but, if multilateral rules fail, they also risk conflict between trading blocs. Uri Dadush and Enzo Dominguez Prost discuss

The multilateral rules that govern world trade are eroding. The World Trade Organisation (WTO) is struggling to make substantial progress on reform and its Appellate Body, which adjudicates in trade disputes, is disabled. At least twenty unresolved WTO disputes remain in limbo. Meanwhile, the trade war between China and the United States is intensifying. In the US, national security considerations (real or imagined) dominate trade policy.

Preferential trade agreements[1] (PTAs), however, continue to proliferate. Capitals react to the undermining of WTO rules by reassessing alternative arrangements to keep trade open and predictable, and to defend themselves against lawlessness.

This is the right response but it is not sufficient. The trend towards preferential trade agreements has dangerous systemic implications. If, in a fraught geopolitical environment, multilateral rules are allowed to fail, world trade will become increasingly regionalised and fragmented. This implies a substantial loss of efficiency and a greater risk of trade conflicts within and between regions[2].

PTA trends

After a remarkable advance from the 1950s to 2010, by when they covered about 60 percent of world trade, the expansion of PTAs[3] has slowed. Nevertheless, their role has been reinforced, since the composition of agreements has shifted markedly towards PTAs that are reciprocal, deeper, broader and more enforceable.

For example, the export coverage of reciprocal trade agreements (ie. excluding unilateral preference schemes such as the Generalised System of Preferences) increased from 50 percent of world trade in 2010 to 55 percent in 2020.

To be clear, this does not mean that most of world goods trade benefits from preferences since – underscoring the importance of the WTO acquis – about half of all Most Favoured Nation (MFN) applied tariffs are set at zero anyway, and PTAs cover only a part of trade among the parties to the agreement, and even then, the preferences they provide for are not always used. Estimates placed the average trade-weighted preference margin at nearly 1 percent in 2008 (Krishna *et al* 2012).

The trend towards preferential trade agreements has dangerous systemic implications. If, in a fraught geopolitical environment, multilateral rules are allowed to fail, world trade will become increasingly regionalised and fragmented

However, WTO MFN treatment, the counterfactual in standard calculations of the effect of a bilateral trade agreement, can no longer be considered certain. Accordingly, if countries can no longer assume that WTO treatment will continue, the gain they will expect from a PTA will be far larger.

The most prominent and systemically significant PTAs are mega-regional agreements. The European Union is the oldest and most advanced. No new mega-regional agreement has been concluded since NAFTA in 1994. The last five years have seen the revision of NAFTA – replaced by the US-Mexico-Canada Agreement (USMCA) – and three new agreements: the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the African Continental Free Trade Area (AfCFTA) and the Regional Comprehensive Economic Partnership (RCEP). Countries accounting for about 78 percent of world GDP are now part of a mega-regional agreement.

Since the global financial crisis, the additional trade covered by PTAs has overwhelmingly concentrated among countries in Asia or has involved an Asian partner. Ten agreements explain 93 percent of the additional export coverage worldwide.

Strikingly, eight of these agreements were among Asian countries or involved an Asian country. EU-Canada and AfCFTA are the only two agreements among the top eight ranked by additional export coverage that do not include an Asian country as a partner.

Meanwhile, the trading powers have followed different paths, with China especially active in negotiating new PTAs and the EU pursuing an active and long-standing programme, while the US has stood back entirely from new agreements beyond the renegotiating of NAFTA into USCMA.

Table 1 shows the share of each country's exports covered by reciprocal agreements for each of the big trading nations, ie. excluding unilateral preference programmes. The 2020 data does not include RCEP.

Notable in Table 1 is the advance in trade coverage of the EU from 2010 to 2020, accounted for mainly by the entry into force of trade agreements with Japan, Canada and Korea, and the exceptionally high agreement coverage that individual EU countries achieved through EU intra-trade and extra-EU agreements.

Also of note is the advance of China and Japan since 2000, when neither country was a party to a reciprocal trade agreement. The table does not include RCEP. Once RCEP enters fully into force, 55 percent of Chinese exports

Table 1. Share of country exports covered by reciprocal PTAs (excluding unilateral preferences)

Year	Brazil	China	Average of EU members	EU*	India	Japan	USA
2000	25%	0%	77%	44%	5%	0%	38%
2010	24%	33%	78%	42%	28%	17%	41%
2020	16%	40%	81%	50%	30%	31%	44%

*Note: * the EU is defined as including its members at that time. The average of EU members includes intra-EU trade; the EU column refers to the share of extra-EU trade covered by the customs union's trade agreements with other countries or blocs. The decline in export coverage for Brazil from 2010 to 2020 resulted from the rapid growth of its exports to China and other Asian nations, with which it did not have trade agreements at the time.*
Source: Bruegel based on UN-COMTRADE and NSF-Kellogg Institute.

and 65 percent of Japanese exports will be covered by PTAs. The US has a low share of exports covered by trade agreements and is falling behind in promoting market access at home and abroad.

Driven by the search for alliances in an increasingly unstable world order, trade policy uncertainty and other powerful motives, the quest for deeper PTAs will soon cover about two-thirds of world trade. PTAs are almost certain to proliferate further in the coming years.

Good, but also bad

In many ways, the proliferation of PTAs is a good thing. The trade coverage of PTAs is now so extensive that under any assumption about the future of the multilateral trade rules, they will play a key role in keeping large parts of world trade secure.

In many instances PTAs now include more parties, have coverage that is both broader (eg. market access in services, investment) and entail deeper reforms ('behind the border') than under the WTO. They are also increasingly enforceable. 'Deep PTAs' can benefit.

However, the world's most important bilateral trade relationships – those between China, the EU and the US – remain uncovered by PTAs or even partial deals, as negotiations between them have failed or stalled. If WTO rules continue to erode, there will be a rules vacuum among the trade giants (and among the 27,000 bilateral trade relationships not covered by PTAs at all).

Although the three big bilateral trade relationships (China-EU, China-US and EU-US) each account for only 3 percent to 4 percent of world exports (11 percent in total), it is in this arena that the possible fragmentation of the world trading system will be decided.

The giants are each part of PTAs/mega-regionals in their respective regions. In these, they play dominant roles, so – as multilateral rules erode – there is a strong temptation for the giants to push 'friend- shoring' or 'near-shoring'. Firms faced with this uncertainty will be inclined to follow and partition their supply chains regionally, implying duplication and inefficiency but not necessarily withdrawal from global markets.

Many politicians, and the increasing number of commentators who pander to them, are comfortable with this course or advocate it, but regional markets will go only so far – economies do not and cannot rely only on their own regions.

In 2021, 70 percent of North America's exports, 41 percent of Asia's, and 31 percent of Europe's went outside their respective regions, while Africa and Latin America depend on other regions for 85 percent of their exports.

Trade is global, as it has been since at least as far back as the great explorers of the fifteenth and sixteenth centuries. Only today, the connections are far deeper.

The prevalence of global value chains (GVCs), which according to the World Bank, now account for more than half of world trade, means that there is heightened dependence on coordinated international production, trade in intermediate inputs and the crossborder sharing of technology.

For these reasons, regionalisation and trade fragmentation is bound to lead to disruption, duplication and vastly reduced efficiency. A WTO study (Bekkers and Goes, 2022), for example, illustrated how *"technological decoupling"* could be profoundly damaging to the prospects of all nations, especially developing countries.

A World Bank study (Brenton *et al* 2022) concluded that *"steps toward creating a more 'hostile' environment for Global Value Chains, with a shift toward global reshoring to high-income countries and China, could drive an additional 52 million people into extreme poverty … In contrast, measures to reduce trade barriers … could lift almost 22 million additional people out of poverty by 2030."*

Furthermore, the regional blocs are not cohesive, reflecting the differing economic and security interests of members, and between the members and the regional hegemon. Smaller members and the middle powers will be forced into asymmetric deals with the hegemon, try to play off the hegemons against each other, or both. This means that the politicisation and weaponisation of trade relations is likely to increase even within regions.

Avoiding the worst-case scenario

Looking forward, the most damaging scenario is the one to which the world is presently headed, in which the WTO rules become increasingly eroded and the regional hegemons eschew deals with each other. As stressed by those who early on saw PTAs as *"stumbling blocks"* of multilateralism (Bhagwati, 2008), the dynamics inherent in the proliferation of PTAs are worrisome.

Already some small and middle-sized countries, including Chile, Mexico and Morocco, and large economies, including Germany and France, are party to numerous PTAs covering 80 percent or more of their trade. In a sense, these nations have already hedged their geopolitical bets, which is a good thing.

But do countries so reliant on PTAs still have a reason to engage in WTO negotiations? And is there a systemic tipping point beyond which reliance on PTAs makes impossible multilateral deals, which require consensus and sacrifice?

This worst-case fragmentation scenario is reminiscent of the trade relations of the eighteenth and nineteenth centuries, when empires and colonial systems competed for markets and natural resources and imposed trade rules and navigation laws in their spheres of influence – frequently resulting in military conflict.

The old idea that trade helps promote peace is often dismissed as simplistic, citing many counterexamples, but it is notable that while wars among the great powers occurred almost continuously over the last six centuries, there have been no wars directly involving the world powers since the 1950-53 Korean War (Roser *et al* 2016).

The best scenario, which is presently low probability but to which policy must aspire, is a revitalised WTO with enforceable rules and deals among the trade giants that address specifically the key issues that divide them. Indeed, in a globalised economy, it is difficult.

The best-case scenario for the trading system almost certainly begins with an accommodation between China and the United States. In the concluded Comprehensive Agreement on Investment (CAI) negotiations, and in its application to the CPTPP and in other ways, China has signalled it is willing to consider trade reforms that address some of the concerns of partners. Legal experts broadly agree that China is living up to the letter of its WTO obligations (Zhou, 2019).

However, there is no sign that the Chinese leadership is about to change its statist model, and China's government appears to be reinforcing its reliance on state owned enterprises and to be extending Communist Party control over the private as well as the public sector. The US says that it sees the relationship with China as one of competition, not enmity.

If that is true, eventually, the US leadership will recognise that it will not prevail in that competition by disregarding trade agreements, ignoring WTO rules or decoupling from China, a course that even its closest allies reject. ■

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Endnotes

1. We refer to PTAs as including all forms of preferential trade agreement, including customs unions and free trade agreements under WTO Article 24, which have to cover "substantially all trade", trade agreements among developing countries that are not subject to the 'substantially all trade' provision under the Enabling Clause (see https://www.wto.org/english/docs_e/legal_e/enabling1979_e.htm), and preferences accorded unilaterally under the Generalised System of Preferences (GSP).

2. This analysis is based on Dadush and Dominguez Prost (2023), which is available open access on the World Trade Review portal and includes the calculations and datasets used in this assessment.

3. We refer to PTAs as including all forms of preferential trade agreement, including customs unions and free trade agreements under WTO Article 24, which have to cover "substantially all trade", trade agreements among developing countries that are not subject to the 'substantially all trade' provision under the Enabling Clause (see https://www.wto.org/english/docs_e/legal_e/enabling1979_e.htm), and preferences accorded unilaterally under the Generalised System of Preferences (GSP).

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The slow American protectionist turn

Pascal Lamy argues that the protectionist shift in US policy is not recent, and can be traced back about 15 years

The adoption by the US Congress of the Inflation Reduction Act caught out those in Europe and elsewhere who, after the Trump presidency and its tariff aberrations, expected the Biden–Harris administration to respect its multilateral commitments within the WTO.

This column argues that this view ignored the fact that the protectionist shift in the US began about 15 years ago, and that it is the product of structural forces whose actions have gradually modified the political balance in favour of trade openness that had prevailed in Washington since the 1950s.

In Europe and elsewhere, the adoption by the US Congress of the Inflation Reduction Act (IRA)[1] was a thunderclap because of the protectionist nature of certain provisions allowing subsidies for vehicle electrification which are contrary to international trade law (European Parliament 2023, Lester 2023). After the Trump presidency and its tariff aberrations, the US under the Biden–Harris administration was expected to respect its multilateral commitments within the WTO.

But this naive view ignored the fact that the shift began about 15 years ago, and that it is the product of structural forces whose actions have gradually modified the political balance in favour of trade openness that had prevailed in Washington, not without some lurching, since the 1950s.

One can identify four of these forces, all of them specific to the US. Each one has an inflection point: 2008, 2011, 2016, and 2018.

The first force is institutional, namely, the combination of the primacy of the legislature over the executive in the conduct of foreign trade policy with the weight of money in the electoral system and the over-representation of farm states in the Senate.

Hence the overpowering influence of pressure groups such as the cotton, sugar, and grain growers. In 2008, the American negotiator blocked the adoption of a reduction in agricultural subsidies that would probably have paved the way for the conclusion of the Doha Round launched in 2001 (Blustein 2009).

After the Trump presidency and its tariff aberrations, the US under the Biden–Harris administration was expected to respect its multilateral commitments within the WTO

The second force, of the same order, and also structural, is the refusal by the US, and especially Congress, of any international discipline that might not work to their advantage. Some observers thought that the creation of the WTO in 1994, with its compulsory dispute settlement mechanism, had opened a breach in this tradition.

But this was without counting on the rising resentment of American lawyers who had lost cases in Geneva and who, disgruntled, obtained from the Obama administration the non-renewal in 2011 of the American judge on the WTO court of appeal, an exceptional event.

This second date went unnoticed, except by a few aficionados; but it was the prelude to the Trump administration's attempt, this time in large format, to sabotage the WTO's jurisdictional system.

The third force is the weakness of the US social security system and its inability to cushion the painful impact on some workers of technological change and open trade.

This American ideological constant of a preference for more efficient and therefore more brutal capitalism has logically produced a rise in protectionist resentment in some regions harder hit than others, slowly but surely eroding both the Democratic minority and the pro-openness Republican majority that had long provided the narrow majority needed in Congress to ratify trade agreements.

Hence the non-ratification of the major trans-Pacific agreement signed in 2016: this third date preceded the American withdrawal by Trump in 2017. This is also reflected in the current narrative of a trade policy 'for the middle class', a way of softening and somehow masking this hard-line version of capitalism.

The last force is, of course, the Sino-American rivalry (Nye 2021), which has now become structural and predominant in the American vision of the world, and whose acceleration dates from Xi Jinping's total takeover of Chinese power in 2018 when he obtained the reform of the constitutional provisions that limited the length of his reign.

From a Washington point of view, the WTO is useless against China, which is why it is being deserted. The trade distortions caused by massive Chinese subsidies are rightly criticised, but neither the US nor other trading powers such as the EU or Japan have ever made a serious attempt to remedy the congenital weakness of the WTO's anti-subsidy disciplines.

It is easy to see why with the aforementioned IRA. And today I'm afraid I probably lacked foresight and adopted an overly defensive attitude when, as the EU Commissioner for Trade from 1999 to 2004, I gave way to French and other Europeans concerns that the EU could suffer from a tightening of the WTO net.

If this analysis is correct, it should be clear that the American protectionist turn has been taken for a long time and will last long, as one doesn't see the main forces that provoked it changing direction, starting with the desire to push China back.

This raises formidable questions for us Europeans (eg. Kleinmann *et al* 2023), and probably even more so for emerging and developing countries, even though unfortunately there is little evidence of this today.

When the world's leading economic and therefore political power, also benefiting from the international primacy of the dollar, exempts itself from a multilateral trade system that is certainly imperfect, but based on rules to give everyone a chance, and leaves room only for force, there are only two equally problematic options left.

The first is to do just as the US, but without the dollar, by further hardening globalised capitalism. But this is not, fortunately from my point of view, the European tradition.

The second option is to rebuild with several countries a North–South coalition promoting open trade while respecting various collective preferences, the most common of which is now environmental protection.

Such a coalition would start from what already exists, but without the Americans, hoping to create a disadvantage for them that would make them change their position. This is the strategy that I would prefer. ■

Pascal Lamy is President of the Paris Peace Forum

Endnote

1. See also The White House (2023).

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World trade can still drive prosperity

New protectionist policies threaten the global economy. Kristalina Georgieva and Ngozi Okonjo-Iweala argue that international trade goes hand in hand with global prosperity and stability

Rising from the ashes of three disastrous decades of deglobalization, extremism, and world war, our two institutions were built on the idea that thriving international trade goes hand in hand with global prosperity and stability. On balance, the post–World War II record has been impressive.

Today fewer than 1 in 10 of the world's people are poor, a fourfold reduction since 1990, as low- and middle-income countries have doubled their share of global trade. Pivotal to this leap in global income is a twentyfold increase in international trade since 1960.

Yet the tide is turning against economic interdependence and international trade. Trade restrictions and subsidies increased after the global financial crisis, and tensions escalated further as governments responded to the pandemic and Russia's war in Ukraine by scrambling to secure strategic supply chains and rushing into trade-distorting policies.

Taken too far, these measures may open the door to alliance-oriented policies that reduce economic efficiency and fragment the global trading system. They could backfire if short supply chains end up more vulnerable to localized shocks. Foreign direct investment is already increasingly concentrated among geopolitically aligned countries.

Should we abandon the idea of trade as a transformative force for good? Our answer is a resounding *"No!"* Despite all the talk, trade has continued to deliver even during recent crises. It has great potential to keep contributing to higher living standards and greater economic opportunities for decades to come.

There are at least three reasons international trade is crucial for global prosperity. First, it increases productivity by expanding the international division of labour. Second, it enables export-led economic growth by providing access

to foreign markets. And third, it bolsters economic security by giving firms and households valuable outside options when negative shocks hit.

During the pandemic, trade and supply chains became vital to ramping up production and distribution of medical supplies, including vaccines. The power of international trade as a source of resilience has become evident again during the war in Ukraine.

We must cooperate tirelessly to strengthen the multilateral trading system and demonstrate that our own institutions can adapt to a fast-changing world

Deep and diversified international markets for grain enabled economies traditionally reliant on imports from Ukraine and Russia to make up shortfalls. Ethiopia, for example, lost all its wheat imports from Ukraine but now sources 20 percent of its wheat shipments from Argentina—a country from which it had not imported any wheat before.

Fragmentation's costs

In this context, fragmentation could be costly for the global economy. A scenario in which the world divides into two separate trading blocs could lead to a 5 percent drop in global GDP, World Trade Organization (WTO) research shows.

The IMF, meanwhile, reckons global losses from trade fragmentation could range from 0.2 to 7 percent of GDP. The costs may be higher when accounting for technological decoupling. Emerging market economies and low-income countries would be most at risk due to the loss of knowledge transfer.

Reinforcing the trading system to safeguard the benefits and prevent losses is important. But there is also an exciting forward-looking trade policy agenda that responds to the future of international trade, which we envision to be inclusive, green, and increasingly digitally and services driven.

Trade has done a lot to reduce poverty and inequality between countries. Yet we must acknowledge that it has left too many people behind—people in rich countries have been hurt by import competition, and people in poor countries have been unable to tap into global value chains and are often on the front line of environmental degradation and conflict over resources.

As we told Group of Twenty officials in a joint paper our institutions wrote with the World Bank, it need not be this way. With the right domestic policies, countries can benefit from free trade's great opportunities and lift those that have been left behind.

Addressing these underlying causes of discontent would solve people's problems more effectively than the trade interventions we see today. Well-designed social safety nets, greater investment in training, and policies in areas like credit, housing, and infrastructure that help, not hinder, workers to move across industries, occupations, and companies could all play a part.

The current push toward more diversified supply chains presents great opportunities for countries and communities that have struggled to integrate into global value chains: bringing more of them into production networks—what we call 're-globalization'—would be good for supply resilience, growth, and development.

Many of today's most pressing global problems will not be solved without international trade. We cannot overcome the climate crisis and get to net zero greenhouse gas emissions without trade. We need trade to get low-carbon technology and services to everywhere they are needed. Open and predictable trade lowers the cost of decarbonization by expanding market size, enabling scale economies, and learning by doing.

To provide one example, the price of solar power has fallen by almost 90 percent since 2010. Forty percent of this decline has come from scale economies made possible partly by trade and crossborder value chains, the WTO has estimated.

Cooperation's possibilities

By updating global trade rules, governments can help trade thrive in new areas that would expand opportunities,

for emerging market economies especially. Even as goods trade stalls, trade in services continues to expand rapidly. Global exports of digital services such as consulting delivered by video calls reached $3.8 trillion in 2022, or 54 percent of total services exports.

Some efforts are already underway. A group of nearly 90 WTO members, including China, the EU, and the US, are currently negotiating basic rules on digital trade. Shared rules would make trade more predictable, reduce duplication, and cut the compliance costs that typically weigh heaviest on the smallest businesses.

Similarly, multilateral cooperation and common standards could speed the green transition while preventing market fragmentation and minimizing negative policy spillovers to other countries. Bringing more small and women-owned businesses into global production networks—digital and otherwise—would spread the gains from trade more broadly across societies.

Despite geopolitical tensions, meaningful cooperation on trade remains possible. We saw this last June when all WTO members came together to deliver agreements on curbing harmful fisheries subsidies, removing barriers to food aid, and enhancing access to the intellectual property behind COVID vaccines.

Governments can build on those successes at the WTO's next ministerial meeting in February 2024. And recent work by our institutions points to a way to defuse tensions in sensitive areas such as subsidies through data, analysis, and common perspectives on policy design.

Navigating trade policies through the current turbulent period is challenging. But keeping trade open and looking for new opportunities for closer cooperation will be essential to build on existing gains and to help deliver solutions to climate change and other global challenges.

The IMF, WTO, and other leading international institutions have a critical role in charting a way forward that is in the collective interest. We must cooperate tirelessly to strengthen the multilateral trading system and demonstrate that our own institutions can adapt to a fast-changing world.

The IMF has a mandate to support the balanced growth of international trade. The WTO remains the only forum that brings all economies together to advance trade reform. We cannot afford to stand still. ■

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World Commerce Review is pleased to announce that Euro Exim Bank has been awarded the WCR Best CSR in Finance 2023.

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Navigating uncertainty

Petros Fassoulas and Aimée Duprat-Macabies stress the importance of social and green policies to build a just and resilient European economy

The pandemic health crisis, coupled with Russia's invasion of Ukraine, has cast a long shadow over European societies and economies. As the digital and green transitions reshape everything around us, it is imperative for the European Union to support its citizens in adapting to this changing reality.

This article emphasises the need for social and green policies that prioritise the wellbeing of individuals, address inequalities, and promote sustainable development. These recommendations align with the outcomes of the Conference on the Future of Europe, reflecting the collective voice of EU citizens, civil society, and social partners.

Economic challenges and labour market transformation

The EU is facing an uncertain economic outlook due to the side effects of the COVID-19 pandemic, the conflict in Ukraine, rising inflation, and a looming debt crisis. These crises have resulted in job losses, increased youth unemployment, and job insecurity. Despite positive productivity growth, real wages have stagnated or even declined in recent years.

To prevent this situation from leading to structural unemployment, it is crucial for the EU and national governments to provide short-term incentives that prevent long-lasting negative economic effects.

The EU must seize this opportunity to transition to a new model of growth that prioritises environmental sustainability and climate action. Redistributive measures, quality employment, robust social protection systems, and accessible quality services for all are vital components of this transition.

Replacing GDP as the sole indicator of prosperity with comprehensive metrics that encompass wellbeing, human rights, gender equality, and environmental protection is a crucial step in this direction.

The concept of the just transition should extend beyond specific regions and sectors, addressing the root causes of complex inequalities in Europe. Sectors most affected by the transition, such as mobility, transport, and construction, have predominantly male workforces, while sectors with predominantly female workforces are often overlooked.

The European Union stands at a critical juncture, grappling with the aftermaths of the health crisis, geopolitical tensions, and economic uncertainties. Urgent action is required to navigate these challenges and ensure a just and sustainable future

The EU should conduct a detailed analysis to identify other sectors that can contribute to a just transition, such as health, care, and education, which are already low-carbon and beneficial to society and nature.

Education and skills at the heart of the new model

The economic downturn has coincided with a growing number of unfilled job vacancies, potentially hindering key EU strategic priorities such as the European Green Deal. Reskilling programs and further education initiatives are essential for equipping workers, particularly those from vulnerable groups, with the necessary skills to adapt to the evolving labour market.

It is imperative to broaden the definition of 'frontline workers' to include sectors beyond the traditional ones and ensure their inclusion in relevant employment protections.

Education plays a vital role in fighting inequalities, promoting social mobility, and unlocking human potential. The EU should ensure that education aligns with the needs of the economy, facilitating job matching through adequate training programs.

Continued vocational education and training (VET) are essential in responding to structural changes in the labour market. Strengthening multistakeholder platforms like the European Alliance for Apprenticeship (EAfA) and increasing investments in vocational education will contribute to upskilling the workforce and fostering inclusivity.

To adapt to emerging opportunities in an evolving landscape, individuals need technical and transversal skills and the ability to continue learning throughout their careers. Dedicated funding should prioritise disadvantaged young people and ensure ongoing skills relevance and upskilling throughout their lifecycles.

Access to digital education programs, the teaching of digital skills, and awareness campaigns on the consequences of digitalisation and social media for democracy should also be enhanced.

The digital world must align with offline regulations

The shift to remote work during the pandemic has been significant and is likely to persist in the future. Consequently, we should adapt existing working rules and safeguards to encompass remote work conditions. This includes transposing non-remote working regulations into remote working frameworks to ensure equal protection for workers.

It is essential to consider the potential consequences of increased digitalisation, such as the deepening of the digital divide, invasion of privacy, and the blurring of work-life boundaries. In that regard, social partners are very important in shaping and implementing key digital rights, such as the right to disconnect, through collective bargaining.

Platform work has also rapidly gained prominence in recent years, particularly among younger workers, but often lacks adequate protection and rights compared to traditional employment.

We need clear criteria to differentiate between self-employment and false self-employment because all platform workers should have access to social rights and protection, while minimum standards should be set for those who may not qualify as employees.

Transparent algorithms, fair working conditions, and accessible redress mechanisms are essential components to safeguard the rights of platform workers.

Civil society and social partners have a key role to play

Ensuring robust social and civil dialogues at all levels of governance remains pivotal in shaping decisions related to employment, industrial relations, and social standards across industries and sectors within the European Union. The principle of non-discrimination and the universal right of association for workers, irrespective of their sector, must be upheld.

Key principles such as subsidiarity, proportionality, and the autonomy of social dialogue should be respected to protect EU social standards and workers' rights. Employers and trade unions, being intimately acquainted with labour market needs, should be equipped with the necessary means and tools to proactively anticipate changes and ensure the EU's central economic role while upholding the social acquis.

It is vital to safeguard fundamental rights and avoid any erosion of workplace standards or protections during emergency situations such as the COVID-19 pandemic and conflicts like the one in Ukraine.

While acknowledging the progress made in EU social and labour policies, it is crucial to extend support to vulnerable populations, including the long-term unemployed, Roma people, and migrants, who face multiple barriers to employment.

Civil dialogue, along with consistent consultation of civil society organisations representing marginalised groups, must be a core component of policy implementation. Efforts should focus on combatting discrimination in European labour markets, with labour and social legal instruments incorporating anti-discriminatory measures and affirmative actions.

Labour market policies should adopt a comprehensive, human rights-based, and person-centred approach. Commitment to the principle of co-determination in labour relations, facilitating collaboration between employers and employees in shaping working conditions, is essential.

Protecting and supporting the youth

The COVID-19 crisis has disproportionately affected young people, negatively impacting their employment prospects, income, educational outcomes, and mental health. Disturbingly, two-thirds of Europe's youth may now experience depression or anxiety, with marginalised youth facing the harshest consequences.

Policymakers must prioritise developing recovery plans that address the long-term impacts on young people, ensuring an intersectional approach to tackle the specific challenges faced by various youth groups.

Meaningful participation of young people and youth organisations is critical in shaping these plans. Enhancing the successful transition from education to employment, particularly for those graduating in the upcoming years, is imperative.

In addition, access to mental health and wellbeing support for young people should be expanded, recognising the relationship between socio-economic factors and mental health outcomes.

The EU should strengthen job creation schemes that offer quality employment opportunities for young people and contribute to their overall wellbeing.

Implementing dedicated quality standards at the European level will be instrumental in ensuring the success of programs such as the EU Youth Guarantee, while advocating for a ban on unpaid internships should be pursued.

Conclusion

The European Union stands at a critical juncture, grappling with the aftermaths of the health crisis, geopolitical tensions, and economic uncertainties. Urgent action is required to navigate these challenges and ensure a just and sustainable future.

It is imperative for the EU to prioritise the wellbeing of its citizens and the planet through the implementation of social and green policies.

Moreover, the EU must recognise the crucial role of civil society, social partners, and youth organisations in shaping policies and decisions. Genuine dialogue and collaboration are essential to build consensus and ensure that recovery measures leave no one behind.

EU policymakers, senior executives, and policy players should heed these recommendations and make the necessary commitments to drive transformative change.

Together, let us forge a path towards a fair and inclusive Europe, where prosperity, sustainability, and social justice go hand in hand. Only by working together can we build a resilient future for all. ■

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Is the steel industry on track to meet the world's climate goals?

Steel manufacturing contributes more greenhouse gas emissions than any other industry. An Atradius Market Monitor looks at steel manufacturing and the clean energy transition

Traditional steel manufacturing contributes more greenhouse gas emissions to our atmosphere than any other single industry (about 8% of global emissions). The energy intensive manufacturing processes include smelting iron ore in coke and coal fired blast furnaces; a technology that has remained unchanged for 200 years.

Cleaning up steel manufacturing to minimise or eliminate the release of greenhouse gases requires a massive undertaking, involving significant capital investments. To put it bluntly it needs a green industrial revolution.

Robert Leportier is the Head of Trade Credit Insurance at one of the world's largest steel producers, ArcelorMittal. During our last event on clean energy - *Clean Energy Transition: A New Way Forward for Global Trade* - he provided a unique insight into the enormous transformation green steel represents for the steel industry as well as his perspective as a credit manager.

He told us: *"Today the steel industry still using technology which dates back to the 19th century, meaning producing steel out of iron ore and coal in blast furnaces. And tomorrow, we focus on a complete change of technology, aiming to produce steel out of electric furnaces and using recycled steel fuelled by gas in a first step and hydrogen in the future."*

What does clean energy transition look like in steel?

Blast furnaces that smelt iron ore by burning coke and coal can be replaced by electric arc furnaces. This requires a lot of power, but if the electricity can be supplied from renewable resources, the steel can be regarded as 'green'.

Hydrogen can help reduce the industry's carbon footprint. When burned, hydrogen can be used to smelt the ore, while only emitting water instead of greenhouse gases.

If the hydrogen itself is produced using renewable electricity this process can be completely free of greenhouse gas emissions.

Grey hydrogen
Natural gas is used to power the creation of the hydrogen, but CO_2 is released into the atmosphere as part of the process.

Blue hydrogen
Natural gas is used in the creation of the hydrogen, but the CO_2 is captured and stored.

Green hydrogen
Green electricity is used in place of natural gas in the creation of the hydrogen and only oxygen is released into the atmosphere.

What insights can our underwriters provide into the clean energy transition in the steel industry?
We asked our underwriters in several key advanced markets to share their knowledge. Perhaps unsurprisingly cost was listed as a key issue in every market. Our underwriters noted that steel companies are concerned about the price and costs of electricity, as well as the levels of capital expenditure required to transition steel plants to carbon neutral manufacturing.

When we looked into the appetite for green steel in their markets, there was a greater spread of responses. Although no markets showed zero appetite, interest in green steel across markets ranged from strong interest to not so much.

This contrasts a little with research by the EU's Joint Research Centre (JRC) which asserts there is evidence of an emerging market that is willing to pay a green steel premium.

Challenges: what are the three most urgent challenges in the steel sector in the coming three years?

1. Cost, cost, cost

There are a range of challenges urgently facing the steel sector. Primary among these is cost. This includes the challenges presented by high transition costs and the difficulties of sourcing finance to fund the capital expenditure of modernising the steel plants.

Our underwriters in China explained: *"The carbon emission financing system is not mature yet, Currently, the capital support is insufficient to enable the expensive transition to clean energy."*

In addition, several markets questioned the ability to pass on costs to customers and whether customer were prepared to pay higher prices for green steel.

2. Supply chain sustainability

Securing and developing sustainable supply chains can also be a challenge, especially in terms of mining, transportation and processing of materials. Potential sourcing and commodity deficits provide challenges for many steel producers in France and the USA.

Our underwriting team in Japan noted: *"It's not just about steel manufacturing. Steel companies have to work with their suppliers to ensure sustainable practices along the supply chain, including in the raw materials and logistics."*

3. Energy security

The steel industry is energy intensive. Finding a secure clean energy supply is becoming an increasing challenge for steel producers and cited by several markets. The steel industry is energy intensive.

Finding a secure clean energy supply is becoming an increasing challenge for steel producers and cited by several markets including France, Poland, Germany, Italy and the Netherlands.

The latter also noted the challenge is not just about be able to obtain energy from renewable resources, but whether national grids have the capacity to supply enough green electricity to power the plants.

Opportunities: What are the top three opportunities in the steel sector in the coming three years?

1. Development of new markets

The greatest opportunity for the steel sector over the coming three years is the development of new markets. The steel industry is not the only one seeking to reduce carbon emissions. Industries that use steel and are aiming for net zero targets are driving demand for green steel, a demand that is likely to increase in the near future.

This is particularly true for electric vehicle manufacturers that are increasingly including Scope 3 emissions as part of their decarbonisation strategies. Scope 3 refers to the carbon emissions generated in the production of materials used in their cars. As a result, demand for green steel is growing.

2. Increased competitiveness

Several of our underwriters noted increasing competitiveness as an opportunity for the steel sector. As a result of increased demand for green steel, particularly in automotive but also in areas such as wind turbine production, producers of green steel can gain a competitive advantage over steel manufacturers that are slower to transition.

3. Key role in new technologies

Steel companies that invest in developing new and innovative applications for recycled steel can potentially create new markets and revenue streams, as well as reduce their environmental impact.

In addition to the manufacturing process itself, steel producers could benefit from investing in carbon capture and storage, and related new technologies.

How has the industry moved forward over the past six months?

In the months following our live event, *Clean Energy Transition: A New Way Forward for Global Trade* the steel industry has made great strides forward towards net zero. This forward momentum, however, is not uniform across the world.

The Atradius underwriting team in Germany explained that more steel manufacturers are investing in green steel production, which is also being marketed more aggressively. In Italy the Italian steel producer, Acciaieria Arvedi, announced they had the world's first zero emissions steel mill.

However, elsewhere progress towards climate goals is slow. High energy costs, low margins and challenges such as the Russian war with Ukraine have impacted consumption and had a dampening effect on progress towards energy transition. ■

Atradius
Managing risk, enabling trade
Market Monitor

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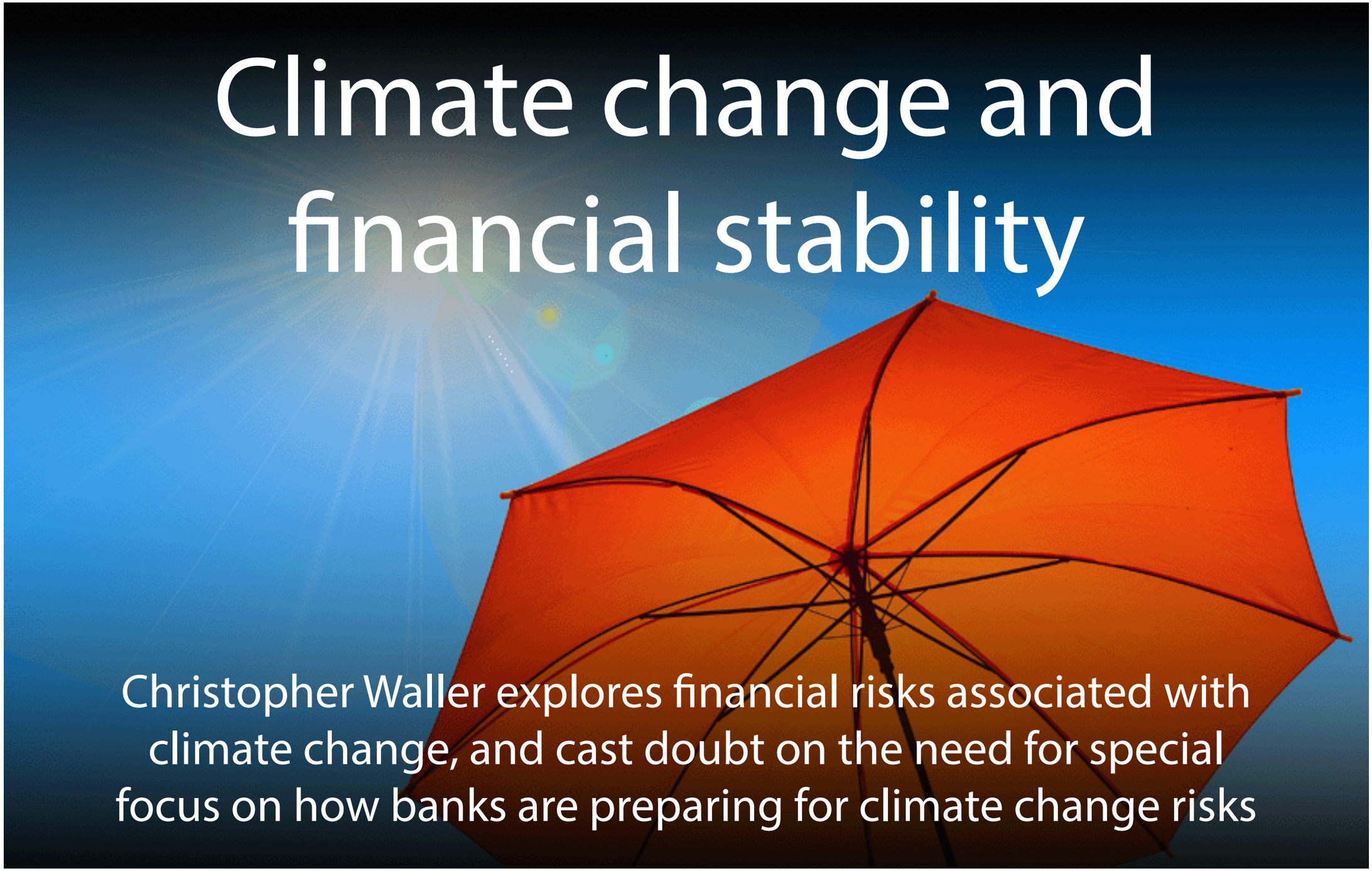
Climate change and financial stability



Christopher Waller explores financial risks associated with climate change, and cast doubt on the need for special focus on how banks are preparing for climate change risks

Climate change is real, but I do not believe it poses a serious risk to the safety and soundness of large banks or the financial stability of the United States[1]. Risks are risks. There is no need for us to focus on one set of risks in a way that crowds out our focus on others. My job is to make sure that the financial system is resilient to a range of risks. And I believe risks posed by climate change are not sufficiently unique or material to merit special treatment relative to others[2]. Nevertheless, I think it's important to continue doing high-quality academic research regarding the role that climate plays in economic outcomes.

In what follows, I want to be careful not to conflate my views on climate change itself with my views on how we should deal with financial risks associated with climate change. I believe the scientific community has rigorously established that our climate is changing. But my role is not to be a climate policymaker.

Consistent with the Fed's mandates, I must focus on financial risks, and the questions I'm exploring are about whether the financial risks associated with climate change are different enough from other financial stability risks to merit special treatment. But before getting to those questions, I'd like to briefly explain how we think about financial stability at the Federal Reserve.

Financial stability is at the core of the Federal Reserve and our mission. The Federal Reserve was created in 1913, following the Banking Panic of 1907, with the goal of promoting financial stability and avoiding banking panics. Responsibilities have evolved over the years.

In the aftermath of the 2007-09 financial crisis, Congress assigned the Fed additional responsibilities related to promoting financial stability, and the Board of Governors significantly increased the resources dedicated to that purpose.

Events in recent years, including the pandemic, emerging geopolitical risks, and recent stress in the banking sector have only highlighted the important role central banks have in understanding and addressing financial stability risks.

The Federal Reserve's goal in financial stability is to help ensure that financial institutions and financial markets remain able to provide critical services to households and businesses so that they can continue to support a well-functioning economy through the business cycle.

I believe that placing an outsized focus on climate-related risks is not needed, and the Federal Reserve should focus on more near-term and material risks in keeping with our mandate

Much of how we think about and monitor financial stability at the Federal Reserve is informed by our understanding of how shocks can propagate across financial markets and affect the economy. Economists have studied the role of debt in the macroeconomy dating all the way back to Irving Fisher in the 1930s, and in the past 40 years it has been well established that financial disruptions can reduce the efficiency of credit allocation and have real effects on the broader economy[3].

When borrowers' financial conditions deteriorate, lenders tend to charge higher rates on loans. That, in turn, can lead to less overall lending and negatively affect the broader economy[4]. And in the wake of the 2007-09 financial crisis, we've learned more about the important roles credit growth and asset price growth play in 'boom-bust' cycles[5].

Fundamentally, financial stress emerges when someone is owed something and doesn't get paid back or becomes worried they won't be paid back. If I take out a loan from you and can't repay it, you take a loss. Similarly, if I take out a mortgage from a bank and I can't repay it, the bank could take a loss. And if the bank hasn't built sufficient ability to absorb those losses, it may not be able to pay its depositors back.

These dynamics can have knock-on effects on asset prices. For example, when people default on their home mortgage loans, banks foreclose and seek to sell the homes, often at steep discounts. Those foreclosure sales can have contagion effects on nearby house prices[6].

When a lot of households and businesses take such losses around the same time, it can have real effects on the economy as consumption and investment spending take a hit and overall trust in financial institutions wanes. The same process works when market participants fear they won't be paid back or be able to sell their assets. Those fears themselves can drive instability.

The implication is that risks to financial stability have a couple of features. First, the risks must have relatively near-term effects, such that the risk manifesting could result in outstanding contracts being breached. Second, the risks must be material enough to create losses large enough to affect the real economy.

These insights about vulnerabilities across the financial system inform how we think about monitoring financial stability at the Federal Reserve. We identify risks and prioritize resources around those that are most threatening to the US financial system. We distinguish between shocks, which are inherently difficult to predict, and vulnerabilities of the financial system, which can be monitored through the ebb and flow of the economic cycle.

If you think about it, there is a huge set of shocks that could hit at any given time. Some of those shocks do hit, but most do not. Our approach promotes general resiliency, recognizing that we can't predict, prioritize, and tailor specific policy around each and every shock that could occur[7].

Instead, we focus on monitoring broad groups of vulnerabilities, such as overvalued assets, liquidity risk in the financial system, and the amount of debt held by households and businesses, including banks. This approach implies that we are somewhat agnostic to the particular sources of shocks that may hit the economy at any point in time.

Risks are risks, and from a policymaking perspective, the source of a particular shock isn't as important as building a financial system that is resilient to the range of risks we face. For example, it is plausible that shocks could stem from things ranging from increasing dependence on computer systems and digital technologies to a shrinking labour force to geopolitical risk.

Our focus on fundamental vulnerabilities like asset overvaluation, excessive leverage, and liquidity risk in part reflects our humility about our ability to identify the probabilities of each and every potential shock to our system in real time.

Let me provide a tangible example from our capital stress test for the largest banks. We use that stress test to ensure banks have sufficient capital to withstand the types of severe credit-driven recessions we've experienced in the United States since World War II[8].

We use a design framework for the hypothetical scenarios that results in sharp declines in asset prices coupled with a steep rise in the unemployment rate, but we don't detail the specific shocks that cause the recession because it isn't necessary. What is important is that banks have enough capital to absorb losses associated with those highly adverse conditions.

And the losses implied by a scenario like that are huge: last year's scenario resulted in hypothetical losses of more than $600 billion for the largest banks. This resulted in a decline in their aggregate common equity capital ratio from 12.4 percent to 9.7 percent, which is still more than double the minimum requirement.

That brings us back to my original question: Are the financial risks stemming from climate change somehow different or more material such that we should give them special treatment? Or should our focus remain on monitoring and mitigating general financial system vulnerabilities, which can be affected by climate change over the long-term just like any number of other sources of risk? Before I answer, let me offer some definitions to make sure we're all talking about the same things.

Climate-related financial risks are generally separated into two groups: physical risks and transition risks. Physical risks include the potential higher frequency and severity of acute events, such as fires, heatwaves, and hurricanes, as well as slower moving events like rising sea levels.

Transition risks refer to those risks associated with an economy and society in transition to one that produces less greenhouse gases. These can owe to government policy changes, changes in consumer preferences, and technology transitions.

The question is not whether these risks could result in losses for individuals or companies. The question is whether these risks are unique enough to merit special treatment in our financial stability framework.

Let's start with physical risks. Unfortunately, like every year, it is possible we will experience forest fires, hurricanes, and other natural disasters in the coming months. These events, of course, are devastating to local communities. But they are not material enough to pose an outsized risk to the overall US economy.

Broadly speaking, physical risks could affect the financial system through two related channels. First, physical risks can have a direct impact on property values. Hurricanes, fires, and rising sea levels can all drive down the values of properties. That in turn could put stress on financial institutions that lend against those properties, which could lead them to curb their lending, and suppress economic growth.

The losses that individual property owners can realize might be devastating, but evidence I've seen so far suggests that these sorts of events don't have much of an effect on bank performance[9]. That may be in part attributable to banks and other investors effectively pricing physical risks from climate change into loan contracts.

For example, recently researchers have found that heat stress—a climate physical risk that is likely to affect the economy—has been priced into bond spreads and stock returns since around 2013[10]. In addition, while it is difficult to isolate the effects of weather events on the broader economy, there is evidence to suggest severe weather events like hurricanes do not likely have an outsized effect on growth rates in countries like the United States[11].

Over time, it is possible some of these physical risks could contribute to an exodus of people from certain cities or regions. For example, some worry that rising sea levels could significantly change coastal regions.

While the cause may be different, the experience of broad property value declines is not a new one. We have had entire American cities that have experienced significant declines in population and property values over time.

Take, for example, Detroit. In 1950, Detroit was the fifth largest city in the United States, but now it isn't even in the top 20, after losing two-thirds of its population. I'm thrilled to see that Detroit has made a comeback in recent years, but the relocation of the automobile industry took a serious toll on the city and its people.

Yet the decline in Detroit's population, and commensurate decline in property values, did not pose a financial stability risk to the United States. What makes the potential future risk of a population decline in coastal cities different?

Second, and a more compelling concern, is the notion that property value declines could occur more-or-less instantaneously and on a large scale when, say, property insurers leave a region en masse. That sort of rapid decline in property values, which serve as collateral on loans, could certainly result in losses for banks and other financial intermediaries.

But there is a growing body of literature that suggests economic agents are already adjusting behaviour to account for risks associated with climate change[12]. That should mitigate the risk of these potential 'Minsky moments'[13].

For the sake of argument though, suppose a great repricing does occur; would those losses be big enough to spill over into the broader financial system? Just as a point of comparison, let's turn back to the stress tests I mentioned earlier.

Each year the Federal Reserve stresses the largest banks against a hypothetical severe macroeconomic scenario. The stress tests don't cover all risks, of course, but that scenario typically assumes broad real estate price declines of more than 25 percent across the United States.

In last year's stress test, the largest banks were able to absorb nearly $100 billion in losses on loans collateralized by real estate, in addition to another half a trillion dollars of losses on other positions[14].

What about transition risks? Transition risks are generally neither near-term nor likely to be material given their slow-moving nature and the ability of economic agents to price transition costs into contracts. There seems to be a consensus that orderly transitions will not pose a risk to financial stability[15]. In that case, changes would be gradual and predictable.

Households and businesses are generally well prepared to adjust to slow-moving and predicable changes. As are banks. For example, if banks know that certain industries will gradually become less profitable or assets pledged as collateral will become stranded, they will account for that in their loan pricing, loan duration, and risk assessments.

And, because assets held by banks in the United States reprice in less than five years on average, there is ample time to adjust to all but the most abrupt of transitions[16].

But what if the transition is disorderly? One argument is that uncertainty associated with a disorderly transition will make it difficult for households and businesses to plan. It is certainly plausible that there could be swings in policy, and those swings could lead to changes in earnings expectations for companies, property values, and the value of commodities.

But policy development is often disorderly and subject to the uncertainty of changing economic realities. In the United States, we have a long history of sweeping policy changes ranging from revisions to the tax code to things like changes in healthcare coverage and environmental policies. While these policy changes can certainly affect the composition of industries, the connection to broader financial stability is far less clear.

And when policies are found to have large and damaging consequences, policymakers always have, and frequently make use of, the option to adjust course to limit those disruptions.

There are also concerns that technology development associated with climate change will be disorderly. Much technology development is disorderly. That is why innovators are often referred to as 'disruptors'.

So, what makes climate-related innovations more disruptive or less predictable than other innovations? Like the innovations of the automobile and the cell phone, I'd expect those stemming from the development of cleaner fuels and more efficient machines to be welfare-increasing on net.

So where does that leave us? I don't see a need for special treatment for climate-related risks in our financial stability monitoring and policies. As policymakers, we must balance the broad set of risks we face, and we have a responsibility to prioritize using evidence and analysis.

Based on what I've seen so far, I believe that placing an outsized focus on climate-related risks is not needed, and the Federal Reserve should focus on more near-term and material risks in keeping with our mandate. ■

Christopher J Waller is a member of the Board of Governors of the Federal Reserve System

Endnotes

1. The views expressed here are my own and are not necessarily those of my colleagues on the Federal Reserve Board.

2. While the actions the Federal Reserve has taken to date are mostly in an exploratory spirit, they could lead to the perception that we intend to give climate change special treatment in the future. For example, recent actions include the organization of a Supervision Climate Committee and a Financial Stability Climate Committee, the issuance of Principles for Climate-Related Financial Risk Management for Large Financial Institutions in December 2022, and the pilot Climate Scenario Analysis exercise initiated with the issuance of scenarios in January 2023.

3. For example, Bernanke (1983) showed how financial disruptions can reduce the availability of credit and reduce aggregate demand, and Diamond and Dybvig (1983) showed how bank runs can affect the real economy.

4. In their articulation of the financial accelerator, Bernanke, Gertler, and Gilchrist (1999) demonstrate concepts like this. Return to text

5. For example, see Schularick and Taylor (2012); Jorda, Schularick, and Taylor (2013); and Kiley (2021).

6. For example, Harding, Rosenblatt, and Yao (2009) identify a contagion discount on properties close to foreclosed properties.

7. There are also unanticipated risks, which makes it all the more important to be comprehensive and effective in mitigating known risks.

8. The conditions characterized by severe post-war recessions with steep rises in unemployment rates and declining asset prices tend to put significant stress on the balance sheets of the largest banks, making them well suited for a capital stress test.

9. Blickle, Hamerling, and Morgan (2021) study FEMA disasters and find that they have an insignificant or small effect on U.S. banks' performance.

10. See Acharya, Johnson, Sundaresan, and Tomunen (2022).

11. See Linder, Peach, and Stein (2013) for a study of the effect of Hurricane Sandy on the economy.

12. For example, in addition to the previously mentioned Acharya et al paper, in a recent paper Meisenzahl (2023) shows that banks have reduced lending in areas more affected by climate change.
13. Based on the work of economist Hyman Minsky, this is the sudden onset of a market crash when sentiment shifts following a period of rapid speculative growth.
14. Total losses were $612 billion, of which losses on first-lien mortgages, home equity, and commercial real estate loans were $98.8 billion. See https://www.federalreserve.gov/publications/files/2022-dfast-results-20220623.pdf
15. In their reports on climate-related risks to the financial system, both the Financial Stability Board (2020) and the Financial Stability Oversight Council (2021) indicate that risks to the financial system associated with an orderly transition are most likely contained.
16. Drechsler, Savov, and Schnabl (2021) estimated the average asset repricing maturity between 1997 and 2013 was 4.23 years

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Business aviation's path toward a net zero CO_2 future

Ed Bolen discusses business aviation's focus and resolve toward a net zero CO_2 future that was showcased at EBACE2023

Business aviation has fully embraced the need to become more sustainable and achieve net zero carbon emissions by 2050. Our industry's multifaceted approach to these goals was recently showcased throughout the 2023 European Business Aviation Convention & Exhibition (EBACE2023) that took place 23-25 May at Geneva's Palexpo convention centre and adjoining Geneva Airport (GVA).

Co-hosted by the European Business Aviation Association (EBAA) and the National Business Aviation Association (NBAA), EBACE highlighted the game-changing technologies, ground-breaking solutions for sustainable flight and exciting market opportunities propelling our industry forward.

The show also featured engaging speakers – including a candid and inspiring keynote discussion with Formula One powerhouse duo Toto and Susie Wolff – along with a bustling exhibit hall, a sold-out aircraft display and packed sessions on the show floor. This year's edition of EBACE also hosted the unveiling of Textron Aviation's new Cessna Citation Ascend, and the EBACE debut of Airbus Corporate Jets' ACJ TwoTwenty, Bombardier's Challenger 3500 and Gulfstream's G800 aircraft.

Perhaps most importantly in this global moment, however, EBACE2023 presented a powerful embodiment of business aviation's commitment to environmental stewardship and the use of sustainable aviation fuel, or SAF. Made from renewable feedstocks instead of petroleum, these drop-in fuels are driving business aviation's net zero goal; in its purest form, SAF can cut total lifecycle emissions by as much as 80%.

Through partnership with Jet Aviation, SAF was made available at GVA throughout EBACE2023, allowing operators to reduce CO_2 emissions when departing the show. Avfuel Corporation also added its supply of Neste MY Sustainable Aviation Fuel to airports for Geneva-bound flights from airports in Arkansas, Kansas and Florida.

Additionally, 'book-and-claim' credits were made available at New York's White Plains Airport (HPN) through a partnership between Avfuel and Atlantic Aviation. Book-and-claim allows operators to purchase SAF to be used to fuel jets elsewhere at airports where SAF is available, allowing operators to claim the environmental benefits from SAF without actually using it directly.

Tools like book-and-claim are vital to sustainability, as the production, distribution and availability of SAF continue to be an issue in the business aviation sector. This has prompted business aviation operators in Europe to call for regulations mandating a SAF book-and-claim system.

Despite fevered protests against our industry, and concerning movements across Europe to ban business aircraft and short-haul flights, our industry's focus on sustainability remains steadfast

The three-day EBACE Sustainability Summit also examined other important tools available now to business aviation operators. One session examined the use of carbon offset credits, which allow operators to write off their CO_2 emissions through funding specific, approved projects that remove CO_2 from the atmosphere.

In fact, CO_2 emissions from all attendee travel to and from the show, and from the 22 hotels and the shuttle buses used for EBACE, were offset by such carbon credits through a partnership with 4AIR.

While another important tool toward achieving net zero, however, *"carbon offsetting is not a passport for business as usual,"* noted Maureen Gautier, Manager for Sustainability and Future Workforce at EBAA. *"We really have to reduce first."*

Business aviation continues to innovate in this regard. We are leading the way in designing lighter and more efficient airframes, cleaner-burning engines and utilizing direct routing to reduce travel times and fuel burn.

"Technology leads to sustainability," said Michael Amalfitano, President and CEO of Embraer Executive Jets, in an EBACE newsmakers panel discussion featuring leaders of six leading business aircraft OEMs. *"As we continue to advance our products and our services to support those advancements, it's a really strong commitment by all the OEMs to continue to create a more efficient aircraft and a more efficient manufacturing operation."*

Advancing the future

EBACE also highlighted the technologies leading our industry beyond petroleum-based propulsion, with ongoing development of electric-powered advanced air mobility (AAM) aircraft tracking toward commercial introduction as soon as two years from now.

With leaders promising certification and the first commercial flights by 2024 – and several AAM aircraft displayed on the show floor – EBACE affirmed this new mode of air transport will soon become a reality. *"We are fully on track for a type certification before the end of 2025 in Europe,"* said Daniel Wiegand, Co-Founder and Chief Engineer for innovation and future programs at Lilium.

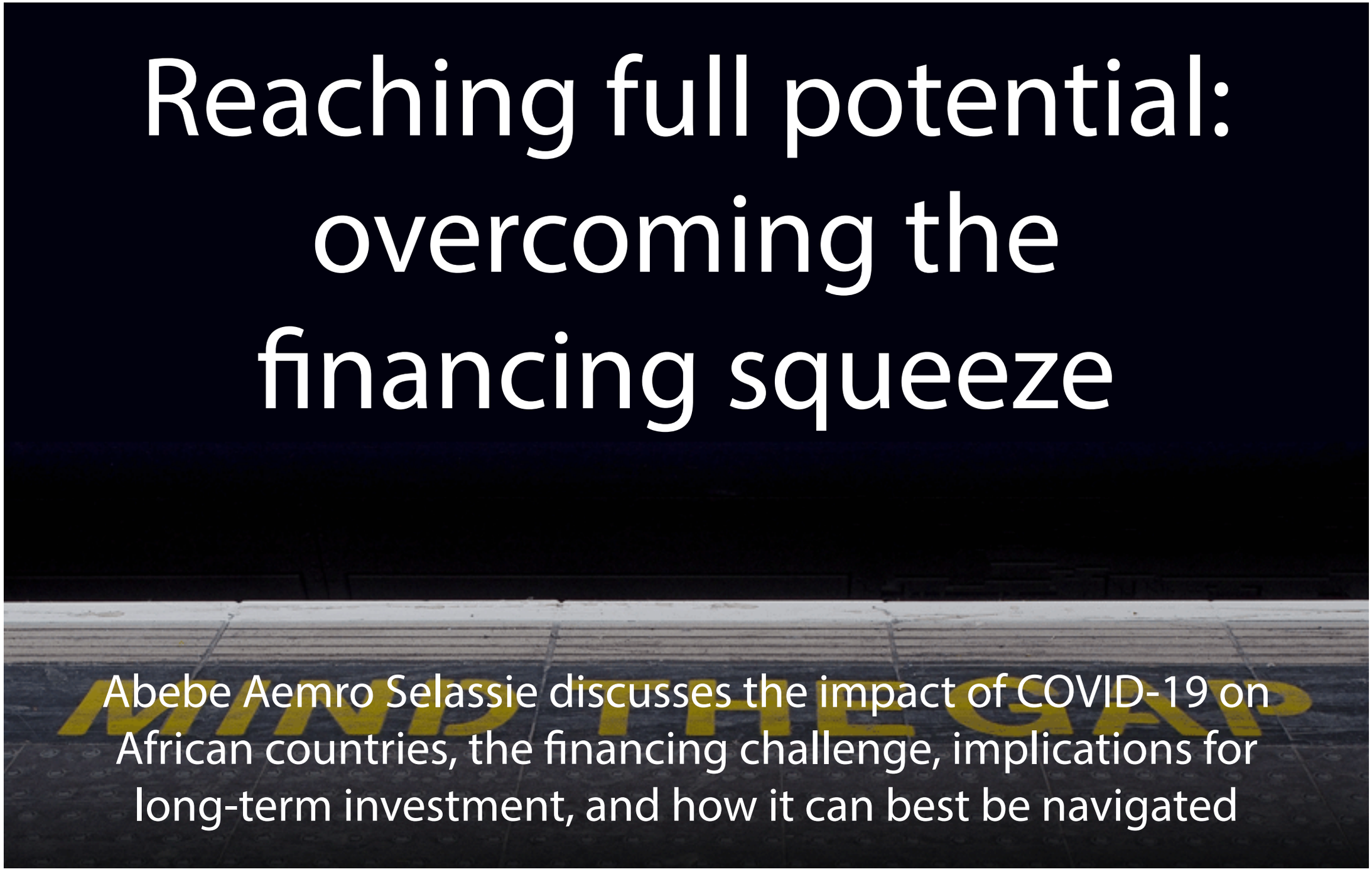
These certified AAM will be usable vehicles. Mark Henning, Managing Director for AutoFlight, noted the company recently set a world record flying its full-scale prototype a distance of 250 km (155 miles.) *"It was important to show to the world out there that eVTOL [electric vertical takeoff and landing] isn't science fiction anymore,"* he said.

In fact, commercial operations for battery-powered eVTOL are expected to begin next summer, with Germany's Volocopter offering commercial AAM passenger flights during the 2024 Paris Olympics. *"We want first of all to bring advanced air mobility and a sustainable network to everyone,"* said company CEO Dirk Hoke. *"And we will not do it only for the Olympics, we will be there then for the years to come in Paris."*

The message from EBACE2023 was clear: despite fevered protests against our industry, and concerning movements across Europe to ban business aircraft and short-haul flights, our industry's focus on sustainability remains steadfast. I invite readers of *World Commerce Review* to continue following these and other exciting developments guiding us toward business aviation's bright, innovative and sustainable future. ■

Ed Bolen is President and CEO of the National Business Aviation Association (NBAA)

Reaching full potential: overcoming the financing squeeze



Abebe Aemro Selassie discusses the impact of COVID-19 on African countries, the financing challenge, implications for long-term investment, and how it can best be navigated

The pandemic, for the most part, is behind us. To be clear though, the economic consequences of the pandemic continue to be felt acutely in most African countries. Unlike much of the rest of the world, these countries had limited ability to use fiscal and monetary policies to dampen its negative effects on their populations. And subsequent efforts to regain lost ground have been frustrated by the adverse external developments.

The region is facing a brutal financing squeeze. To be sure, this is not unique to African countries. But this region is the one that can least afford the implications of this squeeze, given Africa's much-higher level of poverty and remaining development gaps.

In fact, my worry is that the current financing challenge is one that looks set to endure. And unfortunately, beyond the odd nod of the head here and there, this is not something that is being acted upon with the seriousness and urgency that it needs—either by the international community or the region's policymakers.

Certainly, awareness is not in line with the profound implications for our futures. And I dare say that it is not garnering much attention by the academic community.

If I sound a bit melodramatic it is because an obsession of mine is the belief that, one way or another, this will be the African Century. Africa is where I think much of the incremental global demand for investment and consumption will happen in the coming years—if only because the region is where all incremental global population growth is set to happen. A process well in-train.

In the rest of my remarks, I intend to expand on the financing challenge as I see it, and how best it can be navigated.

I. How did we get here

I'd like to start with a story. And like most great stories, this one has a classic arc that can be organized into three acts.

Act 1: a newish beginning—in rough terms, 1990 to 2006 was a period of much market-friendly reforms, high volumes of aid flows, and an opening of political space. This engendered a marked pick-up in economic growth and significant improvements in development indicators.

Much additional revenue mobilization in the near-term is likely to be devoted to reducing fiscal deficits rather than making space for incremental spending

Act 2: the price of success. I think it was Arvind Subramanian who once noted: growth begets more growth. And so it was that, as economic growth accelerated, confidence and investment opportunities increased. Debt relief from official and multilateral creditors under the Heavily Indebted and Poor Countries (HIPC) and Multilateral Debt Relief (MDRI) schemes made significant contributions.

From the mid-2000s onwards, this was followed by quite a lot of financing flows to the region—from both official and private sources. And from the side of country authorities, the availability of increased financing made it possible to start addressing long-standing development needs. The consequence was a marked increase in the level of public debt in most countries in the region.

Act 3: the tide goes out. Thus, it was that, by 2015-16, many countries were already close to the edge. And few could have anticipated the scale of the shocks that were to follow. starting with the COVID-19 pandemic.

The impact on the region's funding outlook was immediate and devastating. Spreads widened sharply—more than twice the increase associated with the global financial crisis on 2008-09. Private portfolio inflows were quickly replaced by outflows, and in the face of urgent pandemic-related needs, many authorities found themselves without the finance to mount an adequate response.

Indeed, in contrast to the extraordinary fiscal support seen across most advanced-market economies, Africa's reaction to the crisis was much more constrained.

To be sure, some debt service payments to G20 bilateral official creditors were temporarily postponed under the Debt Service Suspension Initiative (DSSI). And both the World Bank and the IMF rapidly ramped up their concessional lending.

Following the onset of the crisis, for example, the amount of finance provided to Africa by the IMF during 2020-21 amounted to over $70 billion, several multiples of the financing provided over the preceding 10 years. And these resources served as an important safety net for the region.

Coupled with the agile and bold measures undertaken by the region's leaders to contain the pandemic, these funds helped contain the greater damage that the pandemic would have otherwise wrought. But we are now at the point where this surge in support has dried up.

I have painted a rather linear picture of the complex and varied developments and processes that have got us here, with a lot of generalization. It is so that I can get to the conjuncture quickly.

II. What exactly is the problem?

Put simply, the region's most pressing economic problem right now is the funding squeeze. This reflects several factors: loss of external market access after a brief post-pandemic respite and, indeed, capital flight from some countries; adverse effects of Russia's invasion of Ukraine (particularly on food prices and fuel-importing countries); continued declines in official development assistance; and much lower flows from China and other new sources of financing. The domestic cost of funding has also gone up, limiting recourse to that alternative.

This is not just an immediate concern but can have lasting effects with implications for longer-term development. During the recent crisis—unlike major advanced economies—Africa had limited fiscal space, hampering policy makers' ability to mount an effective response.

With insufficient funding, authorities were less able to protect their most vulnerable, and were also forced to divert resources from critical development sectors such as health, education, and infrastructure, curtailing the region's growth prospects. The crisis has never really passed, and the funding constraint persists.

We of course don't know how the current squeeze will evolve. It could yet be the case that borrowing costs will attenuate and capital markets will once again become more benign, allowing countries, at a minimum, to rollover maturities falling due in coming years.

But my sense is that the current difficult environment is likely to persist. Firstly, the global fight against inflation has been much more complicated than we had hoped, and tighter financial conditions will likely be with us for some time to come.

Second, we are moving into a more volatile world—in which larger and larger shocks seem to be arriving more and more frequently. This has clear implications for risk premia and borrowing costs. But it also means that future flows, such as official assistance, may be somewhat less reliable.

The funding squeeze is all the more problematic because countries have emerged from the pandemic with elevated levels of fiscal deficits and public debt. Even if a country were to engineer a smooth return to a more normal fiscal position, the higher level of debt and higher borrowing costs (spreads over US treasuries) are more than double their pre-pandemic level—meaning that there are less resources for primary (non-interest) spending outlays.

What I am trying to get at here is the difficulty that countries are facing in sustaining current levels of per-capita spending on health, education, infrastructure, much less increasing the spending required to meet the SDGs!

Our Managing Director, Kristalina Georgieva, always encourages us to hope for the best, but plan for the worst. In this vein, it is going to be very important for countries to carefully consider their funding mix. In a world where finance is cheap and easily replaced, the consequences of a particular decision can be contained.

But we no longer live in that world. Resources have become scarce and more expensive. In this world, countries have to be more cautious about the type and composition of their financing, and they should be much more deliberate in mobilizing new resources.

III. Three choices

To state the somewhat obvious, and simplifying things, a government's ability to address development spending needs is bounded by the amount of revenues that it raises, its ability to supplement this by borrowing from either domestic or external markets, and any aid resources (grants and concessional borrowing) it has access to.

Against this backdrop, and in the broadest of terms, there are three broad choices that governments face, and I will try and lay out the trade-offs next.

Choice 1. Public vs private

Perhaps the most important choice in financing development is whether spending should be undertaken by the public or the private sector. In practice though, most African countries (and indeed elsewhere) tend to fund development largely through public finance.

On average, some 79 percent of total government spending in sub-Saharan Africa is covered by revenues, a further 19 percent by borrowing, and 2 percent through grants and/or other concessional budget support. Needless to say, averages mask great heterogeneity across countries.

To be clear, the size of government is a deeply political and very country-specific issue. And given the important externalities involved in public spending in health, education, and much large-scale infrastructure—coupled with limited private sector capacity-government provision of such services is very appropriate.

The challenge for governments is that with borrowing space limited (see below) and aid flows highly circumscribed, the only way to make more room is through domestic revenue mobilization.

There are though many challenges on this front. Take developments over the last 10 or so years. African countries have done much to invest in human capital and improve public infrastructure. But for political and technical reasons, they have found it very difficult to capture the returns on this investment through their tax systems.

Hence, the ratio of interest payments on debt to revenues has continued to drift upwards in country after country—with the median doubling to 10 percent in just a decade—leading to the debt difficulties that we are now seeing in some countries in the region.

In general, cross-country experience shows that countries can at most generate between ½ and 1 percent of GDP in additional revenues per year. Given the need to reduce still-elevated fiscal deficits to more sustainable levels in the next few years, much additional revenue mobilization in the near-term is, I fear, likely to be devoted to reducing fiscal deficits rather than making space for incremental spending.

This makes it important to consider what role private finance could play in supporting development in the region—much as has been the case in Asia.

At the moment, the private sector plays a somewhat limited development role—public entities carry out 95 percent of infrastructure projects in the region, and despite the continent's clear potential, Africa attracts only 2 percent of global foreign direct investment.

Further, when investment does go to Africa, it is predominantly in natural resources and extractive industries, much less so, health, roads, or water. To attract private investors and transform the way Africa finances its development, an improved business environment is critical.

But that is not enough. Even in the most favourable environments, development sectors are special in a way that often complicates private sector participation.

For instance, infrastructure projects often have large upfront costs, but returns accrue only over long periods of time, which can be difficult for private investors to assess. Private sector growth also thrives on networks and value chains, which may not yet exist in new markets.

When these problems are acute, governments may need to provide extra incentives. And these can sometimes be costly. But the truth is, many projects in development sectors simply won't happen without them. In East Asia, 90 percent of infrastructure projects with private participation receive some government support.

Now, there are ways in which governments can maximize impact while minimizing risks and costs. For example, support should be targeted, temporary, and granted on the basis of clear market failures. It should also be transparent, leave private parties with sufficient skin in the game, and should focus tightly on worthy projects that would not happen otherwise.

With this in mind, African countries and their development partners might consider reallocating some resources towards public incentives for private projects. Underpinned by sound governance and transparency, a more innovative private-sector approach may significantly increase the amount, range, and quality of services for people in Africa.

Choice 2. Domestic vs external

Another important choice is whether development spending should be financed with domestic or foreign funds. As just noted, for the most part, countries finance themselves from domestic resources. But at the margin, foreign flows, particularly borrowed resources, contribute meaningfully to government finances.

And beyond just bridging the fiscal funding gap, external borrowing helps reduce the large current account deficits that are typical during the early stages of development. To put it another way, external flows punch well above their weight.

In recent years, recourse to external borrowing in sub-Saharan Africa has been significant. For one, the global economic and financial environment was conducive—and following the large debt relief of the HIPC/MDRI it was believed that market borrowing would help instil discipline. And with low domestic savings and limited financial markets, for many countries in the region it was the only meaningful way to raise the resources needed to increase development spending.

But with funding costs having increased markedly for all countries, and set to remain that way, this source of funding is going to be a less and less likely option. For example, since Russia's invasion of Ukraine and the upheaval in capital markets it unleashed, no sub-Saharan country has been able to issue a Eurobond.

This leaves domestic savings. Of course, the need to foster more domestic savings has long been understood as the kernel of economic development. Some 70 years ago, Arthur Lewis noted:

> *"The central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 4 or 5 per cent of its national income, converts itself into an economy where voluntary saving is running at about 12 to 15 per cent of national income…We cannot explain any 'industrial' revolution until we can explain why saving increased relatively to national income."*

There is a large and still unresolved literature that seeks to explain why some countries save more than others. Demographics seem to play a role. But also, many other factors.

At the IMF—with an eye on generating practical policy options—we have been paying close attention to the role of domestic financial systems. A poorly developed system, with low inclusion, ineffective regulation or supervision, few options, limited competition, and constrained deposit rates will generally do poorly in mobilizing domestic savings and channelling those savings to people who can use them most productively.

Moreover, the challenge in Africa is particularly complicated by the fact that a large portion of economic activity is in the informal sector, where much of the population remains unbanked and where savings are kept as non-financial assets such as livestock, goods, grain, or other materials. These resources are not deposited in savings accounts or other formal financial channels and so are unavailable for investment.

This is why at the Fund we have made a growing focus on financial inclusion. Not only does inclusion provide greater opportunities to some of the region's most vulnerable, but it can also help our countries tap into an

underused pool of savings, placing them in a better position to meet more of their own development needs locally. But like revenue mobilization this too of course is a gradual process.

Choice 3. Concessional vs non-concessional borrowing

Within the envelope of external financing, a further important option for financing development concerns the mix between concessional and non-concessional funding.

Concessional resources are a sizeable component of external flows—representing around a quarter to a third of external flows for the region as a whole. And with few countries able to take on significantly more debt at market rates, going forward the need for concessional financing is more critical than ever.

To my mind, Africa's progress over the past couple of decades—across all development metrics—has been nothing short of remarkable. Improvements in life expectancy, literacy, health outcomes, access to education, etc have all profoundly reshaped the continent. This was made possible by three important factors:

- Far-reaching reforms by countries to considerably improve public finances, the quality of institutions, and the business environment;

- A highly supportive global environment, with countries benefitting from strong growth in trading partners, favourable global financial conditions, and growing exposure to a surging Chinese economy; and

- Much support from the international community, starting with debt relief initially and followed by significant concessional budget support, particularly up to around 2009-10.

Of course, aid flows have over the years been declining[1]. But because this could be offset by non-concessional financing in many countries, its adverse effects have been limited. However, the lower level of concessional financing is now going to be felt more as alternative sources of financing have dried up.

But to note: lower aid/concessional financing flows have still had considerable adverse effects. Almost always, lower aid flows mean lower fiscal space. As aid flows have declined over the years and been replaced by more expensive financing, the effect has been to increase countries weighted average cost of financing, while also making them more exposed to shifting market sentiment.

IV. Debt restructuring

You must be wondering why I am leaving out another important avenue to create fiscal space in countries—debt restructuring. I wanted to get to this last as a bit of an antidote to the rather pervasive narrative out there that the region's main challenge is too much debt, particularly to China.

Yes, high indebtedness is a major problem in some countries and debt vulnerabilities have generally increased. But in most other cases public debt is elevated but still manageable. And, yes, while China is an important creditor to some countries, in most cases debt to China is modest. Note public debt to China accounts for around 8 percent of total sub-Saharan Africa public debt.

Hence the problem is much broader. From a region-wide perspective, it is the funding squeeze that matters most—it threatens to push even those countries with manageable debt positions into insolvency.

For cases where debt is unsustainable, it goes without saying that it needs to be restructured. In such cases, the burden of making repayments should not fall unduly on debtor countries. But this is easier said than done.

Debt restructurings have always been difficult, and even more so now in the context of a more diversified creditor base and more complex structure of public debt. Take domestic debt, which now accounts for about half of all public debt in sub-Saharan Africa.

In cases where public debt is unsustainable and this exposure needs to be included in the restructuring perimeter, careful consideration needs to be given to the effects on the domestic banking sector, how quickly market access can be regained etc.

And with respect to external creditors, countries of course have even less sway over the pace at which restructuring can happen, as clearly shown by the ongoing challenges with the Common Framework. This is even more frustrating in unsustainable cases where the official creditors' inability to agree on a needed debt treatment prevents the IMF from providing timely support to countries during periods of acute distress.

V. Some takeaways

Forgive me if I have been a bit too glum. My optimism about the region's prospects remains undiminished. As difficult as conditions are at the moment, I strongly believe that the vast majority of countries have reached a threshold where even in the face of the many challenges they face, they will get by; indeed, go on to prosper.

Rather, what is frustrating is that with a modicum of increased support, the region could be helped to reach its full potential sooner and the global economy could be much better for it.

While countries have a clear role to play, what is required of the international community going forward are the following:

- Much higher volumes of countercyclical flows, particularly from International Financial Institutions (IFIs), to neutralize the highly procyclical nature of private capital flows. At the Fund, for example, right now our ability to sustain our recent high levels of support is increasingly being constrained by the limited availability of concessional resources. A challenge that we are working very hard to address via pledges from our wealthier members.

- A more agile and effective sovereign debt resolution framework. The G20's Common Framework is an important innovation, and we would be in a much worse place without it. At the same time, it has not been able to provide the required financing assurances and debt relief in a timely manner.

  This needs to change, and quickly. Again, as an institution, we are working relentlessly to improve this process and, with the World Bank and the G20, launched a new Global Sovereign Debt Roundtable in February to bring together key stakeholders involved in sovereign debt restructuring to address the current shortcomings in debt restructurings.

- Finally, more support from advanced countries is needed. As one British mandarin once put it to me, the 'authorizing environment' for this is not exactly favourable. Indeed, we are seeing significant cuts in such flows, and a significant share of what is not being cut is instead being directed elsewhere.

  Two quick points on this. First, as the preceding discussion has, I hope, convinced you, this cut in aid, particularly its diversion away from budgets, is having the very significant effect of proportionally reducing development spending. Second, if it is perhaps too much to ask for higher aid, then one change that could at least be made is to ensure that there is much more progressivity in aid flows to the poorest and more fragile countries.

Again, absent making sure that we devote the resources needed now to build human capital and help integrate Africa into the global economy, it is not just slower growth and development progress in the region that is in store, but also a much weaker and less resilient global economy. ■

Abebe Aemro Selassie is the Director, African Department of the IMF

Endnote

1. From a peak of around 6 percent of recipient country GDP in the 1990s, aid flows so sub-Saharan Africa now average only 2½ percent. Moreover, increasingly, such aid flows are no longer in the form of budget support.

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Are cryptoassets a threat to financial stability?

Cryptoassets and markets are a relatively recent innovation in finance. Claudia Buch says there is a need to monitor and take preventive action against risks in these markets

Spring has come and gone, but whether the cryptoasset winter is over remains to be seen. Those who see cryptoassets mainly as a conduit for illegal and gambling activities would certainly hope that turbulent spells in markets for cryptoassets have provided a salutary lesson. Those who see productive potential in these new technologies would hope that these episodes help separate the wheat from the chaff.

Which of those views prevails is an open issue. Whether cryptoassets that promise to improve the provision of financial services ultimately deliver on those promises crucially depends on the regulatory response. Which services are useful, how market structures evolve, whether new entrants are able to challenge the incumbents, what risks are associated with this – all this is shaped by regulations that apply to crypto markets[1].

I would like to focus on the financial stability implications of cryptoassets. So far, the crypto market has been small. Market capitalisation of cryptoassets stands around 0.2% of global financial assets[2].

However, if there is one thing we've learnt from the past, it is that even seemingly small pockets of distress can breed financial crises. Cryptoassets promise innovative ways of providing financial services, just as the securitisation of financial assets did in the 1990s.

Securitisation was an innovation considered to improve the allocation of risks in the financial system. It, too, started small in the 1980s, only to grow to an annual issuance volume of approximately half of outstanding mortgage and consumer loans in 2007[3].

Similarly, the US mortgage market was considered to be of relatively minor importance – only to send shockwaves through the global financial system in 2007-08[4].

Hence, assessing risks to financial stability early on is important. In a nutshell, financial stability is about ensuring that the financial system provides its services to the real economy – even in times of stress and structural change[5].

Currently, the cryptoasset world is not very connected to the traditional financial system or to the real economy[6]. This may be good news. Failures and stress in these markets may not put financial stability at risk. But it could

Cryptoassets promise more innovative ways of providing financial services than the traditional financial system, but they also entail risks that are strikingly similar: high market concentration, complexity, common exposures, and high operational risk

also mean precisely the opposite: perhaps there is not much real value-added in cryptoassets and the underlying technologies while, at the same time, high leverage in largely unregulated markets could lead to instability in the core financial system?

Before answering these questions and addressing the need for regulatory action, let me start by giving an overview of how we assess financial stability. In the second part, I will apply these concepts to the cryptoasset market. This comparison will show that:

- First, risks inherent in cryptoasset markets require preventive regulation.
- Preventive regulation requires, second, monitoring risks in cryptoasset markets early on, and
- third, international initiatives to address risks and improve monitoring, but relevant gaps remain, in particular to prevent crossborder regulatory arbitrage[7].

What matters for financial stability?

Defining what is 'systemic' is not easy from a conceptual point of view, and recent stress in the financial system shows that the market environment matters. Different indicators are thus used to capture the degree of systemic importance of financial institutions.

Banks are classified as either significant or less significant institutions, with implications for regulation and supervision. The classification of banks uses a number of indicators: size, interconnectedness and common exposures, complexity, and substitutability.

Before comparing the core financial system to the cryptoasset system based on these indicators, let me stress that the quality of information is radically different.

For the core financial system, in particular for banks, we have fairly good information. Banks are tightly regulated, and regulation requires reporting. These reporting systems have been significantly upgraded following the global financial crisis, which involved costs for both banks and public authorities[8].

These investments are paying off: we now know much more about linkages in the financial system, and about exposures and risk concentrations. This information is not perfect, but gaps that were identified during the global financial crisis have been closed fairly well – and work continues.

In the cryptoasset world, the situation is drastically different: cryptoasset markets are not (yet) regulated comprehensively, which means there are hardly any reliable reporting systems. One might think that this would not be necessary.

After all, one of the promises of cryptoassets is transparency: all information should be publicly available and traceable for everyone. But publicly available transaction data is hardly sufficient to monitor and assess risks in cryptoasset markets. For example, transactions cannot be linked to specific individuals, and much trading of cryptoassets takes place 'off-chain'[9].

Unless proper reporting standards are applied, we have to rely on information provided voluntarily. Such information can hardly be checked for validity, and it is potentially subject to manipulation. This risk is particularly high for self-reported trading volumes on unregulated exchanges. There is indeed increasing evidence of price manipulation, in particular in illiquid markets[10].

Most of the data on cryptassets that I use in the following is taken from publicly available sources. It has been subjected to some plausibility checks, such as comparisons with other sources, but should still be treated with caution.

But let's begin by looking at indicators of systemic risk in the banking system.

Size

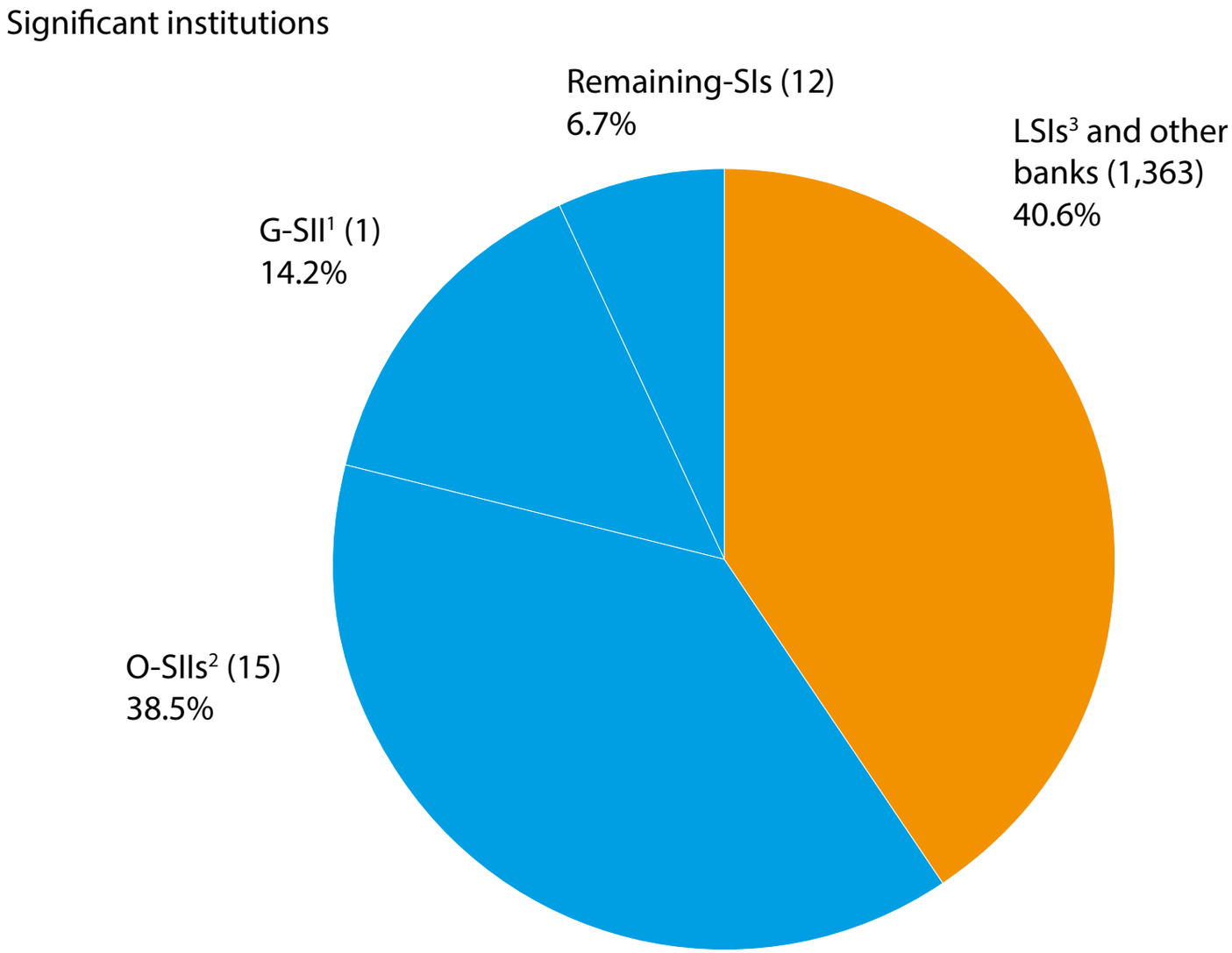
The bigger banks are, the larger is their systemic footprint. Generally, banking systems are dominated by very few, very large players. Idiosyncratic shocks that affect these institutions can thus have implications for the entire financial system[11].

The German banking sector is no exception: the top 1% of banks account for 51% of market share in terms of total assets. The large number of smaller banks – more than 1,300 savings banks or cooperatives – have an aggregate market share of 41% (Chart 1). This chart shows the market share in terms of total assets of German banks (€9.4 trillion in Q4 2022) grouped by their level of systemic importance. The figures in brackets refer to the number of banks in each group.

For the purpose of this illustration, global systemically important institutions are not included in the set of other systemically important institutions, which, including the G-SII, would contain 16 banks. In the same way, the G-SII and O-SIIs are not included in the subset of the remaining significant institutions (SIs) in this illustration. Less significant institutions (LSIs) and other banks constitute the rest of the banking system.

The systemic footprint of large banks cannot be observed directly. However, statistical indicators can be used to assess this impact indirectly. One relevant question is, for example, how a potential shortfall in capital for a

Chart 1. A few large banks dominate the German banking sector.



Sources: Financial Reporting (FINREP) and balance sheet statistics (BISTA). 1 Global systemically important institution. 2 Other systemically important institutions. 3 Less significant institutions.
Deutsche Bundesbank.

stressed large bank is correlated with a shortfall in capital for the entire financial system. This is what the CoVaR methodology measures (Chart 2)[12].

Calculating this measure for the German financial system recently shows a decline in the level of systemic risk. Yet, the current levels still exceed those before the global financial crisis.

In the aftermath of the 2007-08 financial crisis, the G20 launched financial sector reforms to reduce the 'too big to fail' problem: banks which become so large that their disorderly failure would cause significant disruption to the wider financial system and economic activity.

Systemically important banks are often rescued – or 'bailed-out' – by the government in the event of distress. They benefit from an implicit guarantee, which becomes explicit in times of crisis. This changes incentives: if risks are ultimately borne by the taxpayer, funding costs may not fully reflect risks, thus incentivising excessive risk-taking, balance sheet growth, and management compensation.

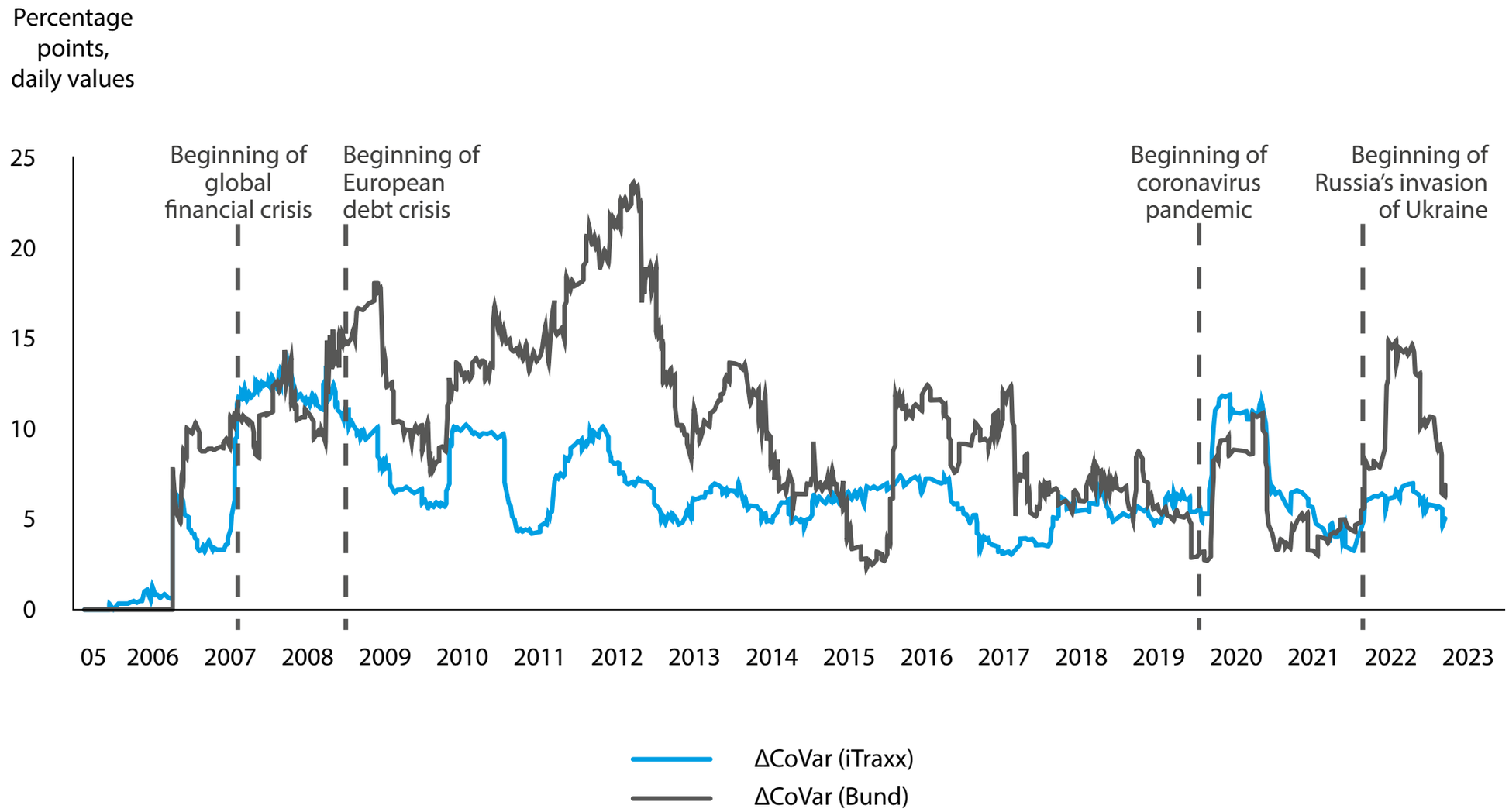
In order to mitigate these risks, tighter capital requirements and supervision are imposed on systemically important banks, and the effects of these reforms have been evaluated by the Financial Stability Board, which is an international entity to monitor the global financial system[13].

Interconnectedness and common exposures

Size alone is certainly not a sufficient metric to assess systemic importance. Smaller banks can be systemically important if the system is highly interconnected and if banks are exposed to the same type of risk – such as interest rate risk.

Chart 2. The systemic footprint of banks in Germany has trended downwards but remains above levels observed before the global financial crisis.

Development of ΔCoVar over time*



*Source: HIS Markit and Bundesbank calculations. * This figure shows the development of two market-based indicators following the ΔCoVar methodology. ΔCoVar (iTraxx) measures contagion effects from an individual systemically important institution to the private sector (proxied by the CDS index iTraxx EUR, which includes 125 large European companies). The indicator measures the difference (ie. the increase) in the value at risk (VaR) of the private sector in the median state and the VaR in the event of a systemically important institution experiencing distress. ΔCoVar (Bund) measures contagion effects from an individual O-SII to the public sector (represented by the CDS on German sovereign bonds. Deutsche Bundesbank.*

One channel for interconnectedness is the interbank market. During the global financial crisis, liquidity provision through the interbank market suddenly dried up. Banks cut credit lines to each other as uncertainty about counterparty credit risk increased.

Hence, between 2008 and 2022, the share of interbank assets and liabilities in terms of total loans of German banks fell from 19% to 8%. Liquidity provision through central banks increased[14]. More recently, the volume in the German interbank market has increased, but it remains far below the values observed prior to 2008 (Chart 3).

While the interbank market is a channel for direct contagion in the financial system, common exposures to the same shock can lead to indirect contagion effects. This risk is particularly acute at the current juncture.

Higher interest rates and higher risk to the growth outlook expose vulnerabilities in the financial system that have built up over time. Maturity transformation exposes banks to interest rate risk. Adverse shocks to the real economy can increase credit risk for many banks quite broadly.

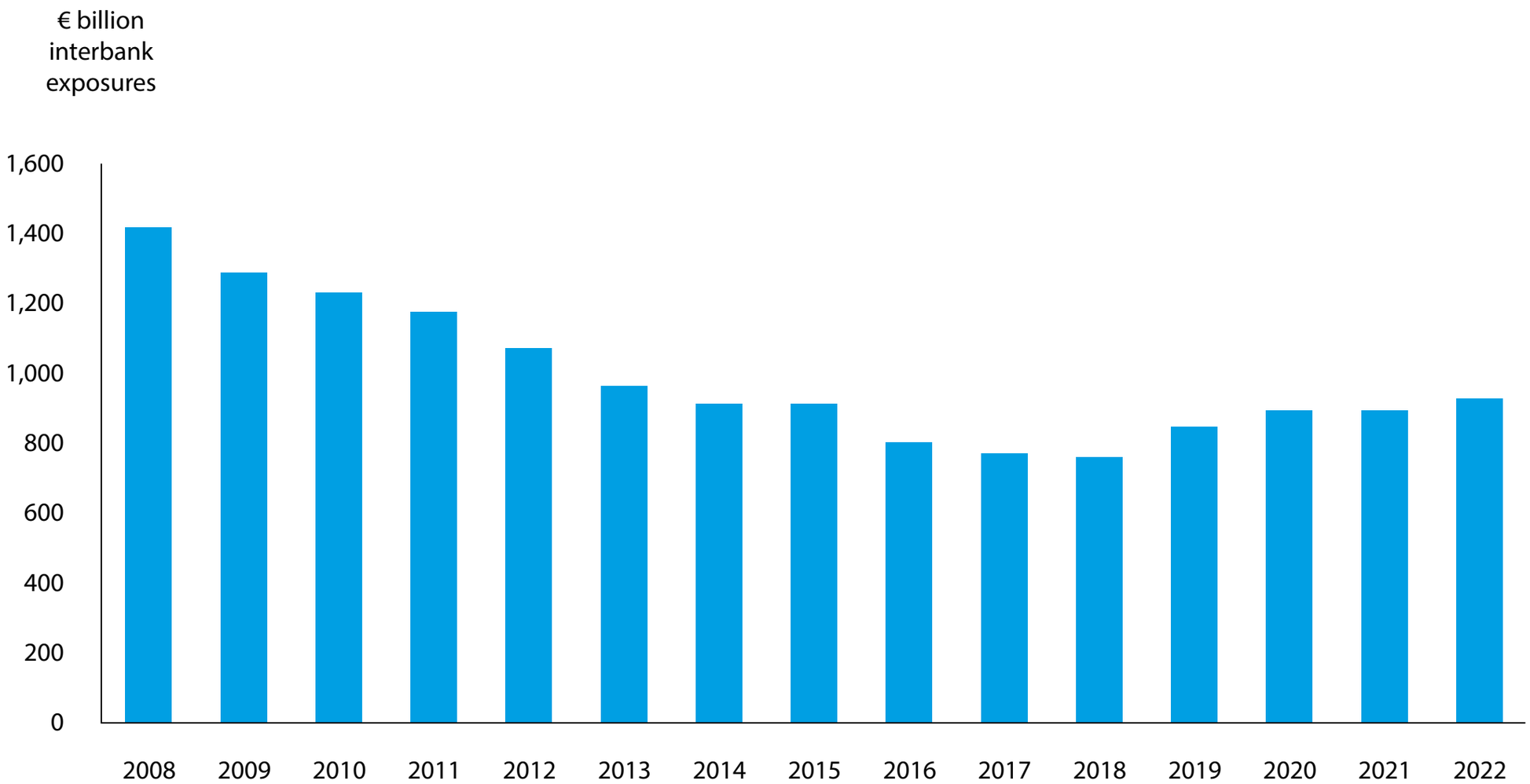
Complexity

A highly complex entity can be systemically important. Complexity can have different dimensions, such as the volume of derivatives business, a large number of (international) affiliates, or operational complexity. The more complex a bank is, the greater the costs and time needed to resolve it[15].

A crossborder resolution of such an entity requires coordination among authorities in multiple jurisdictions[16]. A vivid example of the resolution of a complex entity is the Lehman Brothers insolvency: it took 14 years after the bank's failure to resolve it[17].

Chart 3. Interbank exposures have declined following the global financial crisis.

Development of interbank exposure in Germany since the gobal financial crisis*



*Source: Credit register of loans of €1.5 million or more. * This chart shows the year-end figures of interbank credit-related on-balance-sheet and off-balance-sheet exposures (such as loans and loan commitments) in the German banking system from 2008 to 2022.*
Deutsch Bundesbank.

Substitutability

Very specialised providers of financial services can be systemically important, even if they are small or not highly complex. Providers of infrastructure such as the payment systems services are one example. If such an institution experiences distress or even fails, other services can be disrupted as well and liquidity may dry up. The more specialised the institution, the more costly it is to replace its services[18].

Leverage

Time and again, leverage in the financial system has been a trigger of financial crises. High leverage makes borrowers vulnerable to adverse shocks such as a rise in interest rates or losses in income. This increases credit risk and leads to losses for financial institutions. Poorly capitalised – highly 'leveraged' – financial institutions respond by cutting the provision of financial services and credit, which has negative repercussions for the real economy.

Therefore, the reform agenda of the past decade has focused on reducing leverage in the financial system. Banks are indeed better capitalised than they used to be – while leverage in the private and public sector has continued to increase.

Are cryptoassets relevant for financial stability?

There is no simple metric that measures 'financial stability'. Rather, financial stability is shaped by the complex interaction between the financial products that are offered, market structure, leverage and governance of financial institutions, regulation and, not least, the incentives and objectives of the people who are providing these financial services.

The one important distinction between providers of traditional financial services, such as banks, and cryptoasset providers is technology. Apart from that, many features are similar – including potential risks to financial stability.

So let's discuss these features in turn, beginning with what cryptoassets actually are.

What are cryptoassets?

Currently, there is no internationally agreed definition of cryptoassets. According to the Financial Stability Board (FSB), a cryptoasset is a *"(…) digital asset (issued by the private sector) that depends primarily on cryptography and distributed ledger or similar technology."*

The traditional financial system uses conventional IT infrastructure. Securities transactions and holdings are recorded by a central securities depository in a centralised database – a 'ledger'[19].

In contrast, cryptoassets are issued and recorded on a shared and distributed digital ledger – a 'blockchain'. The most popular blockchains for cryptoassets are public and permissionless.

'Public' means that all transactions are visible to all, but in a pseudonymous way: participants within the network interact via identification code, but the actual identity of the participant is usually unknown. 'Permissionless' means that new information can be added by anyone ('miners' or 'validators') fulfilling the technical requirements using a computerised process that validates transactions ('consensus mechanism').

Depending on the underlying consensus mechanism, mining and validation of some cryptoassets requires a lot of computing power, which makes the process very energy-intensive. For example, cryptoassets like Bitcoin have an energy consumption comparable to that of a medium-sized country like Spain[20].

Despite these technological differences, cryptoassets have features in common with the traditional financial system: trading on marketplaces and exchanges, provision of payments services, lending, or use of collateral in financial transactions.

Two types of cryptoassets are relevant:

- The first are 'native' tokens. These are not backed by any real or financial assets and are hence labelled 'unbacked' cryptoassets. This distinguishes them from traditional financial instruments or currencies. Unbacked cryptoassets have no fundamental value and are not backed by any cash flows, and their price is driven entirely by sentiment[21].

  The two best-known native tokens are Bitcoin and Ether, the native token of the Ethereum blockchain. Native tokens are integral to permissionless blockchains as they reward miners or validators for settling transactions by adding new blocks to the chain.

- The second type of cryptoassets are stablecoins. These are mostly pegged to central bank currencies such as the US dollar. Stablecoins have been primarily developed to overcome inefficiencies and reduce costs in the traditional payments system[22].

Although coined as being 'stable', the market valuations of stablecoins in fact fluctuate quite significantly. Also some stablecoins are not fully audited, and they disclose their reserves on a voluntary basis only. Hence, the existence and composition of reserves cannot always be verified.

Size and market structure

The total market capitalisation of all cryptoassets traded on exchanges reached an all-time high of roughly US$3 trillion in 2021 (Chart 4). In the first half of 2022, prices for cryptoassets collapsed. Besides changes in the macroeconomic environment, this price decline reflected the widespread use of leverage. Many cryptoasset

intermediaries became insolvent, and market capitalisation dropped to US$1 trillion in early 2023, or 0.2% of global financial assets.

The market is highly concentrated. The top six tokens accounted for more than 70% of market capitalisation[23]. As regards issuers of stablecoins, 90% of market capitalisation is concentrated within the three largest entities (Chart 5).

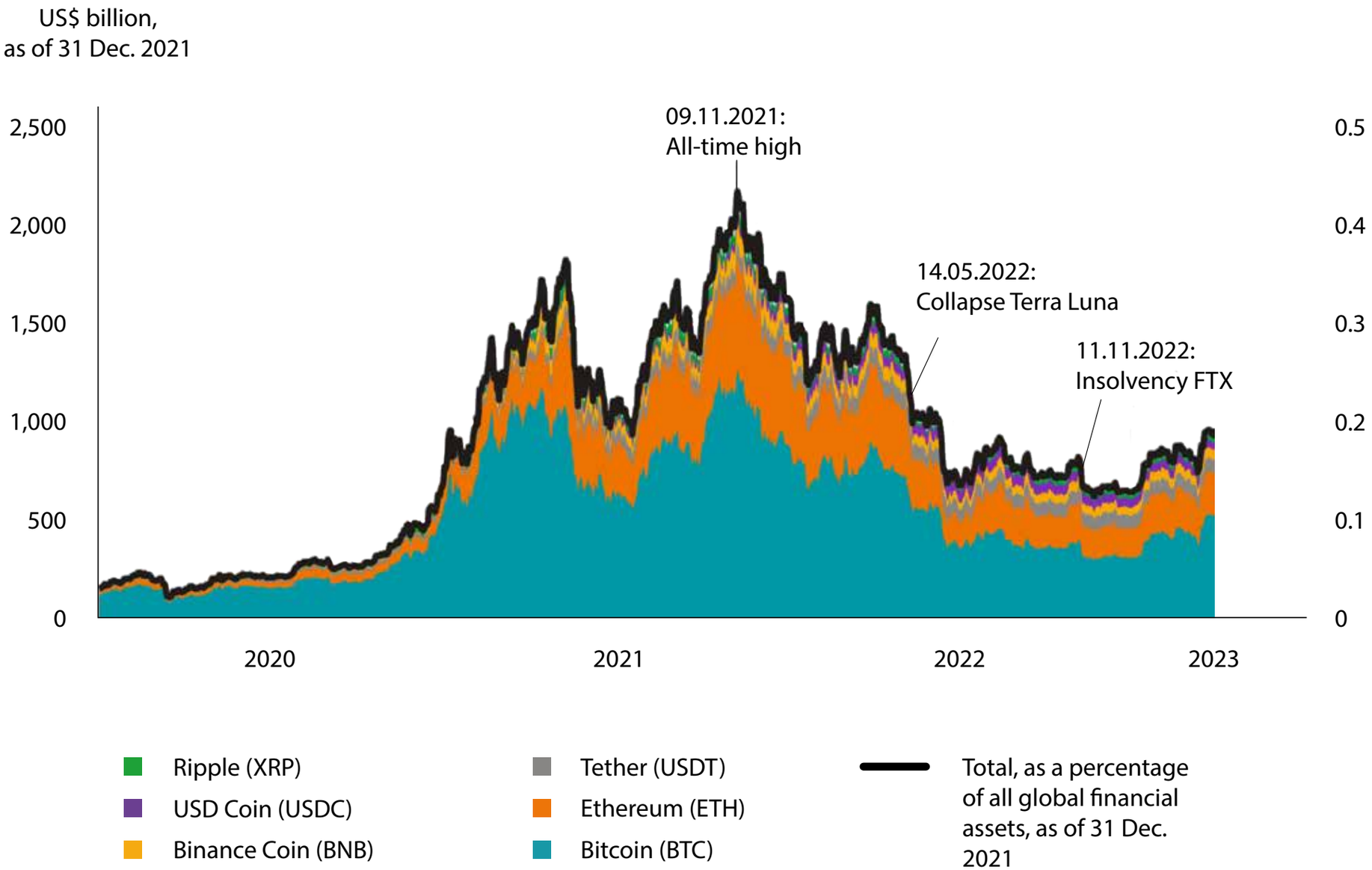
A large proportion of all cryptoasset trading takes place on just a few platforms. Centralised cryptoasset service providers and cryptoasset conglomerates offer many different services simultaneously, such as brokerage, trading, lending, custody, as well as clearing and settlement. This concentration of activities can lead to conflicts of interest and excessive risk-taking though.

Part of cryptoasset activity has shifted to decentralised finance (DeFi). In this model, financial intermediaries are replaced by autonomous (and self-executing) open-source software protocols deployed on public blockchains.

Unlike in the case of centralised cryptoasset exchanges, where most transactions are initially settled outside of the blockchain network, all transactions are executed on the blockchain ('on-chain'). Changes to the software code should not be decided by central bodies, but by a 'community' and 'governance token', representing a kind of voting right.

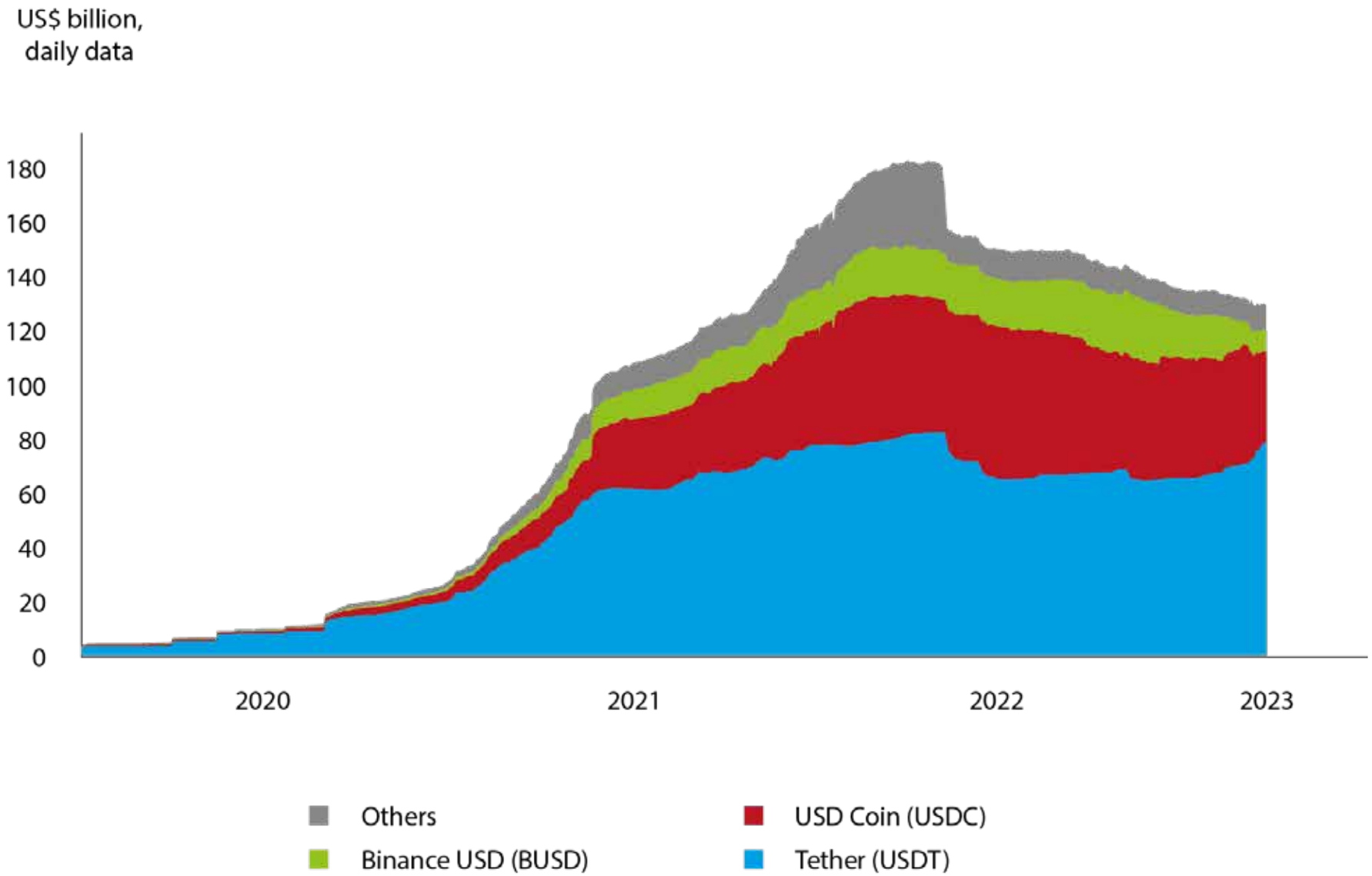
What sounds like a decentralised system is, in practice, often highly concentrated. The monitoring and governance of DeFi protocols is often in the hands of a few founders or developers, who gradually transfer relevant rights to a broader community. Hence, only a very few projects function in a truly decentralised manner[24].

Chart 4. Market capitalisation of cryptoassets is highly concentrated and low compared to the traditional financial system.



Sources: Coincodex.com and Financial Stability Board. Deutsche Bundesbank.

Chart 5. The market for stablecoins peaked in early 2022, and it is highly concentrated.



Sources: Coinindex.com.
Deutsche Bundesbank.

A key metric to evaluate the size of DeFi is total value locked (TVL), reflecting the sum of crypto- assets that have been transferred to the software code underlying a DeFi protocol[25]. These codes are called 'smart contracts'.

These protocols can replicate a wide range of financial services, but lending and trading of cryptoassets are currently the most important ones. After very strong growth in 2021, the size of the (global) DeFi market decreased enormously in 2022, in line with the overall development in the cryptoasset market (Chart 6).

In today's most important blockchains, validators join groups ('pools'). The resulting high concentration at the level of validators can potentially have a negative impact on the security and transparency of a blockchain[27].

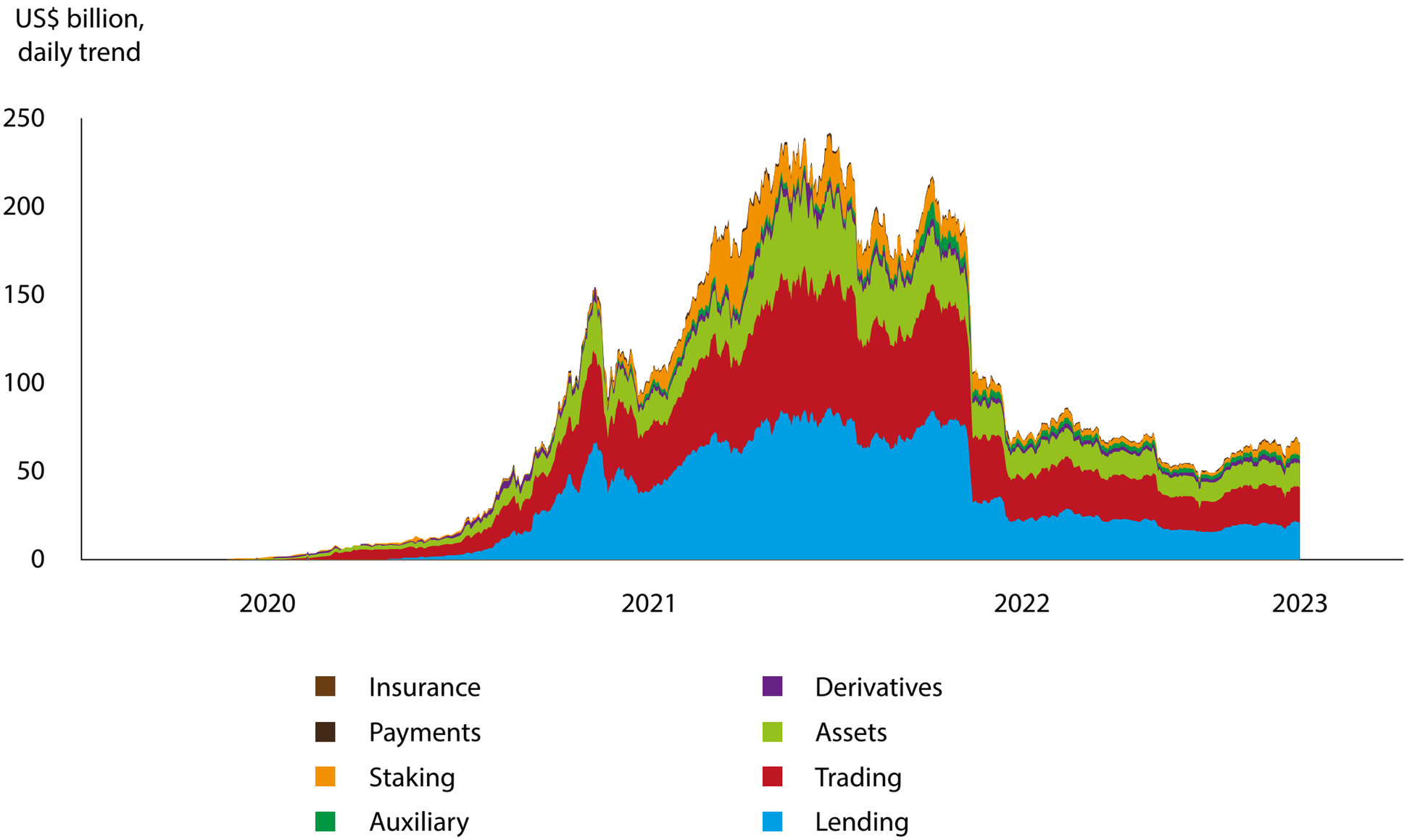
Common exposures and interconnectedness

The cryptoasset system is highly interconnected, as highlighted by the recent bankruptcies of numerous cryptoasset entities. Procyclical selling can thus affect the overall volatility of cryptoasset markets.

Common exposures in the cryptoasset system largely correspond to those in the traditional financial system. Prices of cryptoassets have been responsive to macroeconomic fundamentals such as monetary policy shocks, especially since 2020[28]. Prices declined sharply during recent periods of increased macro-financial risks, much in line with traditional asset classes such as equities (Chart 7).

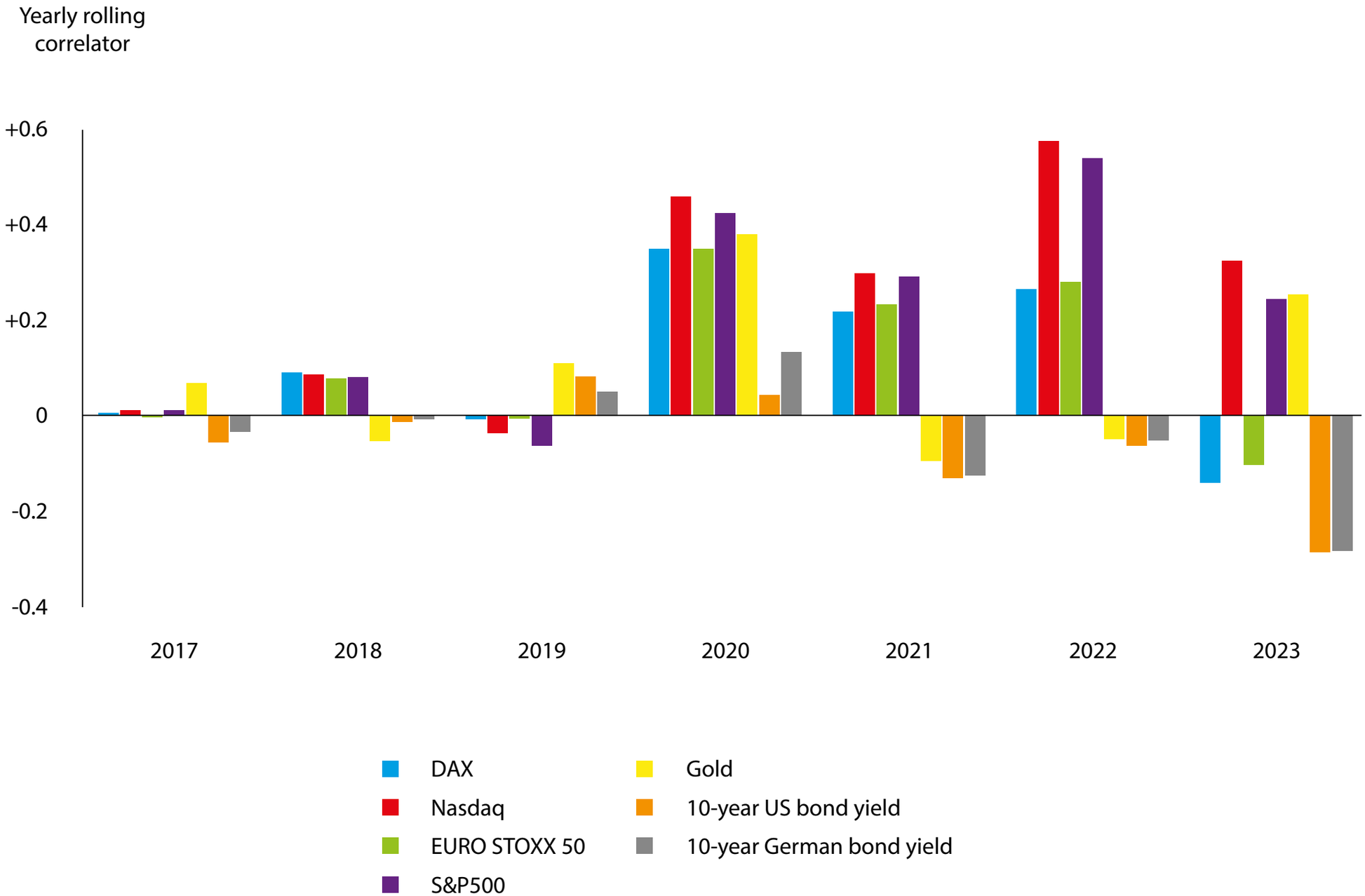
In addition, the cryptoasset system is highly exposed to settlement and operational risk in a small number of blockchains. For example, almost two-thirds of DeFi activity is based on the Ethereum blockchain as a settlement layer[29].

Chart 6. DeFi activity peaked at end-2021 before collapsing in line with the overall cryptoasset market.



*Source: DefiLama.com and Bundesbank calculations. * The size of the decentralised finance market is commonly measured using total value locked (TVL). TVL represents the sum of all assets deposited in decentralised finance protocols earning rewards, interest, new tokens, fixed income, etc. It should be noted that TVL can vary depending on the source used, the calculation method, and the actual amounts depend on the liquidity of the markets. This indicator is further broken down into selected decentralised finance initiatives such as trading, staking and payment protocols.*
Deutsche Bundesbank.

Chart 7. Correlations between Bitcoin returns and other asset classes have fluctuated over time.



Sources: Bloomberg Finance LP and Bundesbank calculations.
Deutsche Bundesbank.

The cryptoasset system is exposed to liquidity risk. Only a few stablecoins are crucial for the liquidity of cryptoasset trading, and they are also widely used as collateral for collateralised loans or margin trading.

Liquidity in the cryptoasset system specifically depends on a few stablecoins pegged to the US dollar[30]. These back their tokens mainly by investments in money market instruments. The system is thus exposed to shocks in money markets.

Currently, the cryptoasset system is not highly connected with the financial system. As long as cryptoasset entities do not have the necessary licences themselves, they depend on banks as a bridge between central bank currencies and the cryptoasset world to receive funding.

Yet, only a few internationally active banks reported cryptoasset exposures as at the end of June 2022, accounting for only 0.013% of total exposures[31]. Similarly, investment funds based in the EU have limited exposure to cryptoassets as well.

In April 2022, 111 funds reported cryptoasset exposures, all of which were Alternative Investment Funds[32]. The majority of these funds were small, with net asset values below €100 million. By way of comparison, there is a total of around 60,000 investment funds in the EU, representing an aggregate net asset value of around €18 trillion[33].

Complexity

Cryptoasset providers can be highly complex. Cryptoasset conglomerates resemble financial conglomerates with complex risk profiles[34]. They not only operate as pure exchanges, but offer many different services within a single entity, including custody and derivatives trading.

In the traditional financial system, these activities are separated or subject to prudential requirements in order to prevent conflicts of interest. In the case of FTX, for example, a similar separation or sufficient governance structures were not in place[35].

Cryptoasset conglomerates provide financial functions across multiple jurisdictions and operate through a network of global affiliates. Some are headquartered in unregulated offshore regions or have no known headquarters at all.

In addition, it is difficult to enforce rights against a specific person in a decentralized system without appropriate governance structures. This prevents effective supervision through domestic regulators, especially in the absence of international agreements on regulatory compliance and supervision[36].

Substitutability

Some blockchains and assets within the crypto system would be difficult to replace in the short term. At the current juncture, the crypto system is largely self-referential, and cryptoassets are hardly used outside the crypto system. This limits negative implications for the functioning of the broader financial system or for the real economy.

In certain developing countries, however, the situation differs. El Salvador, for example, has declared Bitcoin to be legal tender. But even in countries that actively promote the use of cryptoassets as a means of payment, adoption seems to remain limited[37].

Leverage

High leverage is a key risk for financial stability – in traditional finance as well as in cryptoasset markets. A high degree of leverage amplifies boom and bust phases within the cryptoasset system, and it can be a channel for the propagation of shocks to the traditional financial system[38].

Leverage is a particular issue in the cryptoasset system, as collateral often consists of unbacked cryptoassets with no intrinsic value, which tend to be highly volatile. Borrowed funds are often reused as collateral for other loans, giving rise to 'collateral chains'[39].

In the event of an abrupt decline in prices, a chain reaction can occur as assets serving as collateral are automatically liquidated, thus amplifying the price declines.

Cryptoasset exchanges allow for margin trading that increases leverage: the exchange lends cryptoassets to users, usually against collateral. In these margin trades, a user could borrow cryptoassets worth up to 20 times the collateral value[40]. Some exchanges also offer leveraged derivatives that can achieve leverage multiples of up to 100 times.

Leverage has indeed been a key channel of contagion during recent spells of market turbulence. The collapse of the stablecoin TerraUSD in May 2022 led to heavy losses for highly leveraged cryptoasset hedge funds. As a result, they were unable to meet their margin calls, thereby triggering bankruptcies of cryptoasset lending platforms[41]. Also, the insolvency of FTX was caused by lending out client funds to affiliated entities engaged in margin trading[42].

Implications for the regulation of cryptoasset markets

Risks inherent in cryptoasset markets require preventive regulation

Risks that are inherent in the traditional financial system are also inherent in cryptoasset markets. This requires appropriate regulation – regulation which does not unduly constrain innovation, but that ensures investor protection, financial market functioning, and financial stability.

Providers of services in cryptoasset markets need to comply with basic standards – above all accounting standards. Additional rules apply to providers of financial services: rules on consumer protection, conduct rules, rules preventing money laundering and anti-terrorist financing rules, and microprudential regulation. Ultimately, all these policies lay the foundation for a stable and resilient financial system.

At the current juncture, the size of cryptoasset markets may not pose immediate risks to financial stability. Having said that, financial regulation has an important preventive function.

The OECD's principles of financial regulation state: *"A pre-cautionary approach is warranted in financial regulation; policy makers should pro-actively anticipate and address emerging risks and problems and not initiate reforms solely in response to the onset of a crisis."*[43]

Therefore, it is important to address potential systemic risks as early as possible through preventive regulation. Economically similar activities and risks require similar regulation and supervision.

Preventive regulation requires monitoring risks in cryptoasset markets

Preventive regulation requires, at a minimum, to carefully monitor cryptoasset markets. Doing so requires significantly improved information.

Atlas, a project of the Eurosystem Centre of the BIS Innovation Hub, will develop a data platform to provide reliable insights into the macroeconomic relevance of DeFi and cryptoasset markets. This open-source data platform will provide information on market capitalisation, economic activity and international flows of cryptoassets[44].

Competitive effects on the core financial system also need to be better understood. If new entrants facing weaker regulation provide better financial services, competitive pressure on incumbents increases. This can be welfare-enhancing – but it can also imply undue risks which become more difficult to contain once a market segment has grown.

Monitoring based on information that is provided voluntarily by the private sector does not suffice. There is no assurance that such information is regularly available and of sufficient quality. Hence, we need minimum reporting standards for cryptoasset providers that allow for a consistent monitoring of markets and risks.

International initiatives address risks and improve monitoring, while gaps remain

Several regulatory initiatives are ongoing with the aim of monitoring cryptoasset markets, separating cryptoasset markets from the core financial system, and addressing risks in cryptoasset markets.

The Financial Stability Board coordinates international regulatory and supervisory approaches to cryptoasset activities. In 2020, it published recommendations on the regulation, supervision and oversight of global stablecoin arrangements[45]. Updated recommendations are scheduled for publication in July 2023[46].

As regards the exposure of banks to cryptoassets, the Basel Committee on Banking Supervision (BCBS) adopted a supplement to the Basel Framework in 2022 that sets international minimum standards for the prudential treatment. Two groups of cryptoassets are distinguished:

- Group 1 comprises tokenised traditional assets and certain stablecoins. These are subject to capital requirements based on the risk weights of underlying exposures as in the existing Basel Framework.

- Group 2 comprises all other cryptoassets, including unbacked cryptoassets. These are subject to more conservative capital requirements. A bank's total exposure must not exceed 2%, and should be lower than 1%, of its Tier 1 capital. If exposures exceed 2% of the bank's Tier 1 capital, then the full exposure to assets in Group 2 must be backed by own funds.

Banks have to comply with these rules by 1 January 2025, and implementation will establish reporting requirements for banks.

The European Union is already in the process of implementing new standards, which arguably makes it the first jurisdiction with a comprehensive regulatory regime for cryptoassets and markets[48]. The European Union's Markets in Crypto-Assets Regulation (MiCA) balances incentives for innovation against risks to the financial system and investors through:

- requirements regarding the issuance of cryptoassets and cryptoasset services;
- the authorisation and supervision of issuers of cryptoassets and of cryptoasset service providers;
- capital requirements and governance rules;
- reserve requirements for stablecoin issuers based on the existing regulations for e-money issuers.

MiCA will also impose reporting requirements on entities carrying out cryptoasset activities. Issuers of stablecoins not pegged to the euro with an issuance value of more than €100 million must report certain information.

Providers of trading platforms must make information publicly available, and they must give public authorities access to data. Enhanced monitoring arrangements apply to 'significant' service providers (with at least 15 million active users).

With the international approach of regulation and containment, we are on the right track – but significant gaps remain. Further work in a number of areas is required:

- Address concentration risks: currently, MiCA imposes governance requirements for activities within the same entity but not for activities across an entity or group[49]. Given that risks can arise from the concentration of certain activities within one entity, it needs to be monitored whether MiCA addresses these risks sufficiently or whether an extension is needed.

- Address risks related to banks issuing cryptoassets: risks for banks from issuing their own cryptoassets, such as tokenised deposits, require monitoring and mitigation, as needed. Regarding tokenised deposits, it has not yet been fully clarified whether they would fall under cryptospecific regulation or under traditional banking regulation.

- Limit regulatory arbitrage[50]: service providers from regions that do not implement minimum regulatory standards could be prevented from providing services in well-regulated jurisdictions.

  One option would be to prohibit cryptoasset service providers and banks in well-regulated jurisdictions from doing business with providers in non-compliant jurisdictions. Also, a common understanding of the scope of MiCA and the approach to decentralised DeFi applications across Europe is needed.

- Improve reporting: MiCA addresses risks in parts of the cryptoasset market, and it provides improved information. However, cryptoasset activities that are currently not covered by MiCA, such as cryptoasset lending, need to be closely monitored as well.

  Moreover, reporting requirements for cryptoasset exposures should be introduced not only for banks but also for other financial institutions. For example, MiCA sets out no reporting requirements for wallet providers or for exposures between trading platforms and issuers. Also, there are no requirements for financial institutions other than banks to report exposures to cryptoassets.

Summing up

Cryptoassets and markets are a relatively recent innovation in finance. It may be too early to draw lessons about how useful they are. But good regulation needs to err on the side of caution. The evidence so far clearly shows the need to monitor and take preventive action against risks in these markets through:

- preventive regulation,
- better reporting systems and good monitoring and
- limiting regulatory arbitrage.

Cryptoassets promise more innovative ways of providing financial services than the traditional financial system, but they also entail risks that are strikingly similar: high market concentration, complexity, common exposures, and high operational risk.

And, in the end, it is not technologies that manage risks but people. The history of finance is ripe with examples of risks that have been shifted to uninformed parties – willingly or unwillingly.

Good regulation is about incentivising risk-taking that is beneficial for society, while preventing risk-taking that is harmful for others.

The first line of defence against innovation that does more harm than good is informed consumers of financial services and strong consumer protection. Currently only a small part of the population invests in cryptoassets[51].

But current developments in financial markets have made us painfully aware that risks to financial stability are real. These risks have effects that go way beyond just the investors in financial assets, including cryptoassets. If things turn sour, it is the entire population that bears the costs – in terms of repercussions to the real economy or costs to the taxpayer.

We clearly need more conceptual work on the risks and benefits of financial innovation. The future use cases of a cryptoasset product are hard to predict, even for its developers. This opens the door for an important research agenda. We need a better understanding of the welfare effects of financial services, of the drivers and mitigants of risk. ■

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Endnotes

1. See Droll and Minto (2022) on the role of law and regulation in shaping technological trends in post-trading, including the use of blockchains.

2. Data from https://coinmarketcap.com/, accessed 31 March 2023.

3. See http://ushakrisna.com/ABS.pdf, Basel Committee on Banking Supervision (2011) and Bertay, Gong and Wagner (2017).

4. See Allen (2022a).

5. See Deutsche Bundesbank (2022).

6. See Basel Committee on Banking Supervision (2023) [https://www.bis.org/bcbs/publ/d546.pdf] and Cornelli, Doerr, Frist and Gambacorta (2023).

7. See McCaul (2023) for a discussion on how to improve the oversight of cryptoasset markets.

8. See Financial Stability Board and International Monetary Fund (2022).

9. Cong, Li, Tang and Yang (2022) estimate the share of 'wash trading' to be as high as 70% of total trading activity in unregulated cryptoasset exchanges. 'Wash trading' describes a type of market manipulation in which investors simultaneously buy and sell the same financial assets in order to create artificial activity in the market. This distorts prices, volumes, and volatility in unregulated marketplaces.

10. See European Systemic Risk Board (2023).

11. See Bremus and Buch (2017).

12. See Adrian and Brunnermeier (2016). CoVaR measures the "Value at Risk" of the financial system, conditional upon an individual financial institution being in distress. A higher value implies higher systemic risk.

13. See Financial Stability Board (2021).

14. See Diamond and Rajan (2009) and Deutsche Bundesbank (2019).

15. See Basel Committee on Banking Supervision (2013).

16. See Financial Stability Board (2021).

17. See https://www.bloomberg.com/features/2022-lehman-brothers-collapse-plan-repay-after-bankruptcy/#xj4y7vzkg
18. See Basel Committee on Banking Supervision (2021).
19. See Financial Stability Board (2022).
20. See Gschossmann, van der Kraaij, Benoit, and Rocher (2022).
21. See European Systemic Risk Board (2023).
22. See Financial Stability Board (2023a) for challenges in crossborder payments.
23. See https://coinmarketcap.com/charts/, accessed 30 March 2023.
24. See Aramonte, Huang and Schrimpf (2021).
25. See European Systemic Risk Board (2023).
26. See Makarov and Schoar (2022).
27. For the Bitcoin blockchain, which is considered to be fully decentralised, four entities provide more than half of the validation power. See https://blog.trailofbits.com/wp-content/uploads/2022/06/Unintended_Centralities_in_Distributed_Ledgers.pdf
28. Benigno and Rosa (2023) find limited evidence that Bitcoin prices immediately react to monetary and macroeconomic factors when looking at data since 2017. Karau (2023), however, shows that the relationship between Fed policy and Bitcoin prices has evolved over time and that Bitcoin returns respond strongly to FOMC announcements after 2020. Kyriazis et al (2023) also identify a stronger effect on the volatility of Bitcoin and Ether returns in more recent time samples.
29. See https://defillama.com/chains, accessed 29 March 2023.
30. Tether, the largest stablecoin by market cap and trading volume, accounts for around 70% of all trading on centralised cryptoasset exchanges. See https://www.theblock.co/data/crypto-markets/spot/share-of-trade-volume-by-pair-denomination, accessed 29 March 2023.
31. This figure is a weighted average across the sample of banks reporting cryptoasset exposures. See Basel Committee on Banking Supervision (2023).

32. The survey was conducted among national competent authorities supervising insurers, banks and financial markets in 28 European Economic Area member states. See European Systemic Risk Board (2023).
33. See European Systemic Risk Board (2023).
34. See Financial Stability Board (2022).
35. See https://www.sec.gov/news/press-release/2022-219
36. See Animashaun (2022).
37. See https://www.imf.org/en/News/Articles/2023/02/10/el-salvador-staff-concluding-statement-of-the-2023-article-iv-mission
38. See European Systemic Risk Board (2023).
39. See Financial Stability Board (2023b).
40. See European Systemic Risk Board (2023).
41. See https://www.ft.com/join/licence/efeefef3-0ec1-4aa4-8bf0-0938f8f18097/details?ft-content-uuid=126d8b02-f06a-4fd9-a57b-9f4ceab3de71, accessed 13 April 2023.
42. See Allen (2022b).
43. See Organisation for Economic Co-operation and Development (2010).
44. See https://www.bis.org/about/bisih/about.htm, accessed 03 April 2023.
45. See Financial Stability Board (2020). These recommendations are currently under revision.
46. See Financial Stability Board (2022).
47. Some requirements are stricter than for stablecoins under the European legislation (MiCA). For example, at present, no stablecoin issued on a permissionless blockchain may be classified as a Group 1 asset.
48. MiCA also foresees that issuers of e-money tokens, stablecoins referenced to one single currency, should be required to be issued either by a credit institution, as defined in the Capital Requirements Regulation, or by an e-money institution authorised under the revised Electronic Money Directive ('EMD2').
49. See European Systemic Risk Board (2023).

50. Minto, Prinz and Wulff (2021) discuss regulatory arbitrage in financial markets.
51. Various surveys suggest that the vast majority of consumers do not own cryptoassets. An ECB survey conducted in Belgium, Germany, Spain, France, Italy and the Netherlands in November 2021 revealed that 10% of households owned cryptoassets (European Central Bank 2022). A survey conducted in Germany found that 4% of the population held cryptoassets at the end of the year 2021. See Zahlungsverhalten in Deutschland 2021 (bundesbank.de). An ECB survey covering the entire euro area also found that 4% of the population owned cryptoassets at the end of the year 2022. See Study on the payment attitudes of consumers in the euro area (SPACE) – 2022 (europa.eu).

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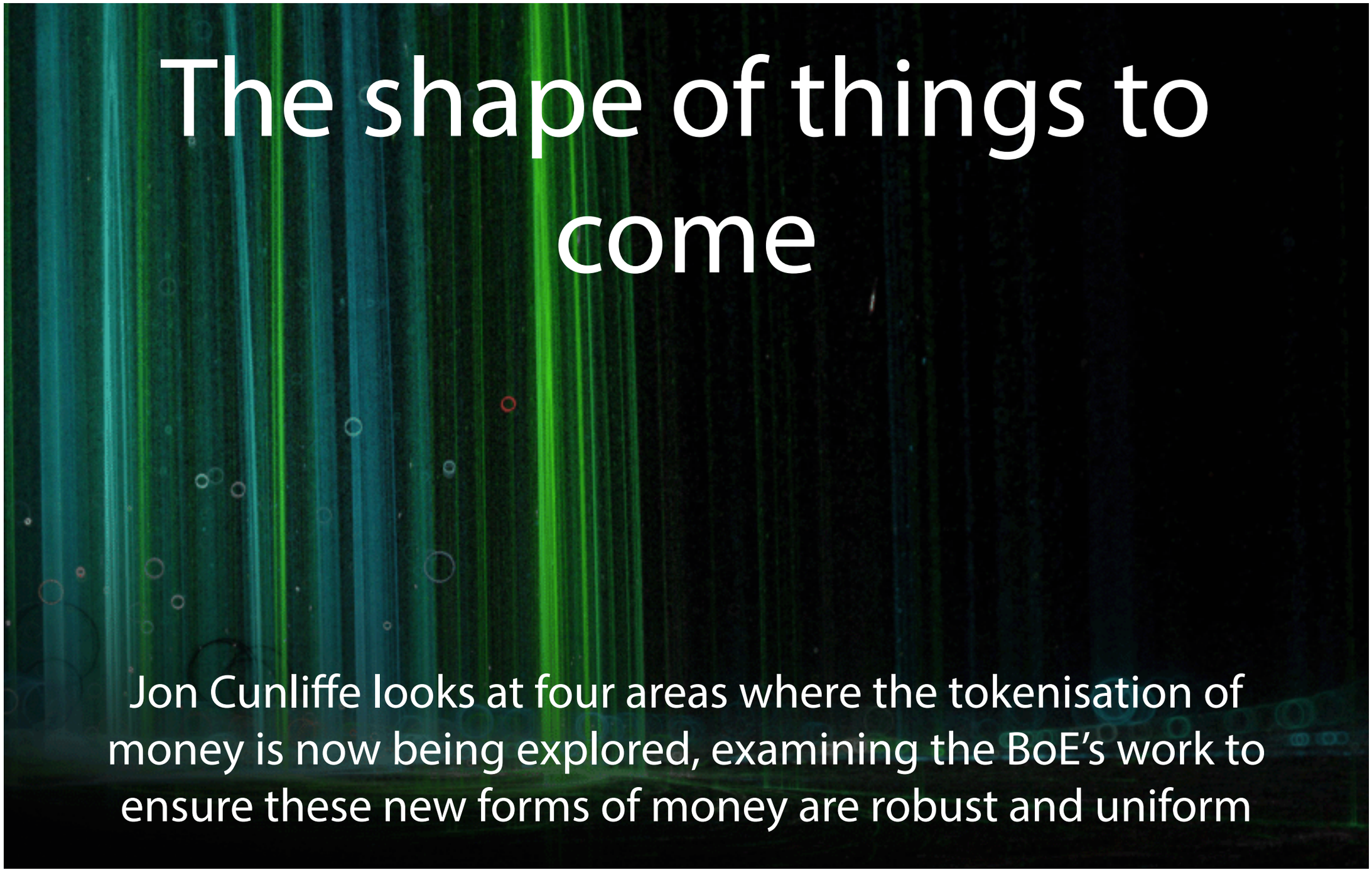

The shape of things to come

Jon Cunliffe looks at four areas where the tokenisation of money is now being explored, examining the BoE's work to ensure these new forms of money are robust and uniform

I want to concentrate my remarks on payments and money – how we pay for things and what type of money we use. These once dusty and forgotten corners of the financial system have been transformed in recent years. And there are good reasons to believe that even more radical change is on the horizon.

I will discuss developments within in the UK, but much of the trends and the possibility of further technological advances that I will cover are relevant for crossborder payments which have lagged far behind the developments we have seen in recent years in domestic payment systems. And which merits a speech all of its own.

I should start however with a health warning. Central bankers are very used to forecasting the economic future. It is at the heart of what we do. And I can say from experience that, despite the masses of data and our complex mathematical models, it is not an easy task. The future, as the last few years of pandemic and war have shown us, rarely behaves as it should.

However, forecasting the direction and pace of technological innovation - and, crucially, the way it will interact with social and economic trends - is an even more hazardous enterprise. Much lauded innovations prove to be dead ends or fail to be adopted. Unheralded ones emerge at speed. And often it is the unforeseen combination of a number of technological advances that generates radical change.

Against that background, public authorities, like the Bank of England, that are charged with maintaining financial stability and with the regulation of the financial system need to be forward looking, for two key reasons.

The first is that while we cannot be certain how new technologies and social and economic trends will play out, we need to have thought through in advance how the risks might need to be managed and, where the likelihood of major change is high, have the regulatory frameworks and powers in place.

Playing regulatory catch up with new technologies once they become established and adopted at scale can be very difficult – as some of the experience in recent years with social platforms and other big techs has demonstrated. And it generates uncertainty for innovators.

We aim to be forward looking, developing both in developing the regulatory frameworks and in developing public systems and public money necessary so that safe innovation can flourish to the benefit of all

The second is that we want competition and innovation in financial services – it can increase efficiency, functionality and resilience. Setting out the regulatory approach allows those who want to innovate by providing better products and services to understand the risks that need to be managed as they develop those products. It also ensures that innovation is not simply competing by taking higher risks.

This approach has been a key element in the evolution and adoption of innovation in payments in the UK in recent years. Against the background of increasing digitalisation of everyday life, the combination of technological advance and appropriate regulatory frameworks[1] - both to foster competition and to manage risks – has transformed the way we pay. It has also stimulated the growth of the UK Fintech sector which is now the second largest in the world[2].

Contactless' card payments are now used by close to 90% of people and make up almost a third of all payments in the UK, Nearly a third of UK adults use mobile payment apps such as ApplePay or GooglePay. Seven million consumers and three-quarters of a million SMEs are using Open Banking products. Several digital only challenger banks operate in the UK providing competition and innovation to the UK banking sector.

These changes have not only transformed the way people pay but also the type of money they pay with. Two types of money circulate in the UK today. The first is public money', money issued by the Bank of England in the form of physical cash; the second is 'private money', issued by commercial banks in the form of electronic bank deposits.

Until relatively recently, the great majority of everyday transactions in the UK were made in publicly issued money, notes and coin. Electronic transfers of commercial bank money tended to be reserved for higher value transactions.

However, as the cost of electronic money transactions has come down and the functionality increased, and as our daily lives have become more digitalised, commercial bank electronic money has come to dominate payments in the UK.

Card payments surpassed cash as the most commonly used form of retail payment in 2016. By 2021, 85% of payments were made electronically (either through cards or bank transfers). However, as the experience with contactless and mobile payments shows, innovation in payments will continue as new technologies and business models develop.

The ability to transact in cash, of course, remains very important to a substantial part of the population and often to the most vulnerable. And cash is clearly an important store of value for many in times of stress[3]. The Bank of England has been very clear that it will continue to issue cash as long as there is any demand for it[4].

But the recent trend away from publicly-issued, Bank of England, physical money and towards electronic money issued by private sector banks is very clear. And we should expect that trend to continue for a number of reasons.

First, and most obviously, what I have called the digitalisation of everyday life will continue. The growth of internet commerce or use of banking and payments apps, for example is forecast to grow/unlikely to stop.

Second, there are further developments in train within existing payment systems, infrastructure and regulatory frameworks. These include Pay.UK's development of the New Payments Architecture[5]. The Bank of England is well advanced in the build and implementation of a new central bank real time payment system (RTGS), the central rail of the current UK payments infrastructure.

This renewal programme will increase resilience and access, and offer wider interoperability, improved user functionality and strengthened end-to-end risk management of the UK's High Value Payment System. As announced, the government and regulators[6] will expand the Open Banking framework through making improvements on API performance, improving the provision of information sharing to third party providers and working towards additional functionalities, such as variable recurring payments.

Third, and looking a little further into the future, over the last decade a set of newer technologies have emerged which may have the potential for a further transformation in payments. I am referring here to technologies that have been pioneered and refined in the crypto world, such as tokenisation, encryption, distribution, atomic settlement and smart contracts.

These developments have been much hyped of course, and one could not say it was a certain bet that they will be as transformative as some have claimed. But some have already begun to find their way into conventional finance[7] and there is a great deal of experimentation and development going on, both in the crypto world and in conventional finance.

They offer the prospect of what is loosely called the 'tokenisation' of financial and other assets – including the 'money' that is used to settle - and thereby a more extensive, faster and more secure programming/automation of transactions. And they offer new ways to record the ownership and the transferring of ownership, of assets - again including the transfer of money – which we generally call 'payments'.

One can certainly think now of possible use cases for such functionality. In the world of wholesale financial transactions, for example, they may make it possible to cut out intermediaries and make trading and settlement

instantaneous. In retail payments, for example, they may enable functionality like micro-payments and more flexible programming of money for everyday uses.

But perhaps more important may be the use cases we cannot see at present. A good illustration of this is the expansion of use cases for the smart phone which I am reasonably sure has far exceeded anything that could have been imagined when the first iPhone and apps were introduced in 2007. At launch the iPhone had just 15 apps, the app store opened the following year with around 500 apps which has grown such that today it holds over 2 million.

The potential tokenisation of money and development of new ways of transferring it in transactions has major implications for the Bank of England. It is not just that we are responsible for ensuring that payment systems work seamlessly and without disruption in the UK, crucial though that is for financial stability.

It is also, and more fundamentally, because we are ultimately responsible for ensuring that each of the monies circulating in the UK – and at present we have around 800 private banks, building societies and credit unions issuing money[8] - are both robust and uniform.

By robust, I mean that users can have confidence that the money will be useable and accepted in transactions. By uniform I mean denominated in the same currency unit – Sterling – and seamlessly exchangeable for any other money in circulation on demand and without loss of value.

Against that background, I want to look at four areas where the tokenisation of money is now being explored. The first is stablecoins used for payments, the second is the tokenisation of commercial bank deposits, the third is the next stage of the Bank of England's work on issuing a Digital Pound and the last is the Bank's work to ensure to ensure these new forms of money are robust and uniform.

The emergence, in the world of cryptoassets of so-called stablecoins is at the forefront of developments in the tokenisation of money. Stablecoins broadly comprise a digital financial asset that purports, by one means or another[9], to maintain a stable value, a ledger system, usually a distributed ledger, for recording and transferring ownership. These are supported by exchanges for trading the coins and custody arrangements for storing them.

At present, they are issued by a variety of non-bank entities. So far their use has been confined to facilitating trading and other transactions in the world of cryptoassets but there are proposals to introduce them for other payment purposes in the economy and for crossborder use in competition with money issued by commercial banks and conventional payment systems[10].

Stablecoins offer the possibility of greater efficiency and functionality in payments. But they currently sit outside most of the regulated framework and it is extremely unlikely that any of the current offerings would meet the standards for robustness and uniformity we currently apply both to commercial bank money and to the existing payment systems that transfer commercial bank money between the parties to a transaction.

The Financial Services and Markets Bill will give the Bank powers to regulate operators of systemic payment systems and systemic service providers using 'digital settlement assets', including stablecoins that are used, or are likely to be used, for payments, at systemic scale in the UK.

It will also give the FCA powers to regulate the issuance and custody of fiat-referenced stablecoins for conduct and market integrity. We and the FCA[11] plan to consult later this year on the regulatory frameworks we will apply to stablecoins.

The Bank of England's regulatory framework, in line with the legislation, will cover the issuance of stablecoins which are used for payments at systemic scale, the systems for transferring the coins, and also extend to systemic service providers such as custody wallets that are an intrinsic part of the stablecoin arrangement.

It will give effect to two expectations for systemic or likely to be systemic stablecoins that have been set by the Bank's Financial Policy Committee. First, that payment systems that use stablecoins should be regulated to standards equivalent to those applied for traditional payments. And second that stablecoins used as money for payments should meet equivalent standards to those provided by commercial bank money.

It will follow the guidance on the relevant international standards set last year[12], including the requirement that the coins should be redeemable from the stablecoin arrangement, in fiat money, at par value and on demand[13]. This matches the requirement for commercial bank money and is crucial both to ensure confidence in the coins and their uniformity with other sterling money.

Systemic stablecoins will need to be backed with high quality and liquid assets to be able to meet these expectations and standards, as set out by the Financial Policy Committee[14]. These could include either deposits at the Bank of England or very highly liquid securities, or some combination of the two. We are currently considering which of these options is most appropriate.

In doing so, we will need to take two important considerations into account. The first is that, unlike commercial bank money which is protected by deposit insurance up to £85,000, it will not be possible – initially at any rate – to give stablecoin holders industry funded protection against failure of the coin.

This reinforces the need to ensure that the backing assets are at all times of sufficient value to meet redemption requests. And it also highlights the potential role of capital requirements.

The second consideration is that the underlying objective of the legislation and the ensuing regulation is to open further the frontier for safe and sustainable innovation and competition in payments. Stablecoin business models should in general reflect this and be grounded in improved payments efficiency and functionality rather than in maturity transformation.

There are other important questions to be resolved, such as whether there should be limits, initially at any rate, on stablecoins used for payments. While, from a public policy perspective, we want competition and innovation in payments we need to guard against rapid, disruptive change that does not allow the financial system time to adjust and could therefore threaten financial stability.

The risks to financial stability from the development of digital money issued outside the banking system has been the subject of extensive analysis. The Bank of England's assessment is that over time, the financial stability risks should be manageable including risks from the impact on the banking system[15].

But we cannot know for certain the extent and the speed at which payment stablecoins might be adopted and we may well need limits, at least initially, to ensure we avoid disruptive change that could threaten financial stability.

Another important question will be whether the requirement to be redeemable in fiat money, on demand and at par and the backing asset model will be sufficient to ensure uniformity of sterling stablecoins with each other and with other forms of sterling money. This will depend to some extent on whether there are frictions in the redemption and interchange process.

It has been suggested that ensuring the uniformity (or 'singleness' of money) requires that all transactions between different monies settle ultimately in central bank money across the books of the central bank.

While it is not clear to me that this should be the case, it is clearly an issue that should be considered carefully in the design of the regulatory regime.

Finally, on stablecoins, it is important to emphasise that powers in the Bill and the Bank's regime will be for stablecoins used for payments. A digital representation of an asset with a generally stable value could be used for other purposes. It could offer a return as an investment product akin to a money market fund. Or it could be part of the credit creation process, with the loans issued in the form of stablecoins.

Neither of these models is likely to fit within the regulatory regime for payment stablecoins, though they may fit within other regulatory regimes. In the first case, to be acceptable as a means of payment at systemic scale, stablecoins will be required to meet redemption at par on demand which is inconsistent with an investment product.

In the second case, the issue of liquid liabilities that can be used as money in return for illiquid debt obligations is the banking business model and issuers of tokenised money who wish to pursue credit creation will need to be regulated as banks.

This brings me to the second area, the issuance by commercial banks of new forms of digital money to be used on new payment rails – in the form of 'tokenised' bank deposits. These might offer some or all of the functionality and efficiency claimed for stablecoins, allowing banks deposits to compete better with non-bank payment coins.

Some banks in the UK and in other jurisdictions have been exploring and investing in the development of tokenised deposits as settlement assets on new forms of ledger (eg. DLT). The majority of this effort appears to have centred on wholesale as opposed to retail financial transactions[16], though there are signs that attention is now being given to tokenisation of retail deposits[17].

In regulatory terms, the tokenisation of bank deposits is a much simpler proposition than non-bank stablecoins. Bank deposits are already uniform, robust money in the UK – indeed they account for 85% of the money in circulation for retail purposes and are generally acceptable for wholesale transactions.

We have a comprehensive regulatory regime, deposit insurance and resolution and insolvency procedures to protect bank depositors. Commercial banks settle between each other in Bank of England money which helps to reinforce uniformity.

Nonetheless, the tokenisation of bank deposits raises some important questions. Currently, money issued by a commercial bank can only be held by someone that has an account at that bank. It is not directly transferable from one holder to another unless both parties have an account at the same bank.

In order to transfer money from the holder of an account at one bank to the holder of an account at another bank, there needs to be a transaction between the two banks which ultimately settles in Bank of England money across our books.

New ledger technology developed in the crypto world could allow tokenised bank deposits to circulate freely as 'tokenised deposit money', in what might be thought of as a digital banknote issued by a private bank'. They would

constitute claims on the issuing bank that could be held, for example in a wallet, without the holder having to have an account at the issuing bank.

This raises some difficult issues about how deposit insurance would operate in the event of failure of the issuing bank. Could a bank maintain a single customer view of those who held its liabilities? It also raises questions about the operation of anti-money laundering and other regulation to prevent illicit finance.

An alternative to allowing tokenised deposits to circulate freely and be directly transferable would be to require transactions on new forms of ledger, for example transactions in smart contracts involving tokenised deposits, to be settled ultimately by the adjustment of bank ledgers as happens now.

In other words, a transfer of tokenised deposits on one set of ledgers would trigger the adjustment of individuals' bank account balances and be settled by a transaction between the banks involved. In that case, deposit money issued by a bank could only ever be held in an account at that bank.

It is important that as we develop the regime for payment stablecoins, we also develop the approach for tokenised bank deposits. This will allow banks and non-banks alike, that want to develop payment solutions using new technologies, to understand clearly what is possible and what is required in the respective regulatory regimes. The PRA intends to set out its approach in this area alongside the Bank's consultation on the payment stablecoin regime.

It is of course possible that commercial banks might wish to offer payment stablecoins as opposed to tokenised bank deposits. In such cases, I think we will need to be very alive to the risks of confusion on the part of customers as to protections they are entitled to and confusion of business models within the bank itself.

There are I think strong arguments to keep these two models separate and require banks that wish to issue payment stablecoins under the new regulatory regime to do so through legally remote and otherwise distinct entities.

I want to turn now to the third potential development: the issue of a central bank digital currency either for retail or for wholesale purposes.

As many here may know, the Bank and HM Treasury published a consultation paper in February on the Digital Pound – a Sterling digital currency that would be issued by the Bank of England for general purpose retail use. No decision has been taken to implement the Digital Pound but the Bank and Treasury's assessment is that it is likely to be needed if current trends in payments and money – some of which I have been discussing – continue.

This assessment rests on two main considerations. The first is the need to anchor the value and robustness of all monies circulating in the UK. Physical cash issued by the Bank plays an anchoring role at present in a world in which only commercial banks issue private money.

If future trends continue, cash use is likely decline further and cash itself will become less is useable in all everyday transactions, for example if internet commerce grows and if merchants increasingly accept only digital payment.

At the same time, new, non-bank players are likely to enter the scene, issuing private money, such as stablecoins, for payment purposes. In such a world the right of the holder and the obligation of the issuer to be able to convert all private money into Bank of England digital money at par and on demand would secure the anchor currently provided by cash.

The second consideration is to ensure that there can be competition and innovation in the development of new functionalities using tokenised money. Given the network externalities around money and the likely cost of developing robust and risk managed private tokenised money like stablecoins, it is possible that the development of digital settlement assets will converge on a few large players who will dominate and perhaps control innovation in payment services. We have seen a similar dynamic in the emergence of large internet platforms and marketplaces[18].

The Bank and Treasury consultation paper proposes a 'platform' model of the Digital Pound in which the Bank would provide the digital settlement and central transfer mechanism and the private sector would provide the wallets and consumer facing payment services.

The Digital Pound would therefore be available to a wide variety of private sector innovators who wished to develop tokenised payment related services but do not wish or are not able to issue their own tokenised settlement asset.

There are many other extremely important considerations, such as privacy and financial stability, around the possible introduction of the Digital Pound. These are discussed in the consultation paper and I do not want to detail them now.

Rather, I would ask those interested in the payments innovation to read and respond to the consultation and the proposed model – if they have not already done so. In the next phase of the work, which will lead to a decision on whether or not to proceed to launch a Digital Pound, the Bank will work with the private sector on further experimentation, proof of concepts and to develop the technical blueprint.

The Digital Pound is envisaged as a general purpose retail digital currency for use by households and firms in everyday transactions. The Bank is often asked why it is focussing on developing a retail rather than a wholesale digital currency, given the potential for the new technologies I have been discussing to transform wholesale financial transactions and the desirability of settling such transactions in the highest quality settlement asset – ie. central bank money.

There is, bluntly, a misunderstanding here of the Bank's position. We recognise very clearly the potential transformative effect on wholesale financial markets of tokenisation of financial assets, atomic settlement, smart contracts and other emerging technologies[19].

Indeed, the Bill now in Parliament will enable us, with the FCA, to set up a sandbox in which developers can explore ideas like collapsing trading and settlement into an instantaneous smart contract.

And we want for financial stability reasons, wholesale transactions to settle in central bank money to the maximum extent possible. The question is not whether but how we should develop the machinery for tokenised transactions to settle in central bank money – in other words what will provide the most efficient, effective and fastest route to this end, given our current starting point.

One way forward is for the central bank to tokenise the wholesale money, central bank reserves, we issue and to develop a ledger system for transferring the tokens between the wholesale players that have access to the Bank's payment systems. We, like other central banks have been exploring such options.

But there are other options. One would be for a trusted private sector network to hold an account with us and tokenise the reserves and operate the ledgers and transfers within that account. Only changes in the overall balance of the account would need to be recorded in our ledgers.

In 2021 we introduced the option of an 'omnibus account'[20] to facilitate the private sector development of such networks and there are private sector proposals in progress to introduce them[21].

Another possibility would be for a tokenised ledger, including a distributed ledger, to be securely and instantaneously synchronised with our central real-time gross settlement system (RTGS).

That is not possible today in our current RTGS. But we are now well advanced in the implementation of the next generation RTGS, which is scheduled to go live next year. This system will have much greater functionality including the potential for such synchronisation - which we are now actively exploring with the London centre of the BIS Innovation Hub.

At present, given where we are on in the UK on the imminent implementation of a vastly more capable RTGS system these options look to provide a faster route to settlement of tokenised transactions in central bank money and are working with industry on how to best exploit the possibilities of the RTGS system[22]. But we will continue to remain closely engaged with all the options.

As with retail payments, it is difficult to forecast now what will prove the more successful approaches. It is most likely that, as is not uncommon with technological development, a range of approaches will eventually be implemented and will co-exist.

We have a variety of payment systems, both wholesale and retail, of different vintages operating in the UK today. I would guess that in the future, as new technologies take hold we will see both more innovation and more variety.

Changes in how we pay for things and what type of money we use is an exciting area of possibility for the fintech world. It is also a fundamental issue for the Bank of England – as a regulator, as the provider of the central high value payment rails and the issuer of the highest quality, public money in the UK.

We aim to be forward looking, developing both in developing the regulatory frameworks and in developing public systems and public money necessary so that safe innovation can flourish to the benefit of all. ■

Sir Jon Cunliffe is the Deputy Governor for Financial Stability at the Bank of England

Endnotes

1. Key public sector initiatives include the FCA's regulatory sandbox, the development of Open Banking, the introduction of a mobilisation route for new banks, the forthcoming FMI Sandbox, HMT's consultation on the regulation of cryptoassets and the provisions in the Government's recent White Paper on AI Regulation.

2. As measured by investment (Innovate Finance). The significance of the UK Fintech Sector has been set out more widely in detail as part of the Kalifa Review of UK Fintech (2021).

3. See Bank of England: Quarterly Bulletin 2022Q3. While transactional cash use fell during the COVID-19 pandemic, the value of Bank of England notes in circulation increased as cash holdings were used as a precautionary store of value.

4. This commitment has been made, for example, in public statements from Governor Andrew Bailey here, from myself here and here and Sarah John, the Bank's Chief Cashier, here.

5. The NPA is a multi-year project which will allow for real-time payments, be able to handle increasing payment volumes. It will include the rules and standards that make up various payment types, allowing the market to create new products and services as well as allowing for the development of new overlay services.

6. Open Banking's joint regulatory oversight committee consists of the FCA, PSR, CMA and HM Treasury.

7. See for example early stage use-cases of DLT for supply chain finance reported in UCL's Centre for Blockchain Technologies report 'DLT in the Supply Chain'.

8. As set out in Money creation in the modern economy | Bank of England the majority of money in the modern economy is created by commercial banks making loans.

9. The umbrella term 'stablecoin' has been used to describe a range of instruments with quite different characteristics. In particular, they may be backed by a range of financial assets, commodities or unbacked cryptoassets (which in some cases are supported by algorithmic protocols). The robustness of those backing assets and the wider safeguards for guaranteeing stability of value vary significantly across the products labelled as stablecoins.

10. See for example the Libra White Paper and related Diem technical papers.

11. As set out in the Regulatory Initiatives Grid.

12. Press release: CPMI and IOSCO publish final guidance on stablecoin arrangements confirming application of Principles for Financial Market Infrastructures (bis.org).
13. Specifically the stablecoin should be convertible into other liquid assets, as soon as possible, at a minimum by the end of the day and ideally intraday, in line with Key Consideration 5 of the PFMI.
14. Financial Stability in Focus (bankofengland.co.uk).
15. See in particular section 4.6 of New forms of digital money | Bank of England.
16. See for example the development of JPM coin and Onyx, or the action of a consortium of banks and FMIs in founding FNality.
17. Prominent examples include the Regulated Liabilities Network and the USDF Consortium.
18. This was set out in particular in the Furman Review - Unlocking digital competition, Report of the Digital Competition Expert Panel - GOV.UK (www.gov.uk).
19. Innovation in post trade services - opportunities, risks and the role for the public sector - speech by Sir Jon Cunliffe | Bank of England.
20. Bank of England publishes policy for omnibus accounts in RTGS | Bank of England
21. For example, Fnality, which was recognised late last year as a regulated payment system.
22. The Bank consulted on the Future Roadmap for the RTGS system in Spring 2022. Earlier this year we issued a response to that consultation setting out that we will prioritise features supporting innovation and global initiatives, which include synchronised settlement, extended operating hours and non-payment APIs.

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World Commerce Review is pleased to announce that Euro Exim Bank has been awarded the WCR Best Trade Finance Bank 2023.

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The power and perils of the artificial hand

Generative AI could change our lives. Gita Gopinath considers artificial intelligence through the ideas of Adam Smith

Nowadays, it's almost impossible to talk about economics without invoking Adam Smith. We take for granted many of his concepts, such as the division of labour and the invisible hand. Yet, at the time when he was writing, these ideas went against the grain. He wasn't afraid to push boundaries and question established thinking.

Smith grappled with how to advance wellbeing and prosperity at a time of great change. The Industrial Revolution was ushering in new technologies that would revolutionize the nature of work, create winners and losers, and potentially transform society. But their impact wasn't yet clear. *The Wealth of Nations*, for example, was published the same year James Watt unveiled his steam engine.

Today, we find ourselves at a similar inflection point, where a new technology, generative artificial intelligence, could change our lives in spectacular—and possibly existential—ways. It could even redefine what it means to be human.

Given the parallels between Adam Smith's time and ours, I'd like to propose a thought experiment: if he were alive today, how would Adam Smith have responded to the emergence of this new 'artificial hand'?

Beyond the invisible hand

To explore this question, I'd like to start with his most famous work, *The Wealth of Nations*. A seminal idea in this work is that the wealth of a nation is determined by the living standards of its people, and that those standards can be raised by lifting productivity, that is the amount of output produced per worker.

This idea is especially relevant today because global productivity growth has been slowing for more than a decade, undermining the advancement of living standards.

AI could certainly help reverse this trend. We could foresee a world in which it boosts economic growth and benefits workers. AI could raise productivity by automating certain cognitive tasks while giving rise to new higher-productivity tasks for humans to perform.

With machines taking care of routine and repetitive tasks, humans could spend more time on what makes us unique: being creative innovators and problem solvers.

AI could be as disruptive as the Industrial Revolution was in Adam Smith's time. We will need to carefully balance support for innovation with regulatory oversight

Early evidence suggests AI could substantially raise productivity. A recent study examined how customer-service agents worked with a conversational assistant that used generative artificial intelligence. The AI assistant monitored customer chats and gave agents suggestions for how to respond. The study found that productivity rose by 14% with the use of this technology.

It's interesting to note that the greatest productivity impact was on newer and lower-skilled workers. Why? The study suggests that AI can help spread the knowledge of more experienced, productive workers. Imagine how productive a company could be if every employee performed at the level of its best employee!

If such dynamics hold on a broad scale, the benefits could be vast. Goldman Sachs has forecast that AI could increase global output by 7%, or roughly $7 trillion, over a decade. That is more than the combined size of the economies of India and the United Kingdom.

While it is far from certain that such sizeable gains will be realized, it is probably safe to say that when it comes to maximizing efficiency, Adam Smith would be wary of stifling the artificial hand of AI.

Aside from the gains in productivity, AI could shake up the labour market in unprecedented ways. Recently, we have seen the loss of 'middle-skill' jobs due to automation, resulting in large clusters of high-paying and low-paying jobs at either pole of labour markets. The literature shows that AI could affect occupations and industries differently than previous waves of automation.

Recent empirical studies suggest AI could reduce job-market polarization, by putting downward pressure on wages of high-paying jobs. Some studies suggest that AI adoption could flatten the hierarchical structures of firms,

increasing the number of workers in junior positions and decreasing the number in middle management and senior roles.

The number of jobs affected could be sweeping—some researchers estimate that two-thirds of US occupations could be vulnerable to some form of automation.

So, what will be the net impact on the job market? It is by no means guaranteed that AI will benefit humans, or that the gains of the winners will be sufficient to compensate the losers. It's quite possible that AI might simply replace human jobs without creating new, more productive work for humans to move into, as the economist Daron Acemoglu has noted.

Thus, despite AI's potential, we need to consider the broad negative effect it could have on employment—and the social upheaval that could cause. Given that the wellbeing of the individual and the plight of the common worker underpinned much of Adam Smith's thinking, this would surely have troubled him.

He was interested in developing an economy that worked for everyone—not simply a chosen few. Throughout *The Wealth of Nations*, he criticized the mercantilist trade system under which England sought to expand its exports at all costs, with too much market power being concentrated in the hands of companies granted trading monopolies.

Today, the market for the components to develop AI tools is highly concentrated. A single company has a dominant position in the market for silicon chips best suited for AI applications, for example. Many AI models require massive computing power and huge amounts of data—the lifeblood through which these models hone their 'intelligence'.

To be sure, open-source programmers have shown an impressive ability to design their own AIs. But only a handful of large corporations may have the computing and data firepower to develop high-end models in the future.

While Smith would have been impressed by the emergence of such a powerful technology in a globalized economy, he might also have realized that the invisible hand alone may not be enough to ensure broad benefits to society. In fact, in many areas—from finance to manufacturing— the invisible hand hasn't been enough to ensure broad benefits for quite some time.

New approach to regulation

Which brings me to a point I'd like to emphasize—we urgently need sound, smart regulations that ensure AI is harnessed for the benefit of society. One of the challenges is the extent to which humans may come to depend on the judgment of AI systems.

They rely on existing data, and hence may replicate the embedded bias in that data. Some models have shown a tendency to confidently defend false information—a phenomenon known as AI 'hallucination'. If we cede control to AI in areas such as medicine and critical infrastructure, the risks could be severe and even existential.

When it comes to AI, we need more than new rules: we need to recognize that this might be an entirely new game. And that will require an entirely new approach to public policy.

New legislation proposed by the EU is an encouraging start. The EU's Artificial Intelligence Act classifies AI by risk levels. The highest-risk systems would be banned. This would include government systems that rank people based on social compliance, known as 'social scoring'. The next-highest risk level would be tightly regulated, with requirements for transparency and human oversight.

Beyond regulating AI systems directly, we must be prepared to address the broader effects of AI on our economies and societies. Given the threat of widespread job losses, it is critical for governments to develop nimble social safety nets to help those whose jobs are displaced, and to reinvigorate labour market policies to help workers remain in the labour market. Taxation policies should also be carefully assessed to ensure tax systems don't favour indiscriminate substitution of labour.

Making the right adjustments to the education system will be crucial. We need to prepare the next generation of workers to operate these new technologies and provide current employees with ongoing training opportunities.

Demand for STEM specialists will likely grow. However, the value of a liberal arts education—which teaches students to think about 'big questions' facing humanity and do so by drawing on many disciplines—may also increase.

Clearly, we need international coordination on regulation, because AI operates across borders. It is therefore encouraging to see that the G7 has formed a working group to study AI. In the end, we'll need a truly global set of rules. Considering how fast the technology is moving, time is of the essence.

Redefining human

All that said, to truly consider the implications of AI from Adam Smith's perspective, we need to go back to his first major work, *The Theory of Moral Sentiments*.

Smith explored what enables us to behave morally. In his view, it's our ability to experience 'sympathy': we can imagine each other's joy and pain, and as a result, we temper our 'passions' and learn to be civil toward others. It's what allows us to build and sustain a rules-based society.

But what happens when you add artificial intelligence into the mix? Of course, AI has been part of our lives for years—it completes our sentences when we're typing on our phones and recommends what video we should watch next.

What's remarkable about the latest wave of generative AI technology is its ability to comb vast amounts of knowledge and distil it into a convincing set of messages. AI doesn't just think and learn fast—it now speaks like us, too.

It's unclear whether AI will evolve to the point where it could be called truly sentient. But if it can already replicate human speech, it may be difficult to know the difference. The glue that binds the concept of society conceived by Smith—sympathetic human beings interacting in the spirit of compromise—begins to disintegrate.

This has deeply disturbed scholars such as Yuval Harari. Through its mastery of language, Harari argues, AI could form close relationships with people, using 'fake intimacy' to influence our opinions and worldviews.

That has the potential to destabilize societies. It may even undermine our basic understanding of human civilization, given that our cultural norms, from religion to nationhood, are based on accepted social narratives.

It's telling that even the pioneers of AI technology are wary of the existential risks it poses. Just last week, more than 350 AI industry leaders signed a statement calling for global priority to be placed on mitigating the risk of 'extinction' from AI. In doing so, they put the risk on par with pandemics and nuclear wars.

So much of Adam Smith's work is based on the idea of information being effectively transmitted through society. Markets send signals through prices to producers and consumers. Human beings pick up emotional cues from each

other, enabling them to civilize their behaviour. But AI can significantly damage the integrity of that information and the fundamental benefits that it confers to society.

Smith would no doubt be troubled by the possibility of 'hallucinating' software spreading fake news and deepening divides in society. Thus, there's a good chance he would have supported rules that protect consumer privacy, and limit misinformation in the age of AI.

Conclusion

I'd like to stress that this debate is ongoing, and I don't claim to have all the answers. I've pointed out a few of the issues surrounding AI, and how we can use Adam Smith's thinking and philosophy as a guide to help us navigate the path ahead.

AI could be as disruptive as the Industrial Revolution was in Adam Smith's time. We will need to carefully balance support for innovation with regulatory oversight.

Because of AI's unique ability to mimic human thinking, we will need to develop a unique set of rules and policies to make sure it benefits society. And those rules will need to be global. The advent of AI shows that multilateral cooperation is more important than ever.

It's a challenge that will require us to break out of our own echo chambers and consider the broad interest of humanity. Adam Smith is best remembered for his contribution to economics, but his body of knowledge was much broader. He was a student of the law, history, rhetoric, languages, and mathematics. In the same spirit, harnessing AI for the good of humanity will require an interdisciplinary approach.

Writing on the cusp of the Industrial Revolution, Smith could hardly have foreseen the world we live in today, some 300 years after his birth. Now, we may once again be on the brink of technological transformations we can't foresee.

For better or worse, humans aren't known for walking away from the next stage of scientific and technological progress. Usually, we simply muddle through. This time, as we confront the power and perils of the artificial hand, we need to summon every ounce of our empathy and ingenuity—the very things that make human intelligence so special. ■

Gita Gopinath is First Deputy Managing Director at the IMF

This article is based on a speech to commemorate 300th anniversary of Adam Smith's birth, University of Glasgow, June 5, 2023.

Project financing: challenges, trends and future opportunities

Flavia Micilotta examines the factors involved in project finance, and the growing influence of sustainability

The current global economic climate is leading to in an increase in opportunities for project finance in general terms. In order to capture those opportunities at best, development finance players need to take into account a series of different parameters that have impacted, and will continue to impact, their structure and their ability to have a meaningful role.

We will debate the extent to which elements around the pure structure of projects and their set-up can influence the results, as well as the management of risk. Another issue we will touch upon is the extent to which sustainability represents an opportunity for development finance.

Indeed, sustainability today is a much needed and strategic tool that has a number of ramifications that are bound to bring a wealth of changes in project finance.

The type of participants and their involvement in project is an issue that sometimes is overlooked but its relevance is coming back in full force as the industry comes under scrutiny to become more efficient and less prone to unplanned risks.

There are quite a number of real challenges when opening up structures to different players and while forming more rounded syndicates for projects in global markets, particularly in those deals that are structured without any development finance institution (DFI) partners.

The absence of development banks can for instance create questions about the embedded political risk of projects that aren't backed by the development banks that are traditionally seen as important in validating projects in various jurisdictions.

Partnerships with governments, DFIs and other multilateral organisations are gaining heightened importance, but the most vital partnership to be forged is with private capital: commercial banks, institutional investors and even private equity.

Sustainability today is a much needed and strategic tool that has a number of ramifications that are bound to bring a wealth of changes in project finance

Institutional investors are emerging as a particularly liquid source of capital for infrastructure projects. Investment provided from insurance groups, pension funds, and asset manager funds is often naturally aligned with the long-term investments that are deployed to cover the operational phase in project financing (typically tenors of between seven and 25 years, depending on the deal structure and industry).

This leaves commercial banks to cover the financing of the development and construction phases, which is not only much shorter (one-to-three years) but also implies more risk.

While some generalities can be drawn between different types of investors and their risk sensitivities, there is not a single, simple partnership model that can be followed as a default option. Each project needs to be tailored and able to meet the specific available pools of liquidity and expertise, particularly when structuring both debt and equity portions within individual deals.

Several of the larger private equity managers have also taken up the infrastructure mandate, providing a vehicle for institutional investors to invest in without having to manage or oversee the products directly.

The private sector and institutional investors are increasingly looking to diversify their exposure to long-term finance. But the issues around long-term risks often need the involvement of multilateral development banks to provide the guarantees that allow project risks to be viably priced (as well as often co-financing with their own capital) creating an acceptable risk/reward profile for private investors to enter the deal.

This also has practical implications for those facilitating project financing. Greater plurality in syndication creates complexities in aligning the economic and risk control requirements of all players – particularly when incorporating domestic and international players.

Understanding the legal framework (trust-based or otherwise, or specific financial contracts such as Islamic structures) is also a critical aspect to safeguard that deal risk can be successfully passed to the private sector.

The last social and developmental crises have certainly created ample pools of opportunities for the international community, especially in the less developed parts of the world, where demand and needs for better infrastructure systems to support groups in need of basic services have continued to increase.

This need was also steered by an overpowering drive from the private sector to be recognized as catalyst for positive change in development economies and therefore emphasised their willingness to be involved in several relevant projects. This growing pipeline – daunting enough in scale – presents a further challenge by needing to meet sustainable construction requirements.

As a result, the most striking common denominator in the investment panorama ended up being a complex set of challenges requiring greater emphasis on partnerships able of delivering a pipeline of projects that are highly needed in less developed and emerging markets and that are also able to meet a number of characteristics.

Furthermore, heightened fiscal constraints started having a material impact on development banks' abilities to simply underwrite the majority of a country's project finance needs. The consolidated public sector primary deficit is expected to worsen in 2023 and the debt-to-GDP is close to 80%.

The pandemic has greatly increased the requirements of the projects, and have become particularly challenging to those thinning aid budgets. DFIs are increasingly also faced with the challenge of not igniting an uneven and divergent type recovery, leaving some countries behind.

At the same time they will need to meet the extra sustainability/green requirements which are today an omnipresent requirement for all types of financial market participants. In short, they will need to demonstrate their ability to support a recovery which is 'low carbon, climate resilient, inclusive and just'; as well as make investment to strengthen healthcare supply chains capable to withstand future crises and pandemics.

A worthwhile example of this practice happened already in February this year, when DBSA raised €200 million through a private placement with French development finance institution, the Agence Française de Développement (ADA).

The transaction, structured as a green bond, finances projects that contribute to climate mitigation and/or adaptation, and that are aligned to South Africa's 'National Development Plan' objective of an 'environmentally sustainable and equitable transition to a low carbon economy', as stressed in the *Country Climate and Development Report* (CCDR) published in 2022.

This report highlights South Africa's willingness to develop policies and investments to achieve a 'triple transition' that is low-carbon, climate-resilient and just'. This trifold vision depicts the high-level of ambition as the country embarks on this journey.

Meanwhile, in developed markets – such as the continental EU – supranational banks (eg. EBRD and EIB) continue to be selectively active in pursuing project financing. In contrast to the challenge in Latin America and Africa – funding enough capital to green-light a swathe of attractive developmental projects – the Europeans' challenge is a lack of attractive investment opportunities in EM within its region.

The search for diversification and yield has led several institutional investors focusing to make allocations to infrastructure. While this trend has continued it has supported governments' efforts to mobilise institutional capital for sustainable and resilient infrastructure investment, in order to address the need to renew or build infrastructure, especially in emerging markets most in need of such projects.

The attractive positives that can originate from infrastructure investments need to be carefully balanced out particularly with a certain kind of risks, which, if not carefully managed and mitigated, may ultimately impact the performance of an asset and the rate of return for investors.

These are sustainability, also referred to ESG - risks, particularly focused on Environmental, Social and Governance criteria, that today are inherent in most investment analysis and that have crucial interdependencies and impacts on results.

Sustainability is clearly able to give rise to new opportunities as we witness increased rapid growth in demand and supply of sustainable finance solutions. There are, nonetheless, significant type barriers to effectively channel capital to sectors within countries that need it the most.

For instance, in 2021, only about 21% of green bond issuance originated from emerging markets, with Least Developed Countries (LDCs) being largely left behind. Moreover, the majority of the investment interest has been focused primarily on mitigation-related financial risks which can overlook the need for climate resilient aligned finance needed to adapt to and manage the physical risks from climate change.

Sustainability means also addressing needs that go beyond climate change. There is increasing attention towards other urgent environmental crises and their links to finance, including primarily the global loss of biodiversity and ecosystem services.

The rate of species extinction is accelerating; an IPBES report finds that around 1 million animal and plant species are now threatened with extinction, which represents a significant economic loss. The OECD estimates that ecosystem services provided by natural capital assets offer expected benefits between US$125-140 trillion per year.

These considerations and relative benefits need to become part of valuations within financial markets. There are already some notable examples being spearheaded by Central Banks both in Europe and other continents (the Netherlands, France, Mexico, Brazil, and Malaysia), which are leading the way by undertaking initial assessments on biodiversity-related financial risk.

Infrastructure investments that cover structural systems like healthcare, water transport, and energy have in themselves already a strong ESG component because the investments they underpin have strategic bearing on livelihoods and essential economic rights.

Apart from having an inherent ESG potential, such investments are also quite prone to ESG risks such as extreme weather and climate related events, disruptions due to poor maintenance and mismanagement, their potentially adverse impacts on local communities, etc.

These characteristics need to be carefully considered by investors such as pension funds or insurance players in order to be able to anticipate and preferably avoid those risks altogether.

ESG factors can present risks across the infrastructure lifecycle – from the pre-construction phase through to the operational phase – and present challenges for all the stakeholders involved, though particularly for investors. Important considerations are also to be made around those more indirect and 'ESG related' risks that impact the investment cycle and which pertain to regulatory, legal and reputational risks as well.

Several international standards and tools have been developed in order to integrate sustainability into infrastructure development and integrate ESG considerations in infrastructure investment analysis. These typically cover a broad spectrum ranging from sustainable to impact investment.

Among the most used ones we find: the Sustainable Development Goals (SDGs), the IFC Performance Standards, Sustainable Accounting Standards Board (SASB). The characteristics and specificities of the investment typically determine the framework selection. The SDG framework is of the highest relevance given the potential of the goals for sustainable development and their close correlation to infrastructure projects, which are linked-in to most goals.

In truth, aligning infrastructure projects to SDGs help unleash the sustainability potential of the investments while crafting valuable synergies across stakeholders which can originate stable and innovative private public partnerships.

Indirectly ESG also spells out another variable linked to transparency and accountability. In an update report published last month a debate has opened towards the need for Development Finance Institutions (DFIs) to increase the level of transparency on what and how they fund projects.

This could significantly improve the scale and attempts to crowd in private capital judging by the results presented in the latest update on concessional finance and the private sector involvement.

The report[1], involving the International Finance Corporation (IFC), African Development Bank (ADB), European Investment Bank (EIB) and the Association of European Development Finance Institutions, found that in 2021 DFIs financed long term projects with a total volume of US$13.4 billion supported by blended concessional finance. The

report shows that no significant level of increase of private sector finance was registered as part of concessional funds committed to DFIs projects.

Nevertheless, the report might not be giving a full picture of how much DFIs have mobilised from private third-party financing. It has been reported by external sources that the private mobilisation figures did not include any DFI own-account funds, or any public funds.

Because sponsor contributions are not collected as a separate item, it is not possible to determine what percent of the private mobilisation numbers are due to sponsor contribution and what percent are due to bank finance or other finance.

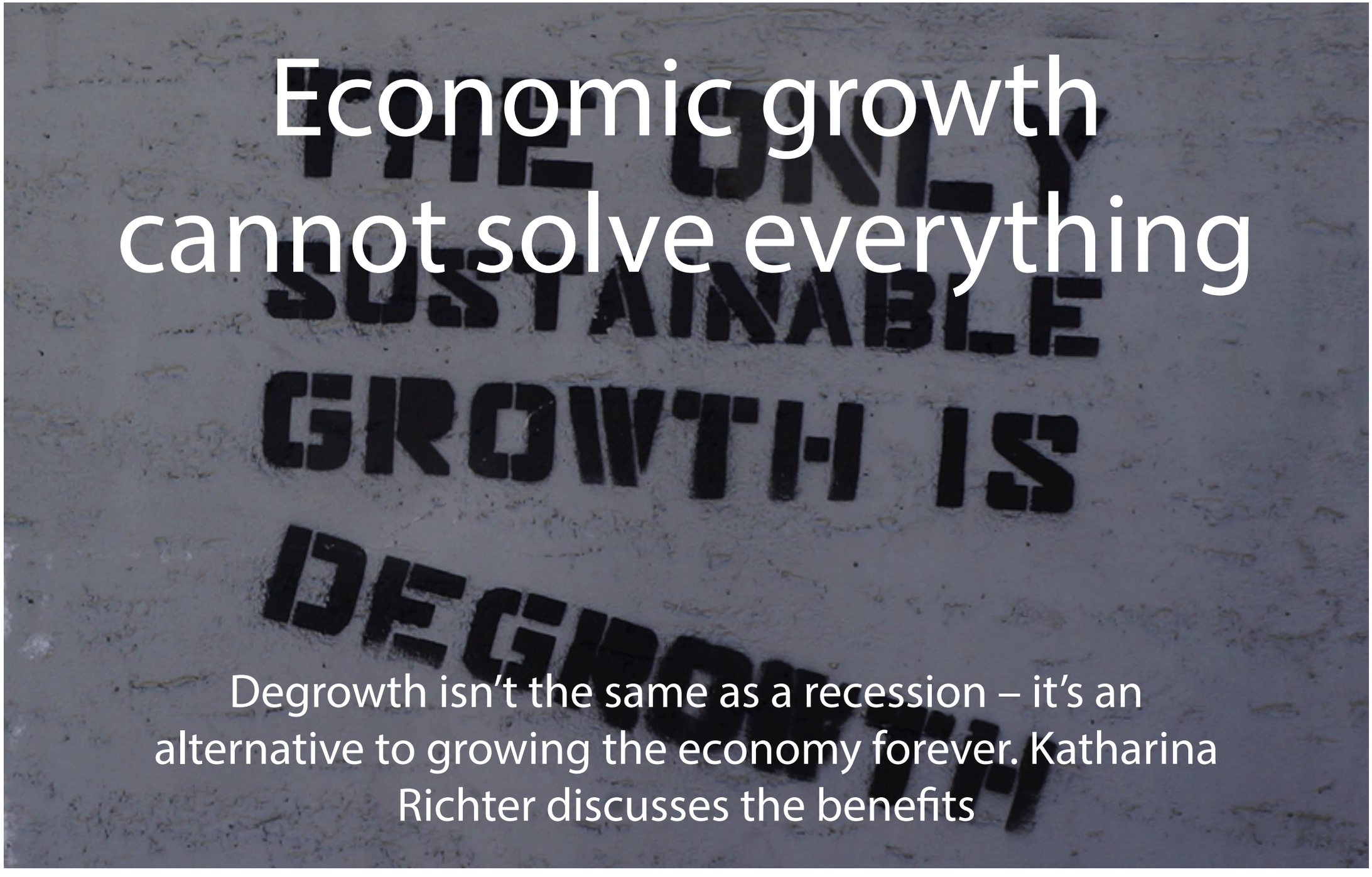
More transparency about the origins of the contributions and the dataset around the investments and what they can deliver could help significantly in terms of bringing blended finance to the fore as a major opportunity also for private investors (large pension funds) who might not be considering these possibilities today. ■

Flavia Micilotta is the Director of ESG Solutions at TMF Group

Endnote

1. DFI Working Group on Blended Concessional Finance for Private Sector Projects JOINT REPORT, MARCH 2023 UPDATE

Economic growth cannot solve everything



Degrowth isn't the same as a recession – it's an alternative to growing the economy forever. Katharina Richter discusses the benefits

The UK economy unexpectedly shrank by 0.3% in March, according to the Office of National Statistics. And though the country is likely to narrowly avoid an official recession in 2023, just as it did the previous year, the economy is projected to hit the worst growth rates since the Great Depression, and the worst in the G7.

For many people, this certainly feels like a recession, with food prices soaring and pay falling dramatically below inflation meaning many people are having to reduce their standard of living.

Against this backdrop, the main political parties are focused on delivering economic growth for a better future. One of Prime Minister Rishi Sunak's five priorities for 2023 is simply *"growing the economy"*, while opposition leader Keir Starmer has pledged to turn the UK into the fastest growing G7 economy.

Sunak and Starmer's priorities reflect conventional economic wisdom that *"growth, growth, growth"* increases incomes and standards of living, employment and business investment. When the economy doesn't grow, we see unemployment, hardship and inequality.

Growth cannot solve everything

However, economic growth on its own is not going to solve these multiple and intersecting crises, as it only counts the total value of goods and services produced without measuring qualitative change – whether this stuff makes you feel happy or secure.

In contrast, an increasing number of policymakers, thinkers and activists argue for abandoning our obsession with growth at all costs. Instead of pursuing GDP growth, they suggest orienting the economy towards social equality and wellbeing, environmental sustainability and democratic decision making. The most far reaching of those proposals are made under the umbrella term of degrowth.

Degrowth is a set of ideas and a social movement that presents a comprehensive solution to these issues. The pandemic demonstrated that a new normal can be achieved at pace, as we saw sweeping changes to how many of us lived, worked, and travelled.

At the time, headlines equated the pandemic-related GDP squeeze with the perceived 'misery of degrowth'. With persistently high inflation rates and the cost of living still spiralling, these debates are going to resurface.

Degrowth envisions a society in which wellbeing does not depend on economic growth and the environmental and social consequences of its pursuit […] proposes an equitable, voluntary reduction of overconsumption in affluent economies

Degrowth is not the same as shrinking GDP

To begin with, degrowth is not the same as negative GDP growth. Instead, degrowth envisions a society in which wellbeing does not depend on economic growth and the environmental and social consequences of its pursuit. Degrowth proposes an equitable, voluntary reduction of overconsumption in affluent economies.

Equally important is to shift the economy away from the ecologically and socially harmful idea that producing more stuff is always good. Instead, economic activity could focus on promoting care, cooperation and autonomy, which would also increase wellbeing and give people a bigger say in how their lives are run.

Yet, for many people the word smacks of misery and the type of frugality they are trying to escape from during the cost of living crisis.

But degrowth, if successfully achieved, would arguably feel better than a recession or a cost-of-living crisis. Here are three reasons why:

1. Degrowth is democratic

The first is the undemocratic and unplanned nature of a recession or cost-of-living crisis. Most citizens would agree, for example, that they had little to no control over the deregulation of the finance industry, and subsequent boom in sub-prime mortgage lending and derivatives trading that caused the 2008/09 financial crash.

Degrowth, on the other hand, is a profoundly democratic project. It emphasises direct democracy and deliberation, which means citizens can shape which economic sectors are decreased and by how much, and which ones will grow and by how much.

One example of such a democratic endeavour is the Climate Assembly UK, whose 108 members were selected through a civic lottery process and were broadly representative of the population. After listening to expert testimony, the assembly issued a number of recommendations to support the UK's net zero climate target. Over a third of all members prioritised support for sustainable growth. Economic growth itself was not among the top 25 priorities.

2. Degrowth would be egalitarian

Recessions, especially when coupled with fiscal austerity, tend to amplify existing inequalities by hitting the poorest members of society first, including women, working-class communities and ethnic minorities.

Degrowth drastically differs from a recession because it is a redistributive project. For instance, a universal basic income, an unconditional monthly state payment to all citizens, is a popular policy with degrowthers.

The degrowth vision is that basic income should guarantee a dignified living standard, remunerate unpaid care, and provide access to healthcare, food and accommodation for those in need. It could be financed by 'climate income' schemes that tax carbon and return revenues to the public.

3. Degrowth wouldn't hinder climate action

In an economy reliant on growth, a recession is generally bad news for the environment.

For instance, for the UK to hit its net zero targets, it must make annual public investments of between £4 billion and £6 billion by 2030. A recession would threaten public spending as well as the confidence investors have in low carbon developments in transport, housing or energy.

But such investments do not have to depend on growth but could instead be made through collective and democratic decisions to make climate action a priority. Carbon taxes will play a large part in this, as will stopping fossil fuel subsidies like the £3.75 billion tax break granted to develop the Rosebank oil and gas field in the sea north of Scotland.

To make sure we stay within the environmental limits within which we can safely operate, sometimes known as our planetary boundaries, degrowth suggests democratically establishing limits on resource use. For example, global greenhouse gas emissions or non-renewable energy use could be capped at a given level and decline annually.

Sharing these resource 'caps' among the population would ensure that while we stay within these safe environmental spaces, everyone has equitable access to the resources required to lead a fulfilling life. In contrast to the pursuit of endless growth, degrowth puts both climate action and human wellbeing at its heart. ■

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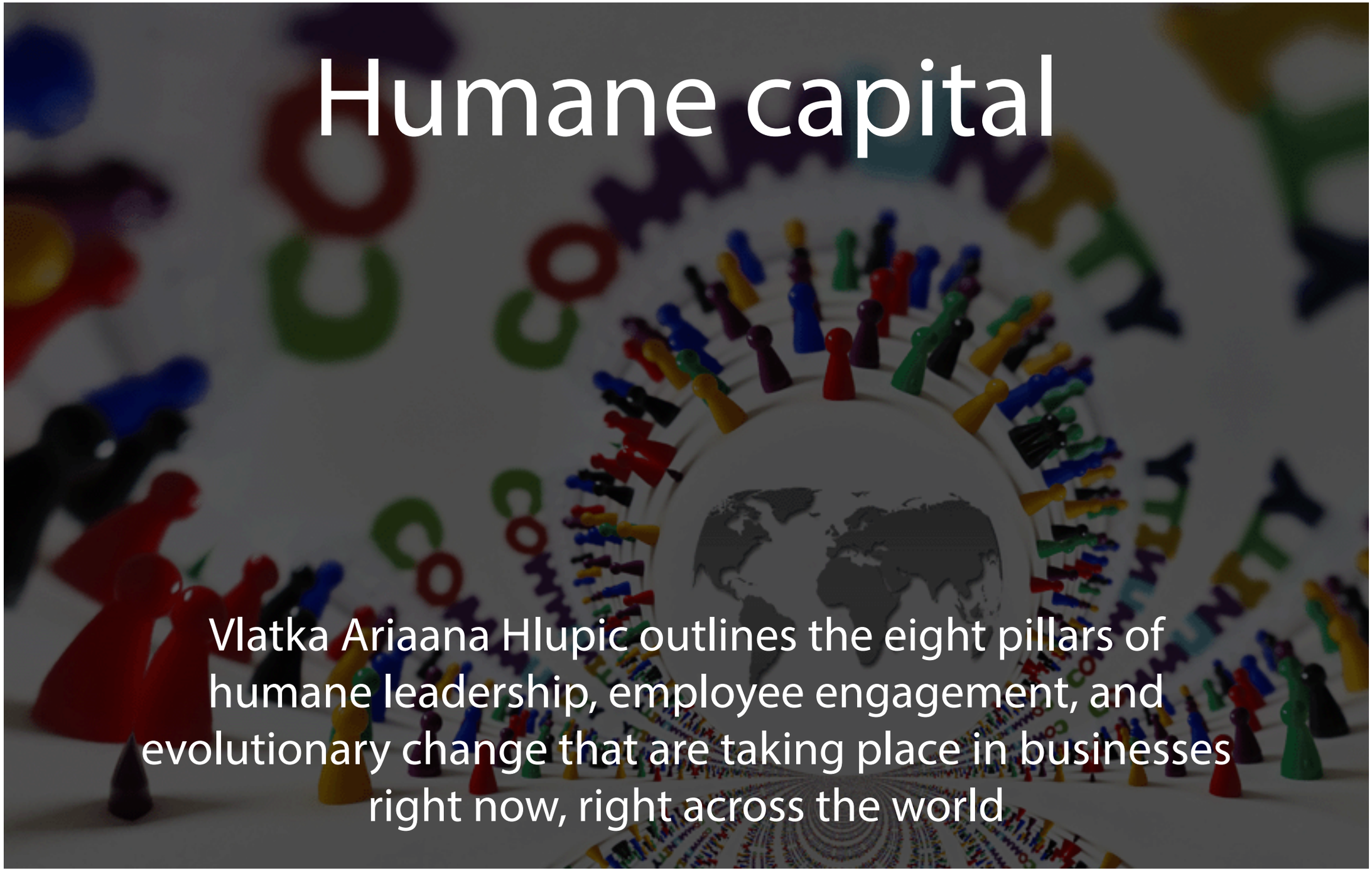
Humane capital



Vlatka Ariaana Hlupic outlines the eight pillars of humane leadership, employee engagement, and evolutionary change that are taking place in businesses right now, right across the world

The research captured amongst 58 CEOs and C-Suite interviewees from around the world focuses on organisations making the leap from a traditional 'command and control' mindset where employees are told what they should do, and the organisation survives, to an 'enthusiastic' mindset where there is a strong teamwork ethos, where collaboration, integrity, purpose, transparency, accountability and a caring culture are embedded into the organisation so that it can thrive.

Research has shown that only 20% of people globally are engaged at work. This means that 80% are not fully engaged, and companies are missing out on higher employee performance, profitability, reduced staff turnover and better customer service.

On the other hand, companies that create an environment in which employees thrive, enjoy being more innovative and creative. If a company's employees are engaged, they will work much harder to achieve their targets. In the long-term, this is a key differentiator for their success in the 21st-century workplace.

The research shows that a shift from the 'command and control' to the 'enthusiastic' mindset is not easy to accomplish and that it has to come from the top. The CEO is in pole position to make this happen, but needs to be supported by everyone around them, especially the board. Line managers can create internal barriers and resistance which need to be overcome if culture change is to stick.

Humane leadership teaches us to lead people with compassion, empathy, and dignity, and equally importantly to honour their interdependence. This not only helps them to feel more fulfilled but also more energised, motivated and resilient.

The eight pillars of humane leadership are most effectively led through visionary leadership and the creation of a strong sense of purpose, meaning, community and belonging.

Another important finding was that a caring culture was most often mentioned as being a key element, which permeates throughout every aspect of an organisation – from its supply chain ethos, to working conditions for employees and how customers are treated.

Humane leadership teaches us to lead people with compassion, empathy, and dignity, and equally importantly to honour their interdependence

The eight pillars of humane leadership

The 8 Pillars of Humane Leadership that could lead to better engagement and evolutionary change include:

1. Mindset of leaders and employees
2. Motivation
3. Higher purpose
4. Values and their alignment
5. Aligning of people and systems
6. Self-organisation of employees in communities
7. Caring ethos
8. Organisational learning processes

The following sections describe these pillars.

Mindset of leaders and employees

Leaders and employees may have different mindsets that are related to The Management Shift 5-Level Model (also known as the Emergent Leadership Model), which is based on five levels of mindset and organisational culture.

Each level is characterised by distinct attitudes, beliefs, behaviours, emotions, language, leadership behaviour and organisational outcomes. Levels 1, 2, and 3 are distinguished by 'command and control' and autocratic leadership.

A fundamental change happens when individuals and an organisation shift their mindset and culture from Level 3 to Level 4, where mindset is 'enthusiastic' and culture 'collaborative'. At that level, everything improves, from performance and engagement to innovation and profit.

Level 5 is set apart by 'limitless' mindset and 'unbounded' culture. This is where highly innovative teams work on solving large, global problems, driven by purpose and love for humanity. At this level, teams achieve that which was thought impossible to achieve before.

When individuals shift their mindset from one level to another, their attitude and enthusiasm can radiate out to other people. First, leaders need to understand what an enthusiastic high-performance culture looks and feels like. It is not just about positive thinking, but rather having a mindset that has energy and enthusiasm with focus on solutions instead of problems.

Motivation

We all have a certain level of motivation and mindset that we operate from. Employees who are rooted at Level 4 will drive themselves to achieve at whatever they do, while those employees that are anchored at lower levels, are not as driven or passionate about their work, they lack focus and determination.

The *Harvard Business Review* published an article on this topic stating how important it is for companies' employees and managers to maintain high spirits by having positive thoughts throughout the day; studies show these positive emotions lead directly towards improved performance levels both professionally and privately.

Higher purpose

The best businesses are those that make employees feel as if they are part of a larger purpose. When people love what their job entails and enjoy the company, it is easier for them to invest high levels of effort to produce great results because these individuals know how important their contributions really are; not just on paper but also internally with other dependant co-workers, and together contributing to a wider society. Transparency is key when trying to get everyone involved.

Values and their alignment

Research shows that one of the key components to creating a high-performing, enthusiastic work culture is when employees align themselves with company values.

The more personal beliefs match up with your business' mission statement or vision for success—the happier and thus more productive employees will be as well. By making this connection between what we do at our jobs every day (in essence living out these principles) versus just doing tasks, people can get excited about helping build something great together: a team spirit leads inevitably to greater levels of productivity among all parties involved. Aligning what people do in their personal life with what they do at work is one key to unlocking human potential.

Aligning of people and systems

Humanising an organisation starts with aligning people and systems that support their jobs. This is a crucial component in making firms more people-centred places to work and less like factories or stores.

In many industries today, the conventional office has been replaced by hybrid teams made up of individuals who come together on projects; managers will need better communication skills because they can no longer rely solely upon 'command and control' techniques for motivation. To get the most out of technology, you must first get the most out of people.

Self-organisation of employees in communities

The best employees collaborate and assist each other when they are permitted to self-organise. This is because the freedom in an open environment helps individuals to try out new ways of functioning that are not bound by organisational structure.

For example, workers who may experiment with office spaces without fixed desks or hierarchies; this also gives them room for creativity which can lead to further ideas and innovation.

Caring ethos

Caring firms show their care for personnel by implementing methods and behaviours to demonstrate support and appreciation. This leaves employees in the company feeling valued as individuals and not just a means towards an end, and this contributes towards a high-performance culture where people go above and beyond for customers and their organisation.

In a statement by Jules Goddard cited in *Humane Capital*, there are three compelling reasons why UK businesses should make the shift, or if they have already made the shift to then reinforce it and push even harder to get to Level 4/5. The three reasons are: commercial, societal, and moral.

Organisational learning processes

The importance of learning and development plans cannot be overstated, as this can lead to better motivation and engagement. This will motivate staff members to stay loyal and provide a framework for advancement, which ultimately benefits the employer, because turnover rates decrease significantly when people feel there is opportunity to succeed within an organisation.

Embedding organisational learning within organisational processes will help creation and dissemination of knowledge, it will support learning and motivate employees to remain in such an environment.

In summary

In times like these, it is critical for businesses to adopt the 8 Pillars of Humane Leadership in order to achieve a permanent culture change, not only to survive but also to achieve evolutionary change for long-term prosperity.

When organisations make the leap from a traditional 'command and control' mindset where employees are told what they should do and the organisation survives, to an 'enthusiastic' mindset with a strong teamwork ethos, the organisation will thrive.

People truly have the power to make a difference. Create the right job, assign the right people, and then empower them to make the right decisions, to learn and to collaborate. By utilising people power, organisations can save expenses while also developing their business into a 21st-century powerhouse. ■

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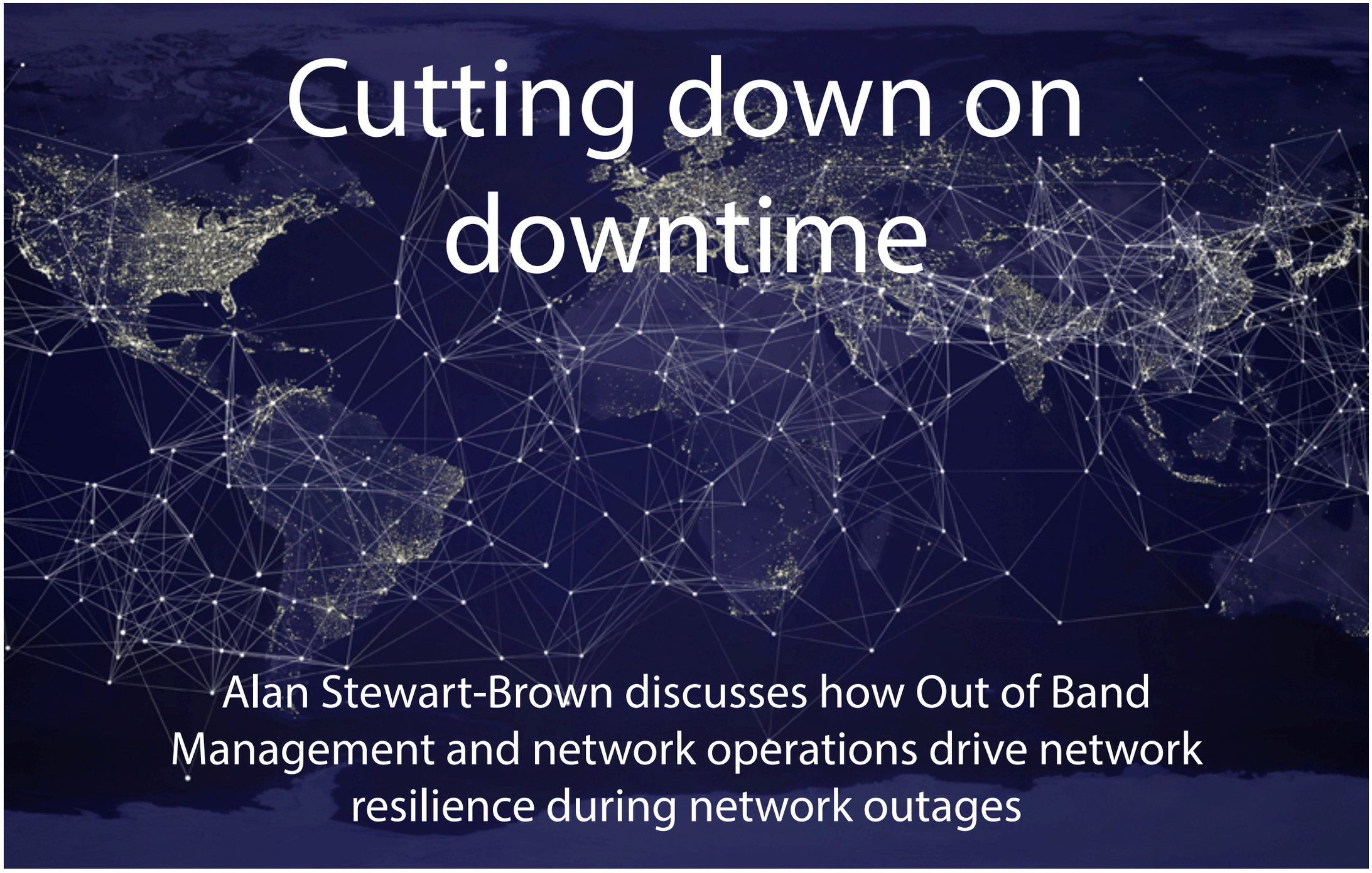


Cutting down on downtime

Alan Stewart-Brown discusses how Out of Band Management and network operations drive network resilience during network outages

Back on April 4th, Virgin Media confirmed widespread internet outages, with users across the UK disconnected, and the company's own website out of action for a time. This is likely to have caused great disruption for many companies trying to get on top of work priorities in the lead up the long Easter weekend, while not only potentially damaging Virgin's reputation but also their business customers,' as well as resulting in significant financial loss. But the Virgin Media outage is far from an isolated case.

A 2022 survey by network resilience company, Opengear, showed the proportion of outages costing over $100,000 has soared in recent times. Over 60% of failures result in at least $100,000 in total losses, according to the report, up from 39% in 2019. The share of outages costing upwards of $1 million increased from 11% to 15% over that same period.

The results of the study underline just how far-reaching the downtime challenge is. In the survey, which polled the views of 500 network engineers and 500 CIOs, separately, 50% of CIOs ranked financial loss among the main impacts on their business due to network outages over the past two years. But the monetary impact is far from the only cost to businesses.

CIOs also referenced customer satisfaction (47%); data loss (45%), loss of reputation (41%); loss of business opportunities/market competitiveness (35%) and SLA pay- outs (24%). Network engineers in contrast, ranked customer satisfaction as the biggest impact (51%) with financial loss second on 29% and data loss third (28%).

These topline survey findings didn't take into account the less widely-measured but nevertheless undeniable fact that outages can also have a significant impact on every organisation's most valuable asset – their staff. The stress of coping with an outage and its aftermath can be all-but unbearable for service staff having to deal with unhappy

or angry customers. More specifically, downtime can really take its toll on engineers facing long journeys to investigate outages, followed by a battle against time to get systems up and running again.

Outages themselves can often be difficult to avoid. After all, they have a wide range of root causes. Cable interconnects, power supplies, switches, dense compute chassis, storage arrays, and even air conditioning are potential sources of problems. And network devices are only increasing in complexity, with software stacks that are frequently updated and susceptible to bugs, exploits, and cyber-attacks.

With outages still on the up both in terms of prevalence and the average pecuniary loss incurred, organisations need to ensure that their networks are resilient

As software stacks have to be updated more often, they become more vulnerable to bugs and cyber-attacks. On the one hand, there is a risk of external attacks by cyber-criminals intent on exploiting weaknesses in the corporate network, or external bots constantly looking for vulnerabilities that enable them to penetrate corporate networks.

On the other, there is a growing threat from business employees themselves. The causes are just as diverse as the risks - from disgruntled employees who deliberately open the doors to cyber-criminals to good-faith users who are victims of phishing attacks.

Added to all this, the ongoing expansion of networks to encompass edge computing has led to increased compute being pushed to the edge and more complex equipment being put in place in remote locations, where there are no IT staff, and where redundancy is not feasible. In such scenarios, it is no longer sufficient simply to design a robust data centre.

Finally, one of the most common cause of outages is the vulnerability of the primary network's last mile. While ISP connectivity has improved over the past few years, one weakness these services can't overcome is the last mile problem.

What this refers to is the final segment of the production network that connects a company network to its ISP. This is the weakest link in a business's connectivity. All of the network traffic for a single office, store, branch, or distribution centre is funnelled through single links.

The bandwidth of these links effectively limits the amount of data that can be transmitted to your ISP. This bottleneck leaves you exposed to DDoS attacks and basic human error leading to outages. And this last mile can

fall victim to physical failure. An accidental fibre cut can knock out an entire network and leave the company disconnected from its internet services for significant periods of time.

Needs to be a raised priority

In the Opengear survey, more than a third (36%) of network engineers said 'higher levels of downtime' were among the biggest risks to organisations from not putting networks at the heart of their digital transformation. Moreover, 37% of engineers ranked 'avoiding downtime' among their organisation's biggest networking challenges post digital transformation.

It was second only to security in the list. 35% of CIOs concurred, although among this group five other challenges including skills shortages, network agility and performance are higher ranked. The low position given to avoiding downtime in the priority list among CIOs is a concern given the shortcomings of many approaches to addressing outages after they have occurred.

It is clear that for businesses generally network outages and the resulting downtime remain a serious issue for many businesses operating today. Yet, the approaches taken by organisations to rectify these problems are often full of shortcomings. Too many businesses still rely on manual ways of working, sending engineers out to site and relying on manual methods of documentation.

So, what's the way forward? Preparation is key. It is vital that when disruption occurs, companies have an IT business continuity plan that enables them to recover quickly. They need to ensure their network is resilient. Every CIO needs to know without question that when trouble strikes for whatever reason, – whether it's a hurricane or a cyber-attack, a local power outage or a global pandemic, their network will be ready to deal with it.

One priority must be ensuring businesses have visibility and the agility to pivot as problems occur. Many are not proactively notified if something goes offline. Even when they are aware, it may be difficult to understand which piece of equipment at which location has a problem.

To solve errors, an organisation might need to perform a quick system reboot remotely. If this does not work, there may be a problem with a software update or other significant issue. That's where Smart Out of Band Management using an alternative path into the network really comes into its own.

Relying on the main production network to access a corporate network in the event of a network outage is dangerous because when an issue occurs, an engineer may not have access to that production network. Having access to a separate, secure management plane, in the form of an Out of Band (OOB) management network, ensures remote access to remediate even during an outage, whether caused by a cyber-attack, a misconfiguration, or a network cable being cut in error, for example.

OOB gives organisations an alternate way to connect to their remote equipment such as routers, switches, and servers through the management plane, without directly accessing the device's production IP address in the data plane and independent of the primary ISP connection the company uses.

This Out of Band path is completely separate from the production network and allows administrators to securely monitor, access, and manage all devices without interfering with normal operations, and even more importantly, without having to allow data plane level access to the management plane.

Since the Out of Band network separates management and user traffic, businesses can lock down, restrict access, and fully secure the management plane. Also, they can configure, manage, and troubleshoot their devices even

when the data plane is down. An OOB solution offers organisations a secondary connection, often through 4G LTE, that lets network technicians solve problems from anywhere, and most importantly, saves the company time and money.

The crucial role of NetOps

While taking account of all the above considerations will be key in raising levels of resilience across business networks, bringing in more automation will also be critically important. Again, this often starts with an independent management plane, which has a vital role to play in automating common network operations (NetOps) processes.

One of the biggest benefits of NetOps is its versatility. It can be there on Day One, enabling the deployment process to be managed via a centralised management software and ensuring network equipment can effectively self-configure.

It is there for the standard day-to-day process of keeping the network running but it can also be to provide an alternative route to remediate the network when it has gone down. NetOps supports rapid resolution of network outages by speeding up the time to resolution.

In the past, if a particular event had happened on the network, most companies would expect an engineer to log in, run through five or six routines to work out what was happening and then remediate the problem. The role of NetOps is to automate that entire process so that when that event happens, the system automatically runs through those five or six steps. If that resolves the problem, fine. If not, the issue is escalated to the network engineer to manage the next level of troubleshooting.

All this simplifies the process. But it also removes human error because so many downtime incidents are simply caused by someone pushing a wrong configuration or typing in the wrong letters when they are sending commands. By using a NetOps approach to correctly program an automation routine, an organisation can effectively remove these challenges.

57% of CIOs in the most recent Opengear survey highlight a reduction in downtime among the benefits of network automation. Companies around the world recognise that the ability to operate independently from the production network and detect and remediate network issues automatically can dramatically improve security, save time and reduce costs. At a time when most businesses are focused on doing more with less, that's absolutely critical.

Why prevention is better than cure

It is worth highlighting that time is critical whenever downtime happens. When network outages occur, the damage is cumulative so businesses need to pre-plan and ensure that they are putting in place network resilience as a preventative rather than a reactive approach. Often today the issue is not fully considered upfront.

Organisations often defer discussions around network resilience based on the optimistic hope that a network outage never happens to them. In fact, network resilience should be built into the network from the outset. It should be a tick box exercise but typically it is not. Organisations generally either think that their network is somewhat resilient through the in-band path or they are not thinking about their branches or remote sites as much as they should.

Of course, anyone that has just suffered a network outage will understand the benefits of out of band (OOB), as a way of keeping their business running in what is effectively an emergency but as referenced above it is likely to be

much better to plan for resilience from the word go. After all, networks are the 'backbone' of most businesses today, and many will benefit from bringing network resilience into the heart of their approach from the outset.

With outages still on the up both in terms of prevalence and the average pecuniary loss incurred, organisations need to ensure that their networks are resilient. A combination of out of band, automation, and NetOps will enable them to do just that. ■

Alan Stewart-Brown is Vice President EMEA, at Opengear

Putting digital enquiries under the microscope

Jonathan Sharp argues that companies need to embrace modern technologies and ways of working such as AI, the use of social media, and hybrid working or they will almost certainly be left behind

Businesses are wasting a colossal amount of time and money answering basic email enquiries that could be handled by an AI chatbot providing customers with instant resolution and freeing up contact centre agents to focus on higher value and more complex enquiries that require speaking to a human agent.

Statistics show that the average office workers receive 121 emails per day, and this keeps on rising considerably. Last year emails averaged around 281 billion per day (DMR). Each email enquiry takes about 7 minutes to handle.

That's a lot of unnecessary money and time wasted. Britannic's customer Peabody has deflected 30% of emails with an AI from the contact centre who no longer had to spend valuable time on mundane tasks and saved 30-40 hours daily.

Gartner forecasts that one in 10 agent interactions will be automated by 2026, an increase from an estimated 1.6% of interactions today that are automated using AI so it's time to get ready to welcome an AI chatbot in your contact centre.

Customer experience

The benefits of using email for enquiries are everyone has email and it works across all platforms. However, often customers consider that the cons outweigh the benefits as email enquiries could result in a slow response, go unanswered as they are stacked in an in-box, get mislaid, or an agent hasn't got round to answering yet because they are also trying to deal with calls and complex issues.

This results in poor customer service and in today's world customers want resolution and information immediately. If you can't provide this, then customers will go elsewhere especially as customer loyalty is on the decline.

The TechSee survey revealed that 59% of survey participants said that negative experiences led to their decision to go elsewhere, and 21% did so after just one event that left a bad taste in their mouths.

Automation

An AI chatbot is just one way to solve the email conundrum. Another alternative is to embrace the email channel and conquer it with automation. Drive the emails that need human intervention to the contact centre or the relevant teams.

Statistics show that the average office workers receive 121 emails per day, and this keeps on rising considerably

Determine through conditions those that need further information and react accordingly, automatically. Handle those emails automatically that are routine and can benefit from automation based on content and sentiment. These technologies are now mature with many use cases from organisations like local government and housing associations to insurance and travel.

The fear of the unknown

Many companies and organisations are aware that they need to modernise their contact centre to offer multiple channels of communications including an AI chatbot but often feel overwhelmed when thinking about the project, so they park it.

Their fears include that a digital transformation project like an AI chatbot will be a large undertaking; it will too expensive and not within their budget. There also fear that they won't get approval because what they have already works – 'if it ain't broke, don't fix it' adage.

However, you don't need to rip out and replace existing contact centre solutions. Deploying an AI chatbot is a small project that can be broken down into small manageable projects. It is also cost-effective and doesn't take long to implement. The time is in the planning of the business processes and setting the conditions. This is the crucial element to determine whether the project will be successful or not.

Impact on the bottom line

If these fears are holding you back, maybe a good hard look at the impact on your profitability will be what it takes to start making this change. Your project can start small and grow, but rest assured, it will have an impact within the first month!

Digital enquiry management enabled Peabody to control their customer journey by deflecting over 25,000 emails from their contact centre, which improved their Trustpilot score, their agent experience bringing all of their communication (including social media) into one place.....all with an ROI of less than 8 months.

Changing your mindset

Companies that are stuck in the 'status quo' need to move forward and look at how they communicate with their customers and employees with a new lens. If they don't embrace modern technologies and ways of working such as AI, the use of social media, hybrid working etc they will almost certainly be left behind and lose out.

Under the microscope

To improve customer service companies need to go back to basics and examine their customers' and agents' journeys under the microscope, taking a detailed and scientific approach studying how their enquiries are managed and what the process is. It is advisable to work with a trusted solutions provider who can guide you through the process of digital transformation and change management.

It is vital to have a clear understanding of the customers' and agents journeys to identify what and where the touchpoints are. By conducting a thorough evaluation, you can identify pain points, areas for improvement, and opportunities to enhance the overall experience for both.

Empower your agents

Many companies think agents will not like working with chatbots and view automation as a threat to their jobs, but they are not, they simply augment their roles.

It is vital to provide training on how to work with these tools and go through the processes in the detail, so they are comfortable with them. Once the system is up and running agents realise how much better and easier their roles are and welcome the bots.

By implementing AI and workflow chatbot solutions that can handle simple enquiries it will allow agents to focus on high-value complex enquiries that require speaking to a human. Therefore, making their jobs more interesting, challenging and rewarding. Discovering new ways that the chatbot and human agents can work together to increase productivity, efficiencies and improve overall service.

Companies can then take this opportunity to invest more into the agents' training and development plan to ensure they are happy and retained.

Improving the customer experience

The customer experience will rapidly improve because enquiries can be dealt with instantly which will satisfy the customer and reduce previous frustrations of being passed from one department to another, repeating information, or put on hold for a long time.

Another benefit of chatbot is that they are available 24/7 so can be used outside working hours therefore saving you additionally on 'out of hours' contact centre services.

By integrating the AI chatbot with your in-house database, the chatbot and agents have visibility of the customer's details and history therefore helping you to deliver a better service, drive loyalty and growth.

Become the agent of change

Become the agent of change and introduce an AI chatbot to your team and reap the benefits of improving the customer and agent journey, increasing productivity and efficiencies, and driving revenue growth. ■

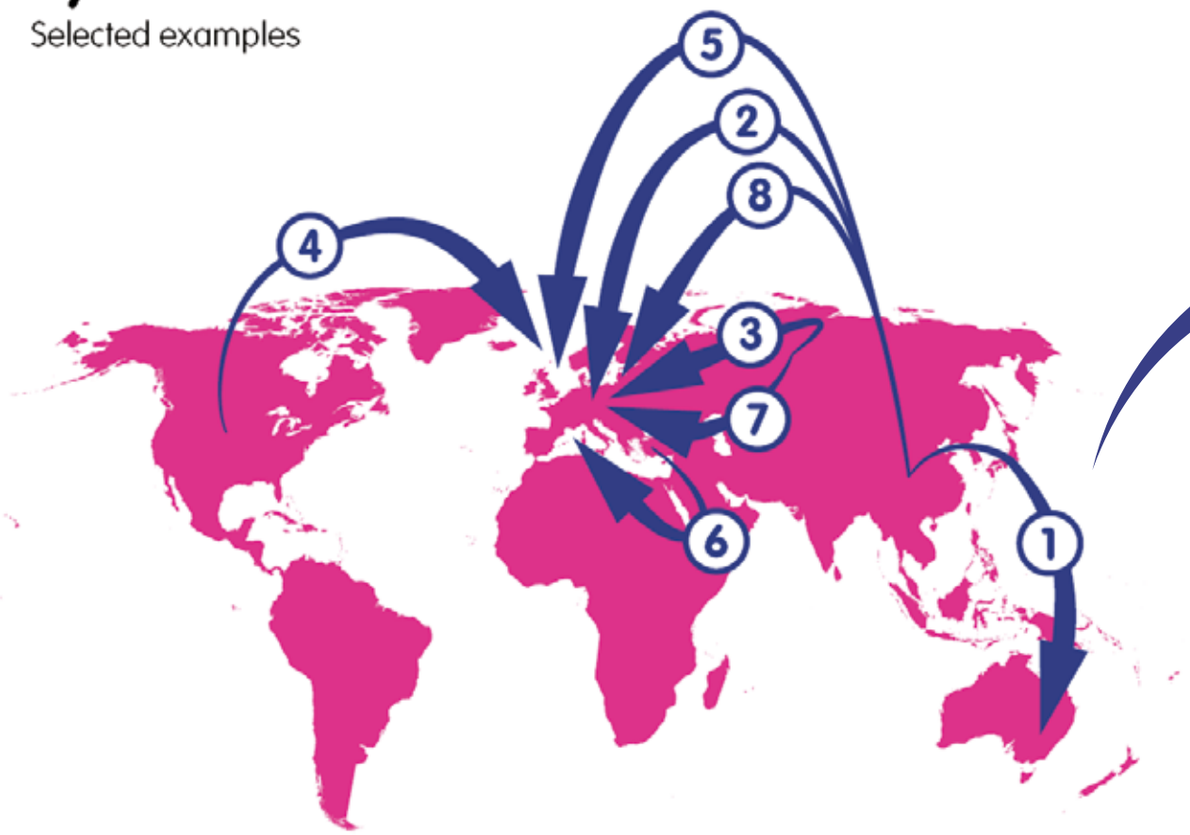
Jonathan Sharp is CEO of Britannic

EUROPEAN COUNCIL ON FOREIGN RELATIONS
ecfr.eu

The Power Atlas

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)

9

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

Check out ECFR's Power Atlas and navigate through the battlegrounds of a networked world: ecfr.eu/power-atlas