

# WORLD COMMERCE REVIEW

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**PAMELA MAR** DISCUSSES  
THE DIGITALISATION OF  
TRADE AND SUPPLY CHAIN  
PROCESSES

FINTECH HAS A MAJOR  
ROLE IN ENABLING GLOBAL  
TRADE. **GRAHAM BRIGHT**  
CONSIDERS THE KEY FACTORS

**BELA GALGÓCZI** EXAMINES  
THE DECARBONISING OF  
EUROPE'S AUTOMOTIVE  
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# Learning the lessons of history...

**W**hat makes our time different from others? Human beings do not change. But machines and the world around us do. In this new world of sudden technological and societal change, scientific opinions have entered a world of competitive apocalypticism. Too many spend their time telling us what to be terrified of rather than doing what real scientists do, which is to solve problems. We are moving from an Age of Enlightenment to the Dark Ages. Logic and rational thought are being supplanted by superstition and dogma.

Science requires open debate and does not advance through political pressure and consensus. We need more dialogue and less polarisation. Everything is black or white, right or wrong. There is no room for debate. Soon, there will be laws against disinformation, to ensure an Orwellian future.

History allows deep thought. Not always right, but it allows a considered and thoughtful examination of the past. Very little is new, we have been here before. The destruction of idols in Afghanistan happened in England over three hundred years ago. After staring into the entrails of a sacrificial animal, the Aztecs butchered thousands of prisoners. That was five hundred years ago. These were irrational occurrences from medieval cultures. Is this a future that the west is aiming for?

Modern thought and ideals seem to be governed by modelling. What are we supposed to make of this mathematical crystal-ball gazing, a fantasy of knowing the future founded on the cult of numbers? We should be dismissive of the role of computer models in recent events, whether of the economy (inflation will be transitory), the COVID pandemic (as deadly as the plague), and the promotion of climate change alarm (the hottest/coolest/wettest/driest... in recorded history).

Modern science is full of people who are almost completely non-quantitative and, as such, impractical and virtually useless as scientists. The destiny of the developed world should not rely on the say-so of interest groups. There are so many bogeymen - white supremacy, Putin, fossil fuels, carnivores, Islamaphobes, homophobes, transphobes, you get the idea - and there is no room for reason, for discussion, for debate. Any deviation from the mean is jumped on as an aberration and a sign of the impending end of the world.

Like the proponents of medieval cults, 'liberal' beliefs are driven by a righteous and intolerant zeal that leads them instinctively to seek to crush their critics and opponents, some of whom are just as religious in their zealotry and opposition. A new Orwellian world has been unleashed. Free speech means silence. Inclusivity means exclusivity. Supposedly peaceful, the aggression and intolerance in the behaviour of many of these movements is clear to see.

Whatever problems we face as a society, driving us into panic and anxiety will do nothing to solve any of them properly. Panicking is likely to lead us into a world of unintended consequences. We need a middle way – change can be stimulating and the agent behind exciting improvements to all our lives, and human beings are superb at dealing with change. And throughout history, and hopefully in the future, human beings will still be superb in dealing with change. ■

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# A time for resolve and realism

## Agustín Carstens is General Manager of the Bank for International Settlements

will focus on the current state of the global economy, the key risks to the outlook and the roles that all arms of policy must play to meet today's challenges if they are to lay a solid foundation for resilient future growth.

The need for resolute yet realistic policy is a key theme of the 93<sup>rd</sup> *BIS Annual Economic Report*. Resolve is needed because the global economy is at a critical juncture. For the first time in decades, inflation and financial instability have emerged in tandem. If not addressed promptly, these short-run challenges could entrench themselves as long-run problems.

Realism is needed because many of today's short-run challenges reflect an overly expansive view of what macroeconomic policy can achieve. As a result, the long-run challenges are being neglected, with effects that are being felt right now.

### High inflation prompts the end of 'low-for-long'

To set the stage, let me recap the main economic developments of the past year and the near-term outlook.

High inflation remained a dominant theme. Admittedly, inflation has come down from last year's multidecade highs. But these were largely the easy gains as commodity prices fell and supply bottlenecks eased. On core inflation, much less progress was made. And in much of the world, price growth in services – typically hard to budge – remains near its peak.

Central banks responded forcefully. The low-for-long era ended, as central banks embarked on the sharpest and most synchronised policy tightening since at least the 1970s. In doing so, they delivered collective monetary restraint that was more than the sum of its parts.

Yet economic activity remained, for the most part, resilient. Growth did slow, but less markedly than many had predicted. And, in many countries, labour market conditions were unexpectedly buoyant, with unemployment rates low by historical standards. This goes some way to explaining the persistence of core inflation.

Emerging market economies weathered the storm. In the past, global monetary policy tightening had tested them. This time, emerging market economies were ready. In many of them, central banks tightened policy earlier and faster than in

advanced economies. This bolstered their exchange rates and reinforced the credibility of their monetary policy frameworks in the face of high inflation.

Even as economies continued to grow, serious financial strains emerged. The first signs came from the United Kingdom, where sharply rising bond yields saw pension funds run into trouble.

Perhaps more serious and surprising has been the recent turmoil in the banking sector, with several regional banks in the United States closing their doors and a large European G-SIB merging with a competitor.

Once again, the authorities stepped in to limit the damage. Central banks activated or extended liquidity facilities. Governments guaranteed solvency, in some cases by broadening the scope of deposit insurance schemes. These measures calmed markets. But they raised many questions about banking regulation and supervision, as well as the size and scope of safety nets.

Despite these episodes, broader financial conditions tightened less than one might have expected. In part, this reflected a belief by some market participants – incorrect as it turned out – that central banks would blink in the face of higher inflation in order to ease financial strains.

Inflation and financial instability could prevent a soft landing. Against this backdrop, there is an emerging sense that the global economy could achieve a soft, or softish, landing. We all hope it does.

But we must be ready to tackle the significant risks that stand in the way. Among those risks, persistently high inflation and financial instability are the two that are most likely to trigger an extended period of sub-par growth, or even a recession.

High inflation could persist. In addition to the inflationary pressures already in the system, new ones could emerge. For the latter, labour markets look to be a key flashpoint. In many countries, workers' purchasing power has fallen substantially, as wage growth has failed to keep pace with inflation.

It is conceivable that workers will seek to reverse that, particularly as labour markets are so tight. Firms, having found



it easier to raise prices than before the pandemic, may in turn pass these higher costs on. A wage-price spiral could set in.

This story sounds disturbingly like the shift to a high-inflation regime that we analysed in our *Annual Economic Report* last year. As you may recall, in such a regime, inflation becomes a more salient factor in household and business decision-making, and transitions across regimes become self-reinforcing. Once an inflationary psychology sets in, it is hard to dislodge.

Meanwhile, financial stability risks loom large. Public and private debt levels, and asset prices, are much higher than in past global monetary policy tightening episodes. To date, pandemic-era excess savings and a general lengthening in debt maturities during the low-for-long era have masked the effects of higher rates. But these buffers are rapidly depleting. As they become exhausted, growth could slow more than currently expected.

The resulting financial strains will likely materialise in higher credit losses. Banks would be in the firing line. Historically, it is common for banking stress to emerge as monetary policy tightens. High debt, high asset prices and high inflation amplify the risks. The current episode ticks all the boxes.

Although banks' financial positions have improved since the Great Financial Crisis, pockets of vulnerability remain. Low price-to-book ratios suggest a worrying degree of investor scepticism about the long-term prospects of some institutions. And, as recent experience has shown, even small banks can trigger systemic collapses in confidence.

Non-bank financial intermediaries will also be challenged. This sector has grown in leaps and bounds since the Great Financial Crisis. It is also rife with hidden leverage and liquidity mismatches. Business models that worked in the low-for-long era will face stern tests in a higher-for-longer one.

Weak fiscal positions cloud the picture further. Financial instability, if acute enough, calls for a sovereign backstop. Its adverse effects on economic growth can also cripple fiscal revenues. This would heighten the pressure on already high public debt levels. In turn, doubts about the sovereign's creditworthiness can spark or intensify financial instability.

### **A shift in policy mindsets is required**

How should policymakers respond to these large and unique challenges?

For central banks, the task is clear. They need to restore price stability. A shift to a high-inflation regime would impose enormous costs. No one would benefit. Higher inflation won't boost real wages. It won't deliver growth. It won't bolster financial stability. And any gains from inflating away public debt would be small, risky, temporary and certainly not exploitable.

While central banks' goals are clear, the path is uncertain. The pandemic, in conjunction with broader structural changes, disrupted the usual relationship between interest rates,

*“Monetary policy must now restore price stability. Fiscal policy must consolidate. The opportunities of a future financial system must be grasped. And policymakers of all kinds need to keep their eye on the long term”*

growth and inflation. With models providing less reliable signposts, judgment is of the essence. Central banks may think that they have done enough, only to find that they need to tighten further. In the meantime, more financial stresses could emerge.

Prudential policies should be deployed more forcefully to buttress the financial system. This would also create more space for monetary policy to tackle inflation. Macroprudential policies should be kept tight, or even tightened further. Research suggests that this can limit the strains that higher interest rates place on the financial sector.

And microprudential supervision should be stiffened to remedy the deficiencies that came to light in recent bank failures. Implementation of existing regulations – including Basel III – should be accelerated. Where gaps exist, new regulatory measures may be required.

Fiscal policy must consolidate. Not only for a year or two, but systematically, so as to put unsustainable fiscal trajectories onto a more secure footing. This too would help in the fight against inflation. By limiting the required degree of monetary restraint, it would also bolster financial resilience. And it would provide badly needed buffers that could be deployed against future downturns.

Above all, policy needs to adopt a longer-term focus. High inflation and financial instability were no accident. They were the result of a long journey. Macroeconomic policy had approached the boundaries of what we refer to as the region of stability.

We discuss this concept in more depth in Chapter II. The region of stability refers to the combination of monetary and fiscal policy that delivers sustainable macroeconomic and financial stability. The region evolves and is hard to pin down in real time.

Its borders were particularly faint in the low-inflation era leading up to the pandemic. Our sophisticated and outside financial system has blurred them further. But recent experience leaves no doubt about where we stand.

Several policy implications flow from this analysis. Most directly, monetary and fiscal policies need to operate firmly within the region's boundaries. More fundamentally, a shift



in mindset is called for. Macroeconomic policy needs to be realistic about what it can achieve.

The journey to the region's boundary reflected in no small part an overly ambitious view of monetary policy's ability to hit narrow inflation goals and of a more general belief that macroeconomic policy could support growth indefinitely, without stoking inflation.

Moving forward, policy needs to be more realistic in its ambitions and more symmetrical over the business cycle. Buffers used in downturns must be rebuilt in recoveries. Unrealistic expectations that have emerged since the Great Financial Crisis and COVID-19 pandemic about the degree and persistence of monetary and fiscal support need to be corrected.

Greater attention should be paid to the prominence of financial factors in economic fluctuations, and in policy measures to limit the likelihood and severity of financial crises. As I have said on many previous occasions, governments need to reinvigorate structural reforms to drive long-term growth. There are no short cuts.

### **A vision for the future financial system**

The inflationary outbreak reinforced the imperative for central banks to preserve the public's trust in money. Price stability is

an essential part of this. Another is to provide a form of money that keeps pace with technology and the needs of society.

We have explored this theme in several recent *Annual Economic Reports*. In particular, we examined future forms of money, with a focus on the payments system.

In this year's report, we go a step further and lay out a blueprint for the future financial system. Our vision is of a system that enhances the parts of the system that work well today; and that will enable entirely new financial products tomorrow.

The core of the proposal resembles the arrangements we see today. We still envision a two-tier banking system, with central bank money used for wholesale transactions, and some retail ones, and commercial banks providing the bulk of the money used by households and businesses. Crucially, this arrangement ensures the singleness of money and finality of payments.

But in our vision, money takes a more advanced technological form. In addition to central bank reserves, banknotes and conventional bank deposits, there would be central bank digital currencies and digital commercial bank money.

These forms of money would allow for new capabilities, including programmability and composability.



The real benefits, however, would come from linking new monetary arrangements with the broader financial system. To this end, we propose a new financial infrastructure – a unified ledger. The ledger, which in practice would likely resemble a network of networks, would allow for seamless transactions between digital money and other tokenised assets on a single programmable platform.

As we discuss in the chapter, this could greatly increase the efficiency of existing financial transactions, deliver instantaneous payment settlement and unlock entirely new economic arrangements.

The vision we propose is ambitious. And it won't be assembled overnight. That is all the more reason for us to get moving. Society rightly expects the monetary and financial system to take full advantage of technological advances to deliver better and more efficient services.

If central banks don't take this agenda forward, other, less publicly minded players will fill this space.

### **Conclusion**

The global economy is at a critical juncture. Stern challenges must be addressed. But these carry with them significant opportunities: to put macroeconomic policy on a more secure footing; to reinvigorate long-term growth; and to craft a financial system that meets the needs of tomorrow.

Capturing these opportunities will take skill, nimbleness and a degree of courage. It will also require the right mindset. The time to obsessively pursue short-term growth is past. Monetary policy must now restore price stability.

Fiscal policy must consolidate. The opportunities of a future financial system must be grasped. And policymakers of all kinds need to keep their eye on the long term. ■

#### *Endnote*

1. <https://www.bis.org/publ/arpdf/ar2023e.htm>



# Policymaking in an age of shifts and breaks

**Christine Lagarde is President of the European Central Bank**

**O**ver the past three years, people around the world have experienced an unprecedented series of shocks, albeit to varying degrees. We have faced the pandemic, resulting in a partial shutdown of the global economy.

We are confronting a war in Europe and a new geopolitical landscape, leading to profound changes in energy markets and trade patterns. And climate change is accelerating, compelling us to do all we can to decarbonise the economy.

One visible impact of these shifts has been the return of high inflation globally, which has caused anguish for many people. Central banks have responded by tightening monetary policy and, while progress is being made, the fight against inflation is not yet won.

But these shifts could also have profound longer-term implications. There are plausible scenarios where we could see a fundamental change in the nature of global economic interactions.

In other words, we may be entering an age of shifts in economic relationships and breaks in established regularities. For policymakers with a stability mandate, this poses a significant challenge.

We rely on past regularities to understand the distribution of shocks we are likely to face, how they will transmit through the economy, and how policies can best respond to them. But if we are in a new age, past regularities may no longer be a good guide for how the economy works.

So, how can we continue to ensure stability?

The challenge we face was well-captured by the philosopher Søren Kierkegaard, who said that *"life can only be understood backwards; but it must be lived forwards."* Since our policies operate with lags, we cannot wait for the parameters of this new environment to become entirely clear before we act.

We have to form a view of the future and act in a forward-looking way. But we will only ever truly understand the effects of our decisions after the fact. So we will have to establish new frameworks geared towards robust policymaking under uncertainty.

I will lay out the three main shifts characterising the current environment and how they could change the type of shocks we face and their transmission through the economy. I will then touch on the three key elements of robust policymaking in this setting: *clarity, flexibility and humility.*

## **Shifts in the global economy**

Since the pandemic, the European and global economies have undergone three shifts which are changing global markets – and which are playing out over different time horizons.

First, we are seeing profound changes in the labour market and the nature of work. Labour markets are historically tight across advanced economies – and not only due to strong labour demand after the pandemic.

In some economies, workers who left the labour force have not fully returned, be it due to sickness or changing preferences<sup>1</sup>. In others, like the euro area, employment is at record highs, but people are working fewer hours on average<sup>2</sup>.

The pandemic has also accelerated digitalisation<sup>3</sup>, which is likely to affect both the supply of workers and the composition of jobs. Remote working has increased<sup>4</sup>, potentially making labour supply more elastic. And this is now dovetailing with the generative AI revolution, which – like all technological revolutions – is likely to both destroy some jobs and create new ones.

According to one estimate, more than a quarter of jobs in advanced economies rely on skills that could easily be automated<sup>5</sup>. But ECB research also finds that employment shares in occupations more exposed to AI have risen in most European countries over the past decade, refuting the idea that the AI revolution will necessarily lead to a decline in employment<sup>6</sup>.

Second, we are undergoing an energy transition, which in tandem with accelerating climate change is triggering profound transformations in global energy markets. Although Europe has experienced the largest shock, the global energy mix is also in flux as suppliers that previously balanced the market retreat from it.

For some years now, the US shale oil sector has been moving towards a slower growth strategy and investing less

in production capacity. And OPEC+ members have been consistently missing their production targets.

At the same time, the push towards renewables is gaining momentum everywhere, driven by fresh concerns about energy security as well as the imperative of climate action<sup>7</sup>. The EU is now aiming for more than 40% of energy generation to come from renewables by 2030, while the United States is on track for the majority of its electricity to be solar and wind-generated by 2050<sup>8</sup>.

Third, we are facing a deepening geopolitical divide and a global economy that is fragmenting into competing blocs. This is being accompanied by rising levels of protectionism as countries reconfigure their supply chains to align with new strategic goals.

Over the past decade, the number of trade restrictions in place has increased tenfold<sup>9</sup>, while industrial policies aimed at reshoring and friend-shoring strategic industries are now multiplying. And while this has not yet led to de-globalisation, evidence of changing trade patterns is mounting<sup>10</sup>. The fragility of global supply chains highlighted by the pandemic has also accelerated this process<sup>11</sup>.

These shifts – especially those related to the post-pandemic environment and energy – have contributed to the steep rise in inflation over the last two years. They have restricted aggregate supply while also directing demand towards sectors with capacity constraints<sup>12</sup>.

And these mismatches arose, at least initially, against the backdrop of highly expansionary macroeconomic policies to offset the effects of the pandemic, requiring a rapid policy adjustment by central banks.

Whether all these various shifts will prove to be permanent is not clear at this stage. But it is already evident that, in many cases, their effects have been more persistent than we initially expected. And this raises two important questions about the nature of key economic relationships.

### **Two questions about key economic relationships**

The first question is whether the shocks driving economic fluctuations will change. In the pre-pandemic world, we typically thought of the economy as advancing along a steadily expanding path of potential output, with fluctuations mainly being driven by swings in private demand. But this may no longer be an appropriate model.

For a start, we are likely to experience more shocks emanating from the supply side itself<sup>13</sup>. We are already witnessing the effects of accelerating climate change, and this will likely translate into more frequent supply shocks in the future.

More than 70% of companies in the euro area have been estimated to be dependent on at least one ecosystem service<sup>14</sup>. The shift in the global energy mix is also likely to increase the size and frequency of energy supply shocks, with oil and gas becoming less elastic<sup>15</sup> while renewables still face intermittency and storage challenges.

*“Evidence of changing trade patterns is mounting. The fragility of global supply chains highlighted by the pandemic has also accelerated this process”*

Reshoring and friend-shoring also imply new supply constraints, especially if trade fragmentation accelerates before the domestic supply base has been rebuilt. ECB research finds that, in a scenario where world trade fragments along geopolitical lines, real imports could decline by up to 30% globally and could not be fully compensated by greater trade within blocs<sup>16</sup>.

At the same time, our higher exposure to these shocks can trigger policy responses which also move the economy. Most importantly, we are likely to see a phase of frontloaded investment that is largely insensitive to the business cycle – both because the investment needs we face are pressing, and because the public sector will be central in bringing them about.

For example, the energy transition will require massive investment in a relatively short time horizon – around €600 billion on average per year in the EU until 2030<sup>17</sup>. Global investment in digital transformation is expected to more than double by 2026<sup>18</sup>.

And the new international landscape will require a significant increase in defence spending, too: in the EU, around €60 billion will be required annually to meet the NATO military expenditure target of 2% of GDP<sup>19</sup>. Even if carbon-intensive capital is written off more rapidly<sup>20</sup>, all this should lead to higher net investment.

Such a phase of higher structural investment needs will make the economic outlook harder to read. In the euro area, for instance, investment rose in the first quarter of this year amid stagnant output, in part because of pre-planned investment spending under the Next Generation EU programme.

The second question concerns how these shocks transmit through the economy. The new environment sets the stage for larger relative price shocks than we saw before the pandemic.

If we face both higher investment needs and greater supply constraints, we are likely to see stronger price pressures in markets like commodities – especially for the metals and minerals that are crucial for green technologies<sup>21</sup>. And relative prices will also need to adjust to ensure that resources are reallocated towards growing sectors and away from shrinking ones<sup>22</sup>.

Large-scale reallocations can also lead to rising prices in growing sectors that cannot be fully offset by falling prices in shrinking ones, owing to downwardly sticky nominal

wages<sup>23</sup>. So the task of central banks will be to keep inflation expectations firmly anchored at our target while these relative price changes play out.

And this challenge could become more complex in the future because of two changes in price- and wage-setting behaviour that we have been seeing since the pandemic. First, faced with major demand-supply imbalances, firms have adjusted their pricing strategies.

In the recent decades of low inflation, firms that faced relative price increases often feared to raise prices and lose market share<sup>24</sup>. But this changed during the pandemic as firms faced large, common shocks, which acted as an implicit coordination mechanism vis-à-vis their competitors.

Under such conditions, we saw that firms are not only more likely to adjust prices, but also to do so substantially<sup>25</sup>. That is an important reason why, in some sectors, the frequency of price changes has almost doubled in the euro area in the last two years compared with the period before 2022<sup>26</sup>.

The second change has been the tight labour market, which has put workers in a stronger position to recoup real wage losses. Previously, even when shocks did feed through to prices, the risk of second-round effects was contained as we were mostly operating with persistent labour market slack<sup>27</sup>.

But as we are seeing today, when workers have greater bargaining power, a surge in inflation can trigger 'catch up' wage growth which can lead to a more persistent inflation process<sup>28</sup>. We certainly cannot exclude that both these developments are temporary.

In fact, we are already seeing some evidence in the euro area that firms are changing prices less frequently, although in an environment with falling energy and input prices<sup>29</sup>. And it is possible that the tightness in the labour market will unwind as the economy slows, supply-demand mismatches created by the pandemic fade and, over time, digitalisation leads to higher labour supply, including by reducing entry barriers<sup>30</sup>.

But we also need to be open to the possibility that some of these changes could be longer-lasting. If global supply does become less elastic, including in the labour market<sup>31</sup>, and global competition is reduced, we should expect prices to take on a greater role in adjustment.

And if we also face shocks that are larger and more common – like energy<sup>32</sup> and geopolitical shocks – we could see firms passing on cost increases more consistently.

In that setting, we will have to be extremely attentive that greater volatility in relative prices does not creep into medium-term inflation through wages repeatedly 'chasing' prices. That could make inflation more persistent if expected wage increases are then incorporated into the pricing decisions of firms, giving rise to what I have called 'tit-for-tat' inflation<sup>33</sup>.

### **Robust policymaking in an age of shifts and breaks**

So, in this age of shifts and breaks, where we do not yet know

whether we are returning to the old world or entering a new one, how can we ensure policymaking remains robust?

To my mind there are three key elements: *clarity*, *flexibility* and *humility*. First, we need to provide *clarity* on our objective, and on unwavering commitment to deliver on it.

Clarity will be important to establish the proper role of monetary policy in the ongoing transitions. We must be clear that price stability is a fundamental pillar of an investment-friendly environment. Faced with a changing world, monetary policy should not itself become a source of uncertainty.

This will be crucial to keep inflation expectations firmly anchored even when there are temporary deviations from our target, as may be the case in a more shock-prone economy.

And it will also be key to maintaining public confidence that, even in a new environment, we will not lose sight of our target. We must and we will keep inflation at 2% over the medium term.

But in order to achieve our goals, we need *flexibility* in our analysis. We cannot make policy based on simple rules or intermediate targets in an uncertain economy<sup>34</sup>. And this means that we cannot exclusively rely on models that are estimated with old data, attempting to fine-tune policy around point forecasts.

At the same time, we must also avoid the other pitfall of focusing too much on current data and 'driving in the rear-view mirror', since this is likely to make monetary policy a reactive force rather than a stabilising one.

We will instead have to construct policy frameworks that capture the complexity we face and provide a hedge against it – something central banks are already starting to do. In the ECB's case, we have made our future decisions contingent on three criteria: the inflation outlook, the dynamics of underlying inflation and the strength of monetary policy transmission.

These three criteria help mitigate the uncertainty surrounding the medium-term outlook by blending together our staff's inflation projections, the trend that we can extract from underlying inflation, and the effectiveness of our policy measures in countering that trend.

Looking ahead, I expect this type of 'multi-legged' approach will be needed to calibrate policy effectively. But we will also need to enhance this process by regularly updating our models and forecasting technologies<sup>35</sup>, and with deeper analysis of the variables that act as the best leading indicators<sup>36</sup>.

The third element that is crucial in this new environment is *humility*. While we need to continue striving to sharpen our picture of the medium term, we should also be clear about the limits of what we currently know and what our policy can achieve. If we are to maintain our credibility with the public, we will need to talk about the future in a way that better captures the uncertainty we face.



The ECB has already been moving in this direction in our forecasting process, but there is still a way to go. We have published sensitivity analyses of key variables like energy prices and wages, and we used scenario analysis during the pandemic and after the start of the war in Ukraine. We are also aiming to be more transparent in accounting for our forecast errors.

Research suggests that households trust central bank forecasts less if their recent performance has been poor<sup>37</sup>, but we can mitigate this problem if we talk about forecasts in a more contingent way and provide better explanations for errors. For this reason, ECB staff have started publishing the main factors behind our inflation forecast errors and we intend to continue doing so<sup>38</sup>.

## Conclusion

There is no pre-existing playbook for the situation we are facing today – and so our task is to draw up a new one.

Policymaking in an age of shifts and breaks requires an open mind and a willingness to adjust our analytical frameworks in real-time to new developments.

At the same time, in this era of uncertainty, it is even more important that central banks provide a nominal anchor for the economy and ensure price stability in line with their respective mandates.

In the current environment, this means – for the ECB – setting interest rates at sufficiently restrictive levels for as long as necessary to achieve a timely return of inflation to our 2% medium-term target.

And moving forward, we must remain clear in our objectives, flexible in our analysis and humble in how we communicate.

As John Maynard Keynes once said, *“the difficulty lies, not in the new ideas, but in escaping from the old ones.”* ■

## Endnotes

1. This effect is more visible in the United States than in the euro area. See Botelho, V and Weißler, M (2022), “COVID-19 and retirement decisions of older workers in the euro area”, *Economic Bulletin*, Issue 6, ECB; Faria e Castro, M and Jordan-Wood, S (2023), “Excess Retirements Continue despite Ebbing COVID-19 Pandemic”, *On The Economy Blog*, Federal Reserve Bank of St. Louis, 22 June.
2. Arce, O, Consolo, A, Dias da Silva, A and Mohr, M (2023), “More jobs but fewer working hours”, *The ECB Blog*, 7 June.
3. Jaumotte, F et al (2023), “Digitalization During the COVID-19 Crisis: Implications for Productivity and Labor Markets in Advanced Economies”, *Staff Discussion Notes*, No. 2023/003, IMF, 13 March. The implications of digitalisation for the labour market and other aspects of the economy are also discussed in Dedola, L et al (2023), “Digitalisation and the economy”, *Working Paper Series*, No 2809, ECB, April.
4. See Dias da Silva, A et al (2023), “How people want to work – preferences for remote work after the pandemic”, *Economic Bulletin*, Issue 1, ECB.
5. OECD (2023), *Employment Outlook 2023*.
6. Albanesi, S et al (2023), “New technologies and jobs in Europe”, *Working Paper Series*, No. 2831, ECB, July.
7. See also Breckenfelder, J et al (2023), “The climate and the economy”, *Working Paper Series*, No. 2793, ECB, March.
8. US Energy Information Administration (2023), “Annual Energy Outlook 2023”, 16 March.
9. Comparison between 2012 and 2022. Specifically, trade restrictions across goods, investment, and services. The data cited relate to exports only. See Georgieva, K (2023), “Confronting Fragmentation Where It Matters Most: Trade, Debt, and Climate Action”, *IMF Blog*, 16 January.
10. Alfaro, L and Chor, D (2023), “Global Supply Chains: The Looming ‘Great Reallocation’”, paper presented at the 2023 Jackson Hole Economic Policy Symposium hosted by the Federal Reserve Bank of Kansas City, August.
11. Lebastard, L, Matani, M and Serafini, R, “GVC exporter performance during the COVID-19 pandemic: the role of supply bottlenecks”, *Working Paper Series*, No. 2766, ECB, January 2023.
12. See Ferrante, F, Graves, S and Iacoviello, M (2023), “The inflationary effects of sectoral relocation”, *Journal of Monetary Economics*, forthcoming.
13. This new situation has similarities with the “real business cycle” paradigm which, between the late 1970s and 1980s, posited that economies were constantly buffeted, not by demand disturbances (as in the competing Keynesian and monetarist traditions) but by real productivity shocks hitting economic potential and setting off business cycle fluctuations. See Kydland, F and Prescott, E (1982), “Time to Build and Aggregate Fluctuations”, *Econometrica*, Vol. 50, No. 6, November, pp. 1345-1370.
14. Examples of ecosystem services include the products that we obtain from ecosystems such as food, drinking water, timber and minerals; protection against natural hazards; or carbon uptake and storage by vegetation. See Elderson, F (2023), “The economy and banks need nature to survive”, *The ECB Blog*, 8 June.
15. Balke, N, Jin, X and Yücel, M (2020), “The Shale Revolution and the Dynamics of the Oil Market”, *Working Papers*, No 2021, Federal Reserve Bank of Dallas, June.
16. Attinasi, M-G, Boeckelmann, L and Meunier, B (2023), “The economic costs of supply chain decoupling”, *Working Paper Series*, No. 2839, ECB, August.
17. European Commission (2023), “2023 Strategic Foresight Report”, July.
18. International Data Corporation (2022), “IDC Spending Guide Sees Worldwide Digital Transformation Investments Reaching \$3.4 Trillion in 2026”, 26 October
19. NATO data. This figure excludes the four non-NATO EU countries (Ireland, Cyprus, Austria and Malta).
20. IMF (2022), “Near-Term Macroeconomic Impact of Decarbonization Policies”, *World Economic Outlook*, October; for a quantification of the impact of carbon taxes on private investment see Brand, C et al (2023), “The macroeconomic implications of the transition to a low-carbon economy”, *Economic Bulletin*, Issue 5, ECB.
21. According to the International Energy Agency, a concerted effort to reach the goals of the Paris Agreement would mean a quadrupling of mineral requirements for clean energy technologies by 2040. See IEA (2021), “The Role of Critical Minerals in Clean Energy Transitions”, May.
22. In addition to the effects of AI and digitalisation discussed above, the transition to net zero carbon emissions could result in a gain of about 200 million jobs and a loss of about 185 million jobs globally by 2050. See McKinsey (2022), “The net-zero transition: What it would cost, what it could bring”, January.
23. Olivera, JHG (1964), “On Structural Inflation and Latin-American ‘Structuralism’”, *Oxford Economic Papers*, Vol. 16, No. 3, November, pp. 321-332; Guerrieri, V, Lorenzoni, G, Straub, L and Werning, I (2021), “Monetary Policy in Times of Structural Reallocation”, *Proceedings of the 2021 Jackson Hole Symposium*.



24. Koester, G, Lis, E, Nickel, C, Osbat, C and Smets, F (2021), "Understanding low inflation in the euro area from 2013 to 2019: cyclical and structural drivers", Occasional Paper Series, No. 280, ECB, September. For a discussion of the relationship between markups and the pass-through of shocks, see Kouvavas, O, Osbat, C, Reinelt, T and Vansteenkiste, I (2021), "Markups and inflation cyclicality in the euro area", Working Paper Series, No. 2617, ECB, November, and for the pass-through of wages to prices, see Hahn, E (2019), "How are wage developments passed through to prices in the euro area? Evidence from a BVAR model", *Applied Economics*, Vol. 53, No. 22, November, pp. 2467-2485; Hahn, E (2020), "The wage-price pass-through in the euro area: does the growth regime matter?", Working Paper Series, No. 2485, ECB, October; Bobeica, E, Ciccarelli, M and Vansteenkiste, I (2019), "The link between labor cost and price inflation in the euro area", Working Paper Series, No. 2235, ECB, February.
25. Many companies in the euro area had adopted more dynamic pricing strategies in 2022 and said that prices would continue to be reviewed more often than usual in 2023. See Elding, C et al (2023), "Main findings from the ECB's recent contacts with non-financial companies", *Economic Bulletin*, Issue 1, ECB.
26. Cavallo, A, Lippi, F and Miyahara, K (2023), "Inflation and misallocation in New Keynesian models", paper presented at the ECB Forum on Central Banking, Sintra, June.
27. Koester, G et al (2021), op. cit.; Baba, C and Lee, J (2022), "Second-Round Effects of Oil Price Shocks – Implications for Europe's Inflation Outlook", *IMF Working Papers*, No 2022/173, IMF, September.
28. Lagarde, C (2023), "Breaking the persistence of inflation", speech at the ECB Forum on Central Banking 2023 on "Macroeconomic stabilisation in a volatile inflation environment" in Sintra, Portugal, 27 June.
29. Banque de France (2023), "Monthly business survey – Start of June 2023".
30. Digitalisation also increases the possibility to outsource intermediate services to emerging markets. See Baldwin, R (2022), "Globalbots and macroeconomics: Globalisation and automation of the service sector", paper presented at the ECB Forum on Central Banking, Sintra, June.
31. Labour supply could decline due to geopolitical fragmentation (making labour markets less "contestable"), a possible decline in migration or further ageing of the workforce. See, for instance, Freier, M, Lichtenauer, B and Schroth, J (2023), "EUROPOP2023 demographic trends and their euro area economic implications", *Economic Bulletin*, Issue 3, ECB.
32. Over the longer term, the transition to renewable energy could make energy supply more elastic again and cheaper.
33. Arce, O, Hahn, E and Koester, G (2023), "How tit-for-tat inflation can make everyone poorer", *The ECB Blog*, 30 March; Hahn, E (2023), "How have unit profits contributed to the recent strengthening of euro area domestic price pressures?", *Economic Bulletin*, Issue 4, ECB.
34. For a critique of this approach to policymaking, see Faust, J and Leeper, E (2015), "The Myth of Normal: The Bumpy Story of Inflation and Monetary Policy", paper presented at the 2015 Jackson Hole Economic Policy Symposium hosted by the Federal Reserve Bank of Kansas City, August.
35. See, for example, recent ECB research on the application of random forest forecasts to inflation: Lenza, M, Moutachaker, I and Paredes, J (2023), "Density forecasts of inflation: a quantile regression forest approach", Working Paper Series, No. 2830, ECB.
36. Bańbura, M et al (2023), "Underlying inflation measures: an analytical guide for the euro area", *Economic Bulletin*, Issue 5, ECB.
37. McMahon, M and Rholes, R (2023), "Building Central Bank Credibility: The Role of Forecast Performance", mimeo, University of Oxford.
38. Chahad, M, Hofmann-Drahonsky, A-C, Meunier, B, Page, A and Tirpák, M (2022), "What explains recent errors in the inflation projections of Eurosystem and ECB staff?", *Economic Bulletin*, Issue 3, ECB; Chahad, M, Hofmann-Drahonsky, A-C, Page, A and Tirpák, M (2023), "An updated assessment of short-term inflation projections by Eurosystem and ECB staff", *Economic Bulletin*, Issue 1, ECB.

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# Digital trade is good for growth: can it also solve our ESG challenges?

**Pamela Mar is the Managing Director of the Digital Standards Initiative at the International Chamber of Commerce**

**T**he world expects a lot from SMEs (small and medium sized enterprises). These businesses account for between 70% and 90% of job creation in most economies (OECD and developing economies respectively), and their importance will only increase given the demographics in the developing world.

In Africa, for instance, one billion people will need jobs by 2050, almost 400 million more jobs than exist today. SMEs are the first step in formal employment for many unskilled workers, offering them skills and a way out of poverty. SMEs also provide essential services to poor and rural residents, contributing to social and economic stability, particularly where governing institutions may be weak.

Increasingly, SMEs are being called upon to play their part in the fight against climate change. 60% of the world's CO<sub>2</sub> emissions occur in global value chains largely comprising SMEs, in particular for consumer products and light industrial goods.

SMEs are the source of most Scope 3 emissions (ie. emissions generated along the company's value chain) for many large companies, which in many cases are 90% of a firm's total footprint. Put simply, the world will not meet its net zero imperative without massive action on the part of SMEs.

Alas, SMEs face myriad challenges to simply stay afloat: one survey<sup>1</sup> reported that 80% of SMEs in Africa will fail within their first five years. While this is just one statistic, anecdotal evidence shows that many of the challenges facing SMEs are deeply set, persisting despite development aid, foreign investment, training support, and even periods of high growth.

The International Finance Corporate estimates<sup>2</sup> that 40% of SMEs in developing countries have unmet financing needs totalling \$5.2 trillion. Surveys by organisations such as We Mean Business<sup>3</sup> show that SME climate action is hindered by a lack of financial resources, lack of capacity and technical know-how, and a lack of physical tools and technologies needed to drive their net zero programmes.

SMEs typically have a low capital base and fewer operating reserves even in the best of times. So, asking them to step

up – whether for jobs or climate – particularly in an economic downturn, requires a new approach.

This is where digital trade could play a big role.

The digitalisation of trade and supply chain processes is well known to be an economic opportunity with almost unparalleled upside from a growth perspective: it is good for business because it cuts costs, increases speed and transparency, and produces valuable data that can be used inside the supply chain and especially in financing.

For governments, digital trade is a potential growth driver and an accelerator of crossborder trade. It saves time and labour at the border, while offering transparency and traceability that make compliance easier and less corruptible.

And yet digital trade is difficult: physical systems must be converted; standards must be created and adopted; legal frameworks must be upgraded to acknowledge electronic records and forms; IT systems and networks must be connected; people must be trained to do things in new ways.

Digital trade does not just affect customs and border departments: in many cases a commitment to digital trade may involve over 20 government departments and agencies, including trade, finance, science, tax, interior, and so on.

Notwithstanding the complexity, there is a palpable sense of progress globally on the issue: over half the G7 (by GDP) is on its way towards a regulatory environment that legalises, and enables, digital trade.

In the UK, the recent passage of the Electronic Trade Documents Act has the potential to kick-start trade transformation far beyond its borders because of the use of English law in many jurisdictions globally.

Digital trade has been recommended in a number of multilateral fora such as the G7, G20, APEC, the Commonwealth and others. Digital trade and economy agreements are being pursued by several major trading economies such as the EU, Korea, Australia, and Singapore. At least half a dozen other members of the G20 are making concrete steps towards legislation to support digital trade.

Drawing upon years of groundwork on trade standards by public bodies such as UNECE/UNCEFACT and the World Customs Organization, industry is making headway on digital standards for all key trade documents to be ‘translated’ into interoperable data by the end of 2023 in an effort led by the International Chamber of Commerce’s Digital Standards Initiative (DSI).

Convergence toward key data standards will enable interoperability of data across networks and trade platforms, which will address a key barrier faced by SMEs seeking to trade internationally.

Today, trade platforms which facilitate data sharing do exist, but many are closed, meaning that data sharing can only take place between approved members.

All companies within a supply chain – sometimes 10-15 different enterprises – must be on the platform so that the supply chain can transact digitally. At the same time, companies along a supply chain may have several customers, each using a different trade platform.

Multiple memberships and platforms become complex when these different platforms each uses their own data formats and data sets, meaning that for every instance, data must be reconfigured, reformatted, or recut entirely if taxonomies and standards differ.

SMEs, being lean by design, will more acutely feel such an administrative burden, while large companies can simply add administrative staff. The more platforms write their own rules, the more SMEs are disadvantaged. Add the complexity of different crossborder regulations, and it is no surprise that most SMEs do not trade internationally, and of those that do, most only manage to trade in one other market.

In other words, a digital trade environment, with its transparent rules and uniform standards could significantly level the playing field for SMEs across borders.

This is exactly what the evidence about paperless trade, customs single windows and digital aspects of trade facilitation<sup>4</sup> shows: the implementation of these key measures not only boosts growth but is particularly empowering for SMEs.

Beyond this, initial work on digitalising trade documents by ICC offers hope in addressing financing hurdles faced by SMEs. Put simply, a consolidated dataset derived from digitalising seven key trade documents could address a significant portion of a bank’s data needs for a typical trade finance transaction.

In essence, the supply chain dataset could function as the vaunted ‘single source of truth’ provided it uses globally interoperable standards, is secured by technologies of trust, and anchored by the use of verifiable digital identity.

The bank would not need to mount its own effort to ascertain this same information, potentially lowering the cost of

*“A digital trade environment, with its transparent rules and uniform standards could significantly level the playing field for SMEs across borders”*

financing, thus reducing the administrative burden which prevents many large banks from serving more SMEs.

This core supply chain dataset can also be applied to environmental data needs that must be met on the road to net zero. Virtually all of the critical data required to calculate Scope 3 – from raw material specs, quantities and product codes, shipment modalities, and ports of call – can be found within this core dataset, for obvious reasons.

Trade documents which summarise key terms of trade, enable goods to flow from partner to partner within global supply chains.

The problem today is that in the analogue supply chain, data is manually gathered from different players and then passed along using spreadsheets, email, or other methods. It is rarely automated, prone to errors, and cannot be analysed in aggregate without a lot of effort and time.

As a result, the calculation of a Scope 3 footprint today is very painstaking across the supply chain, which is impractical for large or complex supply chains or for companies running thousands of products.

The alternative is to rely on a combination of big data or scoping of a part of a supply chain followed by extrapolating outward. And yet, the use of big data has already been challenged by European governments<sup>5</sup> who realise, quite rightly, that such tactics are imperfect.

So, while climate activists may rejoice that Scope 3 emissions will eventually be disclosable (and subject to third party verification) under the recently released ISSB and European Corporate Sustainability Disclosure guidelines, it is openly known that most current methodologies for gathering such data are unfit for purpose, at least for many consumer-oriented supply chains.

Trade data from digitalised supply chains can provide the crucial bridge needed to close the gap. Indeed, the systems for sourcing and delivering such data are essentially the same whether for supply chain transactions or supply chain environmental impact calculations.

Moreover, secure, verified datasets sourced from key trade documents are by nature auditable; they will have passed multiple borders, customs authorities, and regulatory bodies. If financing can flow on this basis, so can climate data.



For companies in which sustainability still relies on the same practices – survey, upload, audit, monitoring – that have been used for years by social compliance programmes, the push for auditable, automated environmental data from the supply chain may seem like an impossible task. It need not be.

Of course, it is one thing to say that digital trade can help deliver the data needed to understand supply chain environmental impact, and another to say that mitigation

actions are actually occurring. But providing transparency on the problem is a crucial first step.

And for small enterprises serving dozens of customers, digital supply chain practices – delivering standardised approaches to data, interoperability across platforms, and digital identity and credentials – hold the potential to drive the shift from an enterprise overwhelmed by data and the complexity of competing demands, to a future ready, environmentally, and socially conscious business. ■

#### Endnotes

1. <https://businessday.ng/uncategorized/article/80-of-businesses-in-africa-fail-within-five-years-of-establishment-report/>
2. <https://www.worldbank.org/en/topic/sme/finance>
3. <https://www.wemeanbusinesscoalition.org/press-release/small-businesses-want-to-help-tackle-the-climate-crisis-but-lack-finance-and-knowledge-new-survey-finds/>
4. <https://www.tradefacilitation.org/interview/fuelling-growth-in-small-and-medium-sized-enterprises/#:~:text=Trade%20facilitation%20can%20reduce%20the,that%20SMEs%20will%20become%20exporters.>
5. <https://www.nytimes.com/2022/06/12/climate/vegan-leather-synthetics-fashion-industry.html>

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# Enabling digital trade

A close-up portrait of Dr Graham Bright, an older man with white hair, smiling. He is wearing a dark suit jacket, a white shirt, and a purple tie with white polka dots. The background is a blurred office setting with horizontal blinds.

*World Commerce Review* interview Dr Graham Bright, a leading thinker on the digitalisation of trade, about the challenges that need solving

## **Tell us about Euro Exim Bank?**

Founded in 2017, the bank is headquartered in St Lucia, West Indies, regulated, supervised and authorised by the Financial Services Regulatory Authority. EEB also have a representative office in London. From humble beginnings with a core team of 10, now, with a network of sales agents and partners in 190+ countries, we serve import and export businesses. EEB are one of the fastest growing and widest reach trade institutions anywhere across the globe.

EEB provides financial services to facilitate international trade, through issuance of key instruments for both buyers wishing to arrange imports, sellers to guarantee payment, and contractors wishing to bid for major infrastructure projects. Our clients are registered corporates based in active markets such as Asia, India, Middle East and Africa.

## **What is the main advantage of partnering with Euro Exim Bank?**

In our extremely dynamic business sector, demand for new products and critical raw materials has changed the way that companies and countries are looking at new supply chains.

From previously untapped markets, hit by lack of trust, low liquidity, expensive and compromised supply of fiat currency, withdrawal of major bank services and fragile infrastructure, the need is greater than ever for a specialist trade finance bank. Recognising our economic rates, fast issuance and local contacts in both developed markets and disintermediated emerging jurisdictions, EEB is a natural partner.

With free trade agreement opportunities and new partnerships, community events, and a growing network of agents and partners, EEB are ideally positioned to support and serve the ever-growing volumes of world trade.

## **What key services can EEB provide to the customer?**

In addition to the issuance of stands trade instruments such as letters of credit and standby letters of credit, along with performance bonds and bank guarantees, the bank can also provide bank comfort letters, proof of funds and advanced guarantees.

In addition, the bank is providing services to corporate clients wishing to boost their balance sheets through bond issuance. Here we work in identifying companies looking to raise capital on USD markets by working on initial feasibility studies and introducing them to fund providers.

## **What sectors and geographical areas does Euro Exim Bank cover?**

Our sales network now covers over 190 countries, and this gives us a unique global perspective which keeping contacts local.



Globalisation is inevitable. The world is becoming increasingly connected, driving the need for faster and more efficient crossborder payments

Our clients deal in all manner of goods, from food to machinery, batteries to garments, and we have had dealings with clients on six continents.

Most business comes from Asia, Africa and India, and we are seeing more interest for critical raw materials, from Africa and South America fuelled by international free trade agreements and insatiable worldwide demand for metals.

### What digital technologies does Euro Exim Bank employ?

As members of the ICC and as an active participant in the UK APPG All Party Parliamentary Group on trade, EEB are very aware of new technologies that will improve speed, accuracy and connectivity, in a long-awaited move from bureaucratic paper (mainly unchanged since the 1800s) to digital processes.

Specifically in the UK, The Electronic Trade Documents Act is a ground-breaking piece of law facilitating removal of legal barriers to digitalising commercial trade documents where information can flow more easily between the public and private sectors and across jurisdictions with trading partners. Our IT teams are purposefully embedding the recommendations and practical solutions offered by this legislation.

Our home-built trade platform also incorporates machine learning and blockchain capabilities, both of which technologies have improved internal processes, however, with all use of commercial blockchains is yet to see true benefits to end users, especially in geographically challenging countries.

Other technologies used include the transmission of standardised authenticated financial messaging via SWIFT, where we relay our instruments to banks securely for safe and verified delivery to ultimate beneficiary banks.

### What plans for the future does Euro Exim Bank envisage?

Within 5 years, to be the largest, fastest growing, most trusted, truly global, reliable and innovative trade finance institution on the planet where our culture is driven by an obsession with excellence, integrity and an entrepreneurial spirit that recognizes and rewards vision and hard work.

Through partnerships, acquisition, and with a focus on adding value for our customers and making the necessary investments, we hope to ensure long-term success.

By offering services simply, efficiently and effectively, we will take advantage of opportunities in technology, ESG and supply chain dynamics to further establish ourselves as a global leader in the financial services industry, sustaining and accelerating our growth.

### How do you see the future for crossborder payments?

This market is huge with C2C payments worth US\$800 billion in 2022, and B2B crossborder payments set to exceed US\$150 trillion by 2026. Banks have been the traditional de-facto providers of such services, managing international payments, which are essential to support the free flow of goods and services.

But change is coming, through emergence of fintech players looking to challenge the status quo. Their USP's? Faster, more efficient, cheaper, less error prone services, cloud based, secured and ready now.

Real-time payments systems make it possible to send and receive crossborder payments instantly, where formerly,



the problem was the time it takes to reach the recipient and complete a transaction.

By reducing the number of intermediaries and not being hampered by operating schedules and time zones, or even currency exchange, real-time payments are the way forward.

Central Bank Digital Currencies (CBDCs), digital versions of fiat currencies, will increasingly be used for real-time settlements between central banks. Whilst take up has been slow, more countries are showing interest and working on pilots.

Once these proofs of concept filters down to domestic banks, and accepted by local companies, we may see a situation of 'currency flight', a lessening dependency on the US Dollar as the primary currency of trade.

Technologies such as blockchains can provide a secure and transparent way to transfer money with efficiency and compliance, as all transactions are immutably and securely recorded on a distributed ledger, allowing instant secure transfer between two parties, even disintermediating banks.

Globalisation is inevitable. The world is becoming increasingly connected, driving the need for faster and more efficient crossborder payments.

We are already seeing a proliferation of alternative finance providers, fintech driven payment start-ups and interest from tech giants wanting to extend their market share as traders to full blown banking services supported by invoicing, identity and crossborder data management.

As these companies are not encumbered by the constraints of ever-changing financial regulations as applicable to traditional banks, they are uniquely positioned to rapidly innovate, offer new cost-effective solutions and ultimately take market share.

## How will fintech enhance global trade?

The opportunities and economies of fintech in trade are significant.

Firstly, automating the process across the entire instrument lifecycle encompassing the full ecosystem, still consisting of siloed operations and disparate participants. Then, the accuracy and clarity of data, with early verification, identifying risk, enabling risk mitigation and lower contingent liability.

Also, connectivity, with easier communication and provision of new online banking services, for example, embracing digital and crypto currencies to reduce fx requirements, with real time transfer.

The latest iteration of fintech driven trade will be assisted through peer-to-peer (P2P) lending networks giving access to competitive funding for all sizes of companies.

This innovative mechanism may help smaller companies remove trade barriers, increase liquidity, and reduce administrative burden where they have traditionally been disadvantaged through small deal size, expensive FX and bureaucratic process.

## Conclusion

Whilst trade remains vital to global economies, there are still deep-rooted challenges to be solved.

By employing technologies such as blockchain, real-time inter and digital currency payments through P2P networks and alternative funding options from non-regulated financial institutions, the trade landscape is undergoing rapid change.

Nirvana for trade is inclusivity, collaboration, affordability, security, digitisation, settlement finality and transparency, enabling all players regardless of geography, currency, culture, and tariffs to compete on the global stage effectively and economically, without being disadvantaged financially, exploited and bypassed. Fintech can only assist in this lofty ambition. ■

**Graham Bright is the Head - Compliance and Operations, at Euro Exim Bank**





# The contribution of capital flows to sustainable growth in emerging markets

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I want to start with a problem that has often bothered me. As the South African central bank Governor, I regularly meet with global investors to discuss economic conditions and policy settings in my country. The fundamental goal of these engagements is to encourage investment.

Then I return from these meetings, and we have policy sessions where staff want to talk about the dangers of capital flows. But the investors I just met are the people who are responsible for the capital flowing. So, I wonder – which part of my time am I wasting? Do we want these capital flows or not?

This is a global discussion, and one that has evolved significantly over my time working in macroeconomic policy.

20 or 30 years ago, the mainstream view was that financial globalisation was good. Global markets could provide more financing, at lower rates, than countries could achieve by relying on their own resources. They would allow for better risk sharing, and they would create better incentives to get policy right.

The standard policy recommendation was that controls on capital flows should therefore be liberalised, and where they were being applied, this was probably to cover for some other policy error<sup>1</sup>.

Nowadays, the mainstream view has shifted. The IMF encourages policymakers to keep capital flow measures in their toolkits, both for pre-emptive purposes and to address capital flow surges<sup>2</sup>. The guidance is nuanced, and there is still appreciation for the benefits of capital flows – but as Christine Lagarde put it a few years back, “[This] is not your grandmother’s IMF<sup>3</sup>”, and there has clearly been a big shift in the policy advice<sup>4</sup>.

Outside of the IMF, attitudes to capital flows have been more bluntly critical. One part of this is unhappiness with spillovers from United States monetary policy, sometimes when the stance is loose, as in the ‘currency wars’ era after the global financial crisis, and sometimes when financial conditions tighten, as they did in the 2013 taper tantrum and as they have been doing during the current period.

Another is the geopolitical tensions that have made ‘deglobalisation’ a buzzword. There have also been shifts in

the realm of ideas, with even some mainstream economists condemning most forms of capital flows. For instance, in October 2022, Arvind Subramanian published an op-ed arguing that, “capitalism must be saved from its financial rentiers, and financial deglobalisation is a good place to start.”<sup>5</sup>

Altogether, the reputation of capital flows is at a low ebb.

We should, nonetheless, respect the enormous opportunity presented by access to a global financial system. Indeed, taking a blue-sky approach, capital flows look much too small.

There are studies of optimal current account deficits for small economies, and they yield extraordinary estimates, for instance that it would be optimal to run annual current account deficits up to 60% of gross domestic product (GDP)<sup>6</sup>.

Relatedly, if you think about it, it is strange that interest rates in developing countries are not orders of magnitude above those in rich countries. Even in middle-income countries, capital stocks are typically less than a third of those in the United States, on a per capita basis<sup>7</sup>.

It would make sense to pay radically higher rates to attract more investment, which would then raise the productivity of labour<sup>8</sup>. Yet real rates are not so far removed from advanced country levels: over the past two decades, real policy rates in rich countries have averaged about -1%, compared to just under +1%, on average, for middle-income countries<sup>9</sup>.

Obviously, these observations are not policy recommendations. They do not pass reality checks. But they can help us approach the question of capital flows and financial integration with a more open mind.

Considering the empirical cases, critics of capital flows often point to the successes of Asian countries, most recently China. These fast-growing economies were typically capital exporters, despite starting off poorer and with smaller capital stocks than the economies in which they invested their surplus savings. These countries also suffered crises when they opened to financial flows in the 1990s, disrupting their remarkable development trajectories.

Where are the poster children for proponents of capital flows? There are countries that have enviable growth records, and which have relied for many years on capital inflows. These

include the United States, Canada, New Zealand, and perhaps the clearest case of all, Australia<sup>10</sup>.

As one study from the Reserve Bank of Australia pointed out, “Sizeable current account deficits have been recorded in Australia in almost every decade for at least 150 years.”<sup>11</sup> These large and sustained capital inflows have allowed for a higher level of investment than could have been achieved with only local savings. And the success of the economic model is hard to dispute.

Australia’s living standards have ranked among the highest in the world since the middle of the 19<sup>th</sup> century, and towards the start of the 20<sup>th</sup> century they were probably the highest of any country<sup>12</sup>. It is highly unlikely that Australia would have performed better in the absence of capital flows.

Of course, we cannot read Australian economic history as one long vindication of free capital movements. Both the depression of the 1890s and the economic crisis of the 1920s had symptoms familiar from modern emerging market crises, including balance of payments pressures and foreign debt stress.

We also cannot say Australia has always been happy with large current account deficits. In the late 1970s and early 1980s, these deficits were a major concern for policymakers, especially because they were being driven by fiscal policy and were draining foreign exchange reserves.

However, significant current account deficits persisted even after the floating of the Australian dollar and fiscal consolidation<sup>13</sup>. This gave rise to the so-called ‘consenting adults’ thesis, that current account deficits produced by private sector decisions could be optimal and sustainable, and policymakers would not have to worry about them.

Reflecting on other country experiences, the simple fact that deficits were privately contracted seems insufficient. We know private sector flows can be dangerous: clear recent examples are Spain and Ireland’s experiences during the euro area crisis. It therefore seems relevant that foreign investors in Australia were willing to accumulate claims denominated in Australian dollars, and that the Australian dollar floated.

Another crucial fact appears to be a bedrock of investor confidence, based on credible macroeconomic policies – including a reasonable degree of price stability – and a resilient financial system.

One also senses some deeper mechanism here, which ensured capital was channelled into productive assets that generated good returns. Of course, this reflects more than the resource endowment, as we could name many countries with ample natural resources which have not absorbed capital flows productively.

There has also been something else going on, since at least the 19<sup>th</sup> century, that has made capital in Australia productive, whereas that same capital deployed elsewhere would have produced boom-bust cycles and default.

*“I do not think we should jump from diagnosing bad consequences to urging a prohibitionist approach to capital flows and giving up on the benefits”*

Part of this is a story about the quality of institutions as well as the human capital available and empowered to run them<sup>14</sup>. Another theme is the development of local capital and financial markets, and their capacity to turn capital to productive purposes. As I will discuss below, these capacities intersect with policy choices, with capital flows supporting or weakening the productive potential of an economy.

On the whole, the Australian case teaches us that a country can absorb large capital flows over very long periods of time and use these to support high levels of prosperity. This contrasts starkly with the Asian examples, where a range of countries likewise achieved impressive gains in living standards, but mostly did so without foreign capital.

Most of the world’s countries would be happy if they could be Asian tigers, and ecstatic if they could be Australia. But many of us have a long way to go. What attitude to capital flows would help us on our way?

In South Africa, we have long favoured the Australian option<sup>15</sup>.

Given ample investment opportunities and limited domestic savings, growth and capital inflows have typically been correlated. In 1985, when the apartheid government was hit with sanctions, access to capital flows was largely cut off<sup>16</sup>.

Of course, this was not a developmental policy for South Africa; it was a punishment. When sanctions were lifted at the end of apartheid, we looked forward to restoring access to global financial markets. We also appreciated that the end of sanctions did not mean the taps were open. Foreign investors all loved South Africa, but they would not invest based on warm feelings. And there was going to be a limit on how much investment we could attract, even with good policies.

With a low domestic savings rate, if the public and private sectors were both borrowing heavily, this meant we were going to hit a balance of payments constraint. Specifically, we anticipated an unsustainable current account deficit, which would weaken the rand and drive up inflation.

Interest rates would then have to rise to rebalance savings and investment, slowing growth. This was the core problem statement of the macroeconomic strategy adopted by the Mandela government in 1996.

The goal was to attract more foreign savings, apply some fiscal discipline to improve the country’s investment profile and reduce government’s demands for savings, thereby



permitting lower interest rates to allow more private sector investment.

In hindsight, I would say the strategy was mostly successful.

We experienced some of the downsides of openness to capital flows. These included a huge depreciation of the rand in 2001, which only loosely reflected fundamentals, as well as a phase of currency strength during the mid-2000s, which may have affected export competitiveness. The stronger currency and low interest rates also fed dramatic house price appreciation and risky mortgage growth - a dynamic arrested by the 2008 crisis.

Despite those blemishes, it was still a success. Indeed, as time has gone by, it looks more and more like a golden age of South African macroeconomic policy. Living standards were rising and growth was outpacing the global average<sup>17</sup>. Our investment rate rose from around 15% of GDP at the end of apartheid<sup>18</sup>, to around 20% of GDP, even as the domestic savings rate remained low at about 15%.

This naturally entailed significant net capital inflows, much of it through portfolio flows rather than foreign direct investment. These we de-risked, in large part, by committing to a free-floating currency and minimising foreign currency borrowing across the economy.

It seems extremely unlikely that we could have had better results by closing ourselves to global capital. What causes me great concern, by contrast, is what happened next.

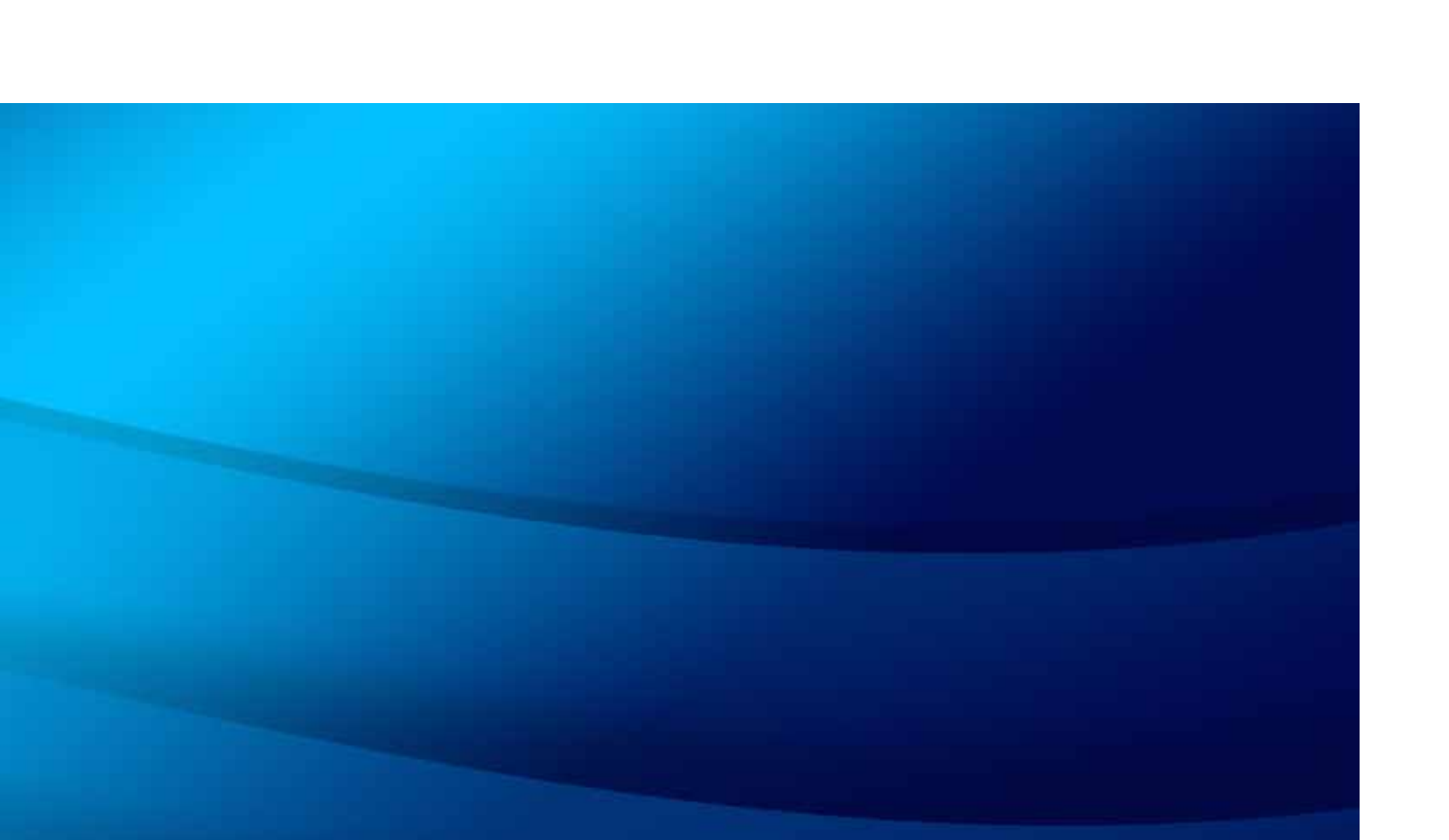
The 15 years from 2009 onwards are almost a mirror image of the first 14 years of democracy. From 1994 onwards, we achieved steadily high investment and growth, interrupted by temporary setbacks; from 2009 onwards, we have had steadily lower investment and growth, punctuated by incomplete recoveries.

The IMF's projections have 2023 investment at 16% of GDP - far below the ratio needed for adequate growth. And yet even this level of investment is posing a serious funding challenge because the domestic savings rate is just 13% of GDP - the lowest level since at least 1980 - and the investment case for external investors has weakened significantly. Growth is projected at a mere 0.1%.

This is where the capital flow story comes in. For much of the decade after the global financial crisis to date, South Africa had ample access to foreign capital, helped by ultra-low interest rates in major economies. The average current account deficit, until the onset of COVID-19, was over 3% of GDP. The financing for this deficit mainly came from portfolio flows, as it did before the global financial crisis.

However, the composition of investment for this period shifted markedly towards government debt, and away from private sector assets such as equities. During the boom of the 2000s, government and public corporations absorbed just 16% of portfolio flows. In the next decade, this rose to 78%<sup>19</sup>.

Recalling the Australian case discussed earlier, what we see is that South Africa moved away from a 'consenting adults'



arrangement, where a stable fiscal position and a current account deficit were driven by private sector decisions, to a classic twin-deficit situation.

This had three destabilising implications. First, the volumes of money available to South Africa after the global financial crisis undermined good policymaking. In the 1990s and 2000s financial markets helped with fiscal discipline; in the 2010s they enabled excess. The underlying problems were homegrown, but the ready availability of foreign savings after the global financial crisis made it harder to win policy battles.

Investor scrutiny is good for policy: it obliges everyone to double-check the figures and cut back on things you do not really need. But when you know the money is coming anyway, it becomes much harder to insist on policy rigour.

Second, these flows permitted the build-up of a large sovereign debt position. Debt, famously, is a troublesome form of financing because the lender shares relatively little risk with the borrower – unlike, say equity investments, where unsuccessful projects directly affect share prices and dividends<sup>20</sup>.

Sovereign debt is particularly problematic, because declining government creditworthiness also spills over to the credit profiles of firms and households. With time, it leads to higher taxes and lower public sector investment to accommodate higher interest payments. An unsustainable fiscal position can therefore become a drag on the whole economy.

Third, capital flows eroded potential growth. We often talk about the importance of institutions to growth, but debt can be used to weaken institutions by funding systems of patronage and corruption, driving out skilled and diligent public servants. Many private sector firms will also follow the money, redirecting their efforts from productive enterprise.

Through these two channels, capital flows helped subvert the market incentives and competent bureaucracies that power modern economies. Our macro framework delivered resilience through a floating exchange rate, low foreign currency debt exposures, and careful regulation of the financial sector.

But resilience is not enough; if you are going to absorb capital flows, you also need to get allocation right. Huge non-resident flows into public sector debt can actually make this more difficult.

Today, we face the consequences. With too much borrowing, not much domestic saving and limited non-resident appetite for our assets, interest rates must rise to restore balance.

The alternative is an inflationary balance of payments problem, which is plainly against the South African Reserve Bank's mandate. This does not make the Reserve Bank popular, but facts are facts. We have gotten ourselves back in the trap we escaped in the mid-1990s.

Reflecting on this whole experience, it is easy to sympathise with Daron Acemoglu's argument in a recent Project Syndicate piece, that South Africa shows how capital flows,

instead of promoting good government and development, can 'facilitate' a "hollowing out [of a] country's economy and institutions..."<sup>21</sup>

Nonetheless, I do not think we should jump from diagnosing bad consequences to urging a prohibitionist approach to capital flows and giving up on the benefits. I would much prefer a risk management approach.

A source of inspiration here is the airline industry, where regulators and companies work together to fly as many planes as possible, as safely as possible, rather than responding to the occasional accident by adopting a zero-tolerance attitude to risk, which would sharply reduce the number of flights and blow up costs<sup>22</sup>. I think this is the right way to approach capital flows.

A great strength of the IMF's 'institutional view' is that it acknowledges the benefits of capital flows upfront and then moves on to risk control<sup>23</sup>, using a toolkit of capital flow and macroprudential measures<sup>24</sup>.

A shortcoming in using these tools, however, is their weakness where the problematic flows spill over into the public sector. And these cases are hardly outliers. Capital flows into sovereign debt have been a major source of crises since at least the 19<sup>th</sup> century<sup>25</sup>. The ongoing African 'funding squeeze' is fundamentally about government borrowing<sup>26</sup>.

Nonetheless, the IMF's 2022 review paper on capital flow measures says relatively little about fiscal policy. The word 'fiscal' appears only nine times in that document, compared to 119 instances of the word 'bank'. The policy advice is simply that if fiscal policy is the problem, it should be adjusted<sup>27</sup>.

Fair enough, but what if that does not happen? Do we have additional policy tools to manage these risks? One option is to adjust the regulatory treatment for government bond holdings, for instance by obliging banks to hold capital against them instead of treating them as riskless. But this would not directly affect non-resident investment decisions.

A second tool is developing a proper sovereign bankruptcy procedure<sup>28</sup>. This would give lenders stronger incentives to scrutinise borrowers. Where debts become unsustainable, countries would also have a better option than prolonged debt distress which delivers restructuring only after years of misery<sup>29</sup>.

Still, I have limited faith in the ability of lenders to exercise adequate caution in the boom phase of the cycle. And where government debt is an asset held throughout society, default is probably a cure worse than the disease.

A more benign tool is foreign exchange reserves. Standard accounts traditionally emphasise the role of reserves in meeting balance of payment needs<sup>30</sup>, especially in the context of inflexible exchange rate arrangements.

But foreign exchange reserves are arguably more important for risk management, especially now that floating exchange

rates are normal practice. A new wave of research is now also making direct connections between foreign exchange reserves and sovereign debt vulnerability<sup>31</sup>.

With floating exchange rates and reserves financed in local currency, negative shocks to the country generate positive valuation effects on foreign exchange reserves<sup>32</sup>. Central banks can therefore accumulate reserves to hedge the public sector balance sheet against adverse outcomes, driven by factors that include unsustainable fiscal policies. Furthermore, central bank independence provides a technology for protecting these assets from spending demands<sup>33</sup>.

This reserve accumulation approach may well work better than trying to restrain surges with capital flow measures, in a general sense, with reserve growth during inflow phases and the option to release reserves during outflows<sup>34</sup>. And it is a particularly useful option where flows are going to government debt and regular capital flow measures are not viable.

In addition to these tools, we should consider our macro policy narratives. For a start, we need to rediscover the dangers of government borrowing. Responsible policymakers never forget that fiscal debt is risky. But the nature of policy discussions is that while many claims are valid, some points get more emphasis than others.

In the past decade, one such point was that fiscal consolidation hurts growth and is therefore self-defeating. Another was that higher government debt levels were safer than previously thought.

I have personally observed these claims justify sustained fiscal slippage in South Africa. If we had felt the urgency of debt sustainability more keenly, we would have had a wiser conversation. We need a more responsible set of narratives around fiscal risks<sup>35</sup>.

We also need to think more clearly about allocative efficiency. One of the strongest lessons I have learnt as a policymaker is that poor countries are poor not simply because they do not have money, but because they do not use money effectively.

Too often, there is a tendency to look at a problem, cost out a solution and focus on raising the cash. Implementation is just a black box. But good policymaking starts with implementation and the financing need should reflect what can be used efficiently.

Indeed, one might cast the volatile and often damaging history of capital flows as a conflict between budget constraints and capacity constraints. Capital flows provide spending power and can radically shift the budget envelope, but implementation capacity is stickier, and budgets can easily overshoot capacity.

This point is relevant, once again, in the global dialogue about climate change justice and the financing that should be directed from rich countries to poor ones. There is a strong focus on costing the climate change impact for poor countries

and using those estimates to lobby for massive inflows.

But we have seen many times that the sum of money is secondary to the quality of policies, the incentives they create and the capacity of the institutions available to invest funds. The capital flow sceptics and the climate justice activists should exchange notes.

Ladies and gentlemen, to conclude, I remain impressed by the power of global capital flows to support investment, reduce financing costs and accelerate convergence in developing economies – especially where domestic savings are below investment needs.

Nonetheless, this is a force that is dangerous as well as useful and powerful. The South African case shows both sides of the

coin: intelligent use of capital flows in one period, and abuse in the second.

For countries where investment opportunities exceed local savings rates, doing without capital flows means giving up on significant growth. It is not an attractive strategy. A better one is to welcome capital flows, control risks and nurture institutions that can deliver productive investment choices. That applies to climate finance, too.

We need to remain optimistic about capital flows and vigilant about the risks, rather than pessimistic about the flows and allergic to the risks, or naïve about the flows and blind to the risks. My hope is that when the next boom comes, we will have learnt lessons that make that boom as safe, as long and as large as possible. ■

#### Endnotes

1. An interesting retrospective discussion on this may be found in David Lubin's interview with Larry Summers, titled, 'Thinking aloud on emerging markets: is the international monetary system bad for EM?', 2 August 2022.
2. 'Review of the institutional view on the liberalization and management of capital flows', IMF Policy Paper No.2022/008, March 2022. Available at: <https://www.imf.org/en/Publications/Policy-Papers/Issues/2022/03/29/Review-of-The-Institutional-View-on-The-Liberalization-and-Management-of-Capital-Flows-515883>
3. Christine Lagarde, Opening address to the Conference on 'Challenges for Securing Growth and Shared Prosperity in Latin America', 5 December 2014. Available at: <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp120514>
4. Note the title of an IMF blog post on this advice: Tobias Adrian et al. 'Why the IMF is updating its view on capital flows', 30 March 2022. Available at: <https://www.imf.org/en/Blogs/Articles/2022/03/30/blog033122-why-the-imf-is-updating-its-view-on-capital-flows>
5. Arvind Subramanian, 'The case for structural financial deglobalisation', 28 October 2022. Available at: <https://www.project-syndicate.org/commentary/financial-deglobalization-emerging-developing-economies-federal-reserve-by-arvind-subramanian-2022-10>
6. Sebastian Edwards, 'Does the current account deficit matter?', in Sebastian Edwards and Jeffrey A Frankel (eds), Preventing currency crises in emerging markets, Chicago, IL: University of Chicago Press, January 2002. Available at: <https://www.nber.org/system/files/chapters/c10633/c10633.pdf>
7. For 2019, a simple average of the capital stock per capita was 31.7% for a sample of middle-income emerging markets, as compared to the United States. The sample comprises Brazil (28.61%), China (33.64%), Indonesia (30.63%), India (11.76%), Turkey (55.06%), South Africa (23.01%) and Mexico (39.37%). These data are sourced from the Penn World Tables and refer to investment as a GDP concept, not financial wealth.
8. This specific point was raised recently in a blog post by John Cochrane, 'Bob Lucas and his papers', 17 May 2023. Available at: <https://johnhcochrane.blogspot.com/2023/05/bob-lucas-and-his-papers.html>
9. For the period 2003-2023, using policy rates less annual inflation rates from the IMF's World Economic Outlook, the US real policy rate is -1.17%. The UK is -1.0%, while the euro area is at -0.87%. An average of Brazil, China, India, Indonesia, Mexico, South Africa and Turkey is 0.74%, with a high of 5.2% (Brazil) and a low of -3.36% (Turkey). South Africa is at 1.45%.
10. For an analytical discussion of capital flows out of Britain in the late 19<sup>th</sup> and early 20<sup>th</sup> century, see Michael A Clemens and Jeffrey G Williamson, 'Where did foreign capital go? Fundamentals, failures and the Lucas Paradox, 1870-1913', NBER Working Paper No. 8028, December 2000. Available at: [https://www.nber.org/system/files/working\\_papers/w8028/w8028.pdf](https://www.nber.org/system/files/working_papers/w8028/w8028.pdf)
11. Rochelle Belkar, Lynne Cockerell and Christopher Kent, 'Current account deficits: the Australian debate', Research Discussion Paper No. 2007-02, March 2007. Available at: <https://www.rba.gov.au/publications/rdp/2007/pdf/rdp2007-02.pdf>
12. Ian W McLean, Why Australia prospered, Princeton, NJ: Princeton University Press, 2013.
13. At the end of the 1980s, Australia had a fiscal surplus of 1% of GDP and a current account deficit of 6% of GDP.
14. The classic comparison is Argentina and Australia; see for instance Alexis Esposito and Fernando Tohmé, Drifting apart: the divergent development paths of Argentina and Australia. Germany: VDM Verlag: Saarbrücken, 2009.
15. South African balance of payments data are available from 1960. The average current account balance for 1960-2021 is -1.05% of GDP. The broad pattern, however, is for substantial deficits during the boom phases (the 1960s and early 1970s, and the 2000s) and minimal deficits or surpluses during periods of economic stagnation.
16. In the four years before 1985, the current account recorded an average deficit of 3.02% of GDP. In the four years from 1985, the current account recorded an average surplus of 3.75% of GDP.
17. For a fuller discussion of macroeconomic performance in this period, see Lesetja Kganyago, Address at the Centre for Education in Economics (CEE) Africa, 'Reflections of macroeconomics policy since 1995: from NICE to VICE – and back again?', 28 September 2022. Available at: <https://www.bis.org/review/r221006c.htm>
18. According to IMF World Economic Outlook data, it was 14.16% in 1993 and 16.47% in 1994.
19. For the period 2002Q1 to 2008Q4, portfolio flows averaged 1.27% of GDP, of which general government comprised 0.197 percentage points (pp), public corporations 0.004pp and all other flows 1.066pp. From 2010Q1 to 2019Q4, total portfolio flows averaged 2.9% of GDP, comprising 2.02pp for government, 0.22pp for public corporations and 0.65pp for all other flows.
20. For a discussion, see Adair Turner, Between debt and the devil, Princeton, NJ: Princeton University Press, 2016.
21. Daron Acemoglu, 'The great debt cleanup', 23 June 2020. Available at: <https://www.project-syndicate.org/commentary/plan-to-navigate-emerging-market-debts-by-daron-acemoglu-2020-06>. The full quote is as follows: "Far from checking autocrats, international finance has been facilitating them. For example, in South Africa between 2009 and 2018, foreign funds continued pouring in even after it was obvious that then-President Jacob Zuma's kleptocratic government was hollowing out the country's economy and institutions. When Zuma was finally kicked out of

power, it was because his own party, the African National Congress, took steps to remove him. The whip of international markets had little to do with it.”

22. Jón Daniélsson, *The illusion of control*, New Haven and London: Yale University Press, 2022. See for instance p. 252: “What is lacking [in financial regulation] is risk culture. The financial authorities could do well by learning from their counterparts in other fields, like aviation. The airline industry is regulated with a view to simultaneously maximise the benefits to society and keep risk under control, and we see the outcome. The cost of flying is steadily falling while safety gets better every year. The central banks and regulators need such a risk culture.”

23. For instance, see the comment: “The key challenge is macro risk management” in Tobias Adrian, ‘Policy responses to capital flows’, 11 October 2018. Available at: <https://www.imf.org/en/News/Articles/2018/11/15/sp101118-policy-responses-to-capital-flows>

24. For an IMF taxonomy of capital flow measures (and other comparable measures), see <https://www.imf.org/-/media/Files/Data/2020/update-of-imf-taxonomy-of-capital-flow-management-measures.ashx>

25. Consider, for instance, this summary: “Sovereign debt defaults and renegotiations have been the bread and butter of Latin American countries since the first defaults in the 1820s. During the first period of financial globalization (1820-1931) there are sixty-seven defaults across all countries from the richest, like Argentina, to the poorest, like Bolivia.” Graciella Laura Kaminsky and Pablo Vega-García, ‘Varieties of sovereign crises: Latin America, 1830-1921’, April 2014. Available at: [https://www.nber.org/system/files/working\\_papers/w20042/revisions/w20042.rev0.pdf](https://www.nber.org/system/files/working_papers/w20042/revisions/w20042.rev0.pdf)

26. The title of the IMF’s April 2023 Regional Economic Outlook for Sub-Saharan Africa is ‘The big funding squeeze’. Available at: <https://www.imf.org/en/Publications/REO/SSA/Issues/2023/04/14/regional-economic-outlook-for-sub-saharan-africa-april-2023>

27. The nine references to ‘fiscal’ contrast with 119 instances of ‘bank’; 33 of ‘house’, ‘housing’ or ‘household’; and 28 for ‘corporate’ or ‘corporations’. Of the fiscal instances, three are versions of advice to ‘adjust fiscal policy’. There is one mention of fiscal revenues as a comparator for the size of banks’ external assets; one comment on capital flow measures generating fiscal revenue; and one reference to fiscal policy as an incentive, among others, for locals to borrow in foreign exchange. There is one discussion of themes which would count as macro-critical and therefore relevant for IMF surveillance, with fiscal policy included on that list. There is one mention in the context of the different tools in the integrated policy framework. The last use of ‘fiscal’ is in the reference section. Similarly, work done by the IMF in 2011 on the capital flows toolkit has six references to ‘fiscal’ and 139 to ‘bank’ – see Jonathan Ostry et al., ‘Managing capital inflows: what tools to use?’, IMF Staff Discussion Note. 11/06, 5 April 2011. Available at: <https://www.imf.org/external/pubs/ft/sdn/2011/sdn1106.pdf>

28. This point was made strongly by IMF leadership over two decades ago – see Anne Krueger, ‘The evolution of emerging market capital flows: why we need to look again at sovereign debt restructuring’, 21 January 2002. The design of the mechanism might have been suboptimal, but the issue is still here with us. Available at: <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp012102>

29. David Malpass, ‘Remarks by World Bank Group President David Malpass at the Breaking the Impasse on Global Debt Restructurings Conference’, 26 April 2023. Available at: <https://www.worldbank.org/en/news/speech/2023/04/26/malpass-president-breaking-impasse-global-debt-restructurings-conference>

30. See, for instance, the discussion by the IMF, ‘Clarifying the concept of reserve assets and reserve currency’, BOPCOM?15/14, 27?29 October 2015. Available at: <https://www.imf.org/external/pubs/ft/bop/2015/pdf/15-14.pdf>

31. Laura Alfaro and Fabio Kanczuk, ‘Debt redemption and reserve accumulation’, IMF Economic Review 67(2), June 2019. Available at: [https://www.hbs.edu/ris/Publication%20Files/redempt180504\\_6.21.18\\_da35aab6-70e6-4893-b94c-94ea6ac519c1.pdf](https://www.hbs.edu/ris/Publication%20Files/redempt180504_6.21.18_da35aab6-70e6-4893-b94c-94ea6ac519c1.pdf)

32. César Sosa-Padilla and Federico Sturzenegger, ‘Does it matter how central banks accumulate reserves? Evidence from sovereign spreads’, NBER Working Paper No. 28973, June 2021. Available at: <https://www.nber.org/papers/w28973>

33. Agustín Samano ‘International reserves and central bank independence’, Policy Research Working Paper No. 9832, 2021. Available at: <https://openknowledge.worldbank.org/handle/10986/36483>

34. Olivier Jeanne and Damiano Sandri, ‘Global financial cycle and liquidity management’, BIS Working Papers No. 1069, January 2023. Available at: <https://www.bis.org/publ/work1069.pdf>

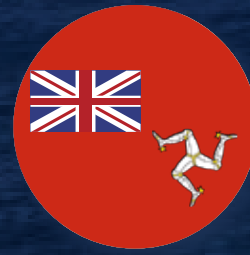
35. This point is also well made by World Bank Chief Economist Indermit Gill in his foreword to the June 2023 Global Economic Prospects: “... long before the outbreak of the pandemic, governments across the world had developed an appetite for huge budget deficits. They turned a blind eye to the dangers of rising debt-to-GDP ratios. If a lost decade is to be avoided, these failures must be corrected—now, not later.” (The reference to “These failures” includes reduced support for free trade as well as large fiscal deficits.) Available at: <https://openknowledge.worldbank.org/server/api/core/bitstreams/6e892b75-2594-4901-a036-46d0dec1e753/content>

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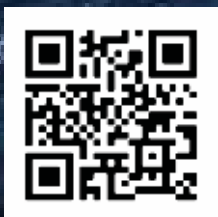


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# The role of IFCs in the changing world

Elise Donovan is the CEO of BVI Finance

**T**he world of international commerce is currently spinning on an increasingly unpredictable axis. Mounting geopolitical tensions are remodelling globalisation and increasing barriers to trade.

Despite the growing disruption, globalisation isn't dead; crossborder trade is deeply embedded in the DNA of countries across the globe even if its pace and trajectory have shifted.

International finance centres (IFCs), such as the British Virgin Islands (BVI), have an essential role to play in this shifting landscape; their experience and expertise will continue to ensure that crossborder investment and trade can take place with the minimum of holdups.

Their ability to create a neutral environment will also help drive collaboration, which will be especially useful for areas of emerging economic importance, such as the Caribbean and

Latin America, in which growing sectors of green finance and digital assets are flourishing.

## Developing scenarios

The *Beyond Globalisation: The British Virgin Islands' Contribution To Global Prosperity In An Uncertain World* report, commissioned by BVI Finance and developed by the UK-based research firm, Pragmatix Advisory, offers insights into these changes.

It identifies three potential scenarios for the future of international trade:

1. **Weaker Internationalism:** A continuation of globalisation, albeit at a slower pace, with challenges to overcome.
2. **Bloc Economy:** Economic and regulatory integrations form based on varying geopolitical alliances.



**3. Economic Nationalism:** Countries could move away from globalisation, adopting more protectionist stances.

Regardless of the predominant scenario, IFCs, especially like the BVI, will be crucial to uphold the pillars of international trade, investment, and business.

### **Leadership in ESG**

There is an increasing global realisation that it is impossible to consider the future of investment and finance trends without considering the challenges created by climate change, a view very much shared by the BVI.

In addition, institutional investors and regulators around the world are increasingly focusing on environmental, social and governance (ESG) issues in terms of developing investment portfolios and designing corporate best practices. The good news is that BVI companies provide a flexible, internationally recognised corporate regime that supports ESG-related goals.

The incentive to tackle the damaging impact of climate change hits particularly close to home for the BVI. The small island state's delicate ecology is especially at risk from hurricanes, changes in tidal patterns, and heavy rainfall. Its tourism industry and the jobs that rely on the visitor economy are threatened by extreme weather events, erosion, and coral and sargassum bleaching.

This experience has helped the BVI, and other IFCs in the region, understand the role of green finance and the need to respond to the climate emergency, making them well-placed as a centre for environmental investment and green funds, both across the Caribbean and the globe.

*“Unquestionably, the new global challenges and opportunities of next-generation technologies and climate change make the role of IFCs even more vital”*

Addressing this issue will require an investment of more than \$100 billion, equal to around a third of its annual economic output. In addition, with electricity largely generated using fossil fuels, energy prices in the Caribbean are among the highest in the world, highlighting the need for investment in lower-cost and lower-carbon emissions.

There's also a requirement for blue finance, which is where sustainability-linked loans or bonds directly finance projects and programmes that have positive impacts on the ocean economy, an essential part of the Caribbean's commercial activities.

Just prior to COP27, President Macron hosted a summit in Paris to discuss reform of the world's multilateral finance institutions in the face of climate change and other development challenges. A key topic of discussion was a suggestion from a group of developing countries, led by Barbados, dubbed the 'Bridgetown Initiative', which called for the creation of new instruments and reform of existing



institutions to finance climate resilience and the Sustainable Development Goals (SDGs).

The Caribbean region has the ability and motivation to become a true global leader in this area, working collaboratively across jurisdictions to make real change.

For example, the BVI has established one of the first Climate Change Trust Funds in the Caribbean, allowing it to receive funding for climate-related projects and to explore how it can maximise the impact of funding. This demonstrates how knowledge and experience in international finance and investment in the region can be harnessed to enable progress in the sector.

### **Developing digital assets**

The BVI is not only ideally situated to cater to financial markets aimed at sustainability, it is also well-placed to serve new and developing digital assets.

The total addressable market for digital assets is expected to be worth between \$8 trillion and \$13 trillion by 2030, while the value of the global sustainable fund market could be almost fifty times greater by the end of the decade.

Keeping pace with these developments has meant that the BVI evolved and innovated in order to maintain its relevance and position in global markets. This remains an ongoing task as developments in technology and digital assets continue to evolve.

Measures are therefore being taken to welcome, regulate and support new technologies and the opportunities they bring, while legislation has been implemented to both encourage and manage the growth of digital asset holdings in the jurisdiction.

The introduction of the VASP (Virtual Asset Service Providers) legislation earlier this year showcases the jurisdiction's commitment to evolving digital finance needs, emphasising both innovation and regulatory robustness.

### **Pan-global trends**

Digital assets aren't geographically anchored; part of a trend in investment that helps characterise the current period of globalisation. The BVI is an integral part of this movement because of its ability to facilitate crossborder investment – a key characteristic of its global approach.

Also, by keeping up-to-speed with technological advances, the BVI aims to maximise its standing as a viable international business and finance centre.

Also, as a result of the ongoing expansion of digital connectivity and remote ways of working, geographical barriers continue to tumble. This makes the BVI's financial services industry and the facilities it provides, accessible to clients all around the world. As investors in developing markets look to expand their portfolios across borders, the BVI is ideally placed to meet those needs.

These developments are also changing how and where people work, many kickstarted by the pandemic. This has created digital nomads; people who can work from almost anywhere in the world.

For those with no fixed base or non-geographical wealth, it makes sense to choose a location with neutral taxation in which to hold their assets. As a tax-neutral jurisdiction used for crossborder operations, the BVI is perfectly placed to meet the needs of digital nomads.

### **Private wealth management**

The services offered by the BVI attract the business of expatriates and internationally mobile individuals with a high net worth who see the BVI as a suitable location to hold and manage assets, as it provides benefits and optionality unavailable in many other IFCs.

As a result, the BVI is one of the world's leading destinations for private trust companies, the most comprehensive and sophisticated succession planning vehicles, with over a thousand on its register.

The jurisdiction's long-established reputation as a safe and secure location to domicile personal wealth and assets is highly significant as we will soon see the greatest ever generational wealth transfer; US households are expected to pass \$68 trillion in assets to their children over the next 30 years.

This presents a challenge for wealth managers, as just 13% of younger investors retain the same financial advisors as their parents. The BVI's standing will help to ensure that it will remain attractive to inheriting millennials.

### **Looking to the future**

Research from the *Beyond Globalisation* report found there are currently over 370,000 active BVI Business Companies, holding assets with a combined estimated value of US\$1.4 trillion.

Furthermore, these companies generate an estimated \$14 billion each year in taxes for governments worldwide and support around 2.3 million jobs globally.

To maintain this trajectory, the BVI must be nimble, continuously adapting to global nuances.

A key part of this will be understanding how deglobalisation and fragmentation will affect access to markets during a period of uncertainty and demonstrating how IFCs can contribute to this new landscape.

Although the future is uncertain – it is presently unclear which, if any, of the three international trade scenarios will become dominant – it is clear that the role and value of IFCs will continue beyond the current turbulence.

Unquestionably, the new global challenges and opportunities of next-generation technologies and climate change make the role of IFCs even more vital. ■





## Tax for climate finance should start with shipping

**Pascal Saint-Amans is a Non-Resident Fellow at Bruegel**

**T**he Bridgetown initiative, a climate finance plan for developing countries launched by Barbados prime minister Mia Mottley in 2022, inspired the Summit for a New Global Financial Pact, held in Paris on 22-23 June.

The more than 40 leaders in attendance, including German Chancellor Scholtz, Chinese Premier Li Qiang and Brazilian President Lula, revived discussions on financing the energy transition in the South together with the fight against poverty.

They confirmed the reallocation of \$100 billion of International Monetary Fund Special Drawing Rights and agreed on the need for multilateral development bank reform to mobilise more public and private funds. There was also agreement on the need to work further on international tax.

What could sound like a vague commitment on tax might actually deliver a concrete outcome if a few conditions are met. To all economists, carbon taxation is the first-best candidate for an international tax to finance the energy

transition. With only 40% of global carbon emissions priced, at an average worldwide price below €5 per tonne, a global carbon tax is long overdue.

However, the political economy of the reform makes it impossible in the current circumstances (France's *gilets jaunes* movement is the poster child of the opposition to carbon pricing).

The Paris summit also floated briefly the idea of moving carbon taxation upstream to the point of fossil-fuel production, before rejecting it as a no-go.

One carbon tax might work, however. It was discussed in preparation for the summit but not mentioned explicitly in the outcome statement: a tax on carbon emissions from the shipping industry. Countries should give it a chance for three reasons.

First, global shipping is a crossborder activity that has both benefited from and contributed to globalisation, and is a



significant contributor to overall emissions, representing almost 3% of global emissions, while all of Africa contributes 4%.

Second, this industry currently pays no tax on its carbon emissions. The fuel is completely tax free. No excise duties, no carbon tax. Moreover, shipping companies are not subject to regular corporate income tax anywhere in the world at a time when their profits have reached unprecedented levels.

Third, very little progress has been made on improving the carbon efficiency of shipping fuel and shipping is in fact falling behind its own commitments. The International Maritime Organisation's net zero ambitions are not aligned with the Paris Agreement, and negotiations at the IMO on the path towards carbon neutrality by 2050 are stalled.

If properly orchestrated, global agreement on an international tax can happen, as shown by the deal reached by 137 countries in October 2021 establishing an effective 15% global minimum tax (even though the shipping industry is the only one carved out from this agreement). A tax on carbon emissions from shipping could follow the same path, with a few essential steps.

There should be a top-down approach, in the form of a message from leaders to their delegates at the IMO to empower them to deliver meaningful progress. The Paris statement of outcomes could have been more explicit but it is not too late. The design should ensure impact even if not all countries implement.

*“The design should ensure impact even if not all countries implement. The 15% global minimum tax does not require all countries to implement; rather only a critical mass is required for it to have an impact”*

The 15% global minimum tax does not require all countries to implement; rather only a critical mass is required for it to have an impact. This pushes the slow movers, so that it is not just the first movers that accrue the revenues.

A first step has already been taken with the European Union including shipping emissions in its emissions trading system (ETS). In 2026, half of the emissions related to shipping to and from Europe will be in scope of the ETS.

The EU should seek allies to build a critical mass of countries, or of subnational governments where the large ports are located. It might be easier to convince the states of New York and California, than negotiating with the US as a whole.

Negotiations at the IMO will soon resume. The EU coalition to build out taxation of shipping emissions should start with small island states, like the Marshall Islands, under threat of disappearance because of rising sea levels. Together, they could open up a new route for international taxation. ■

*This article was first published on Bruegel.*



# Impact of CBAMs on the Indian metals sector



**Nikhil Joshi is an Intern and Researcher at CII, and Geethanjali Nataraj an independent trade economist**

## Introduction

Carbon Border Adjustment Mechanism (CBAM) is among the potential policy measures to address the critical issue of carbon leakage across the world. A CBAM functions by imposing a levy on imported goods based on their carbon content, which is determined by evaluating the greenhouse gas emissions associated with the production process.

The goal is to harmonize the carbon costs between domestic and imported goods, thereby preventing carbon leakage. This approach ensures that imported goods face a comparable carbon cost to domestic goods, thereby reducing the competitive disadvantage faced by domestic industries operating under more stringent climate regulations.

The European Parliament on April 18, 2023, approved legislation to implement the CBAM as part of the EU's Green Deal, which aims to reduce greenhouse gas emissions by 55 per cent by 2030.

Accordingly, commencing on October 1, 2023, enterprises that export steel and aluminium to the EU are obligated to

establish robust monitoring systems that quantify the carbon intensity inherent in their production processes.

Additionally, they must furnish comprehensive reports detailing this measured carbon intensity. Although several other industries, such as cement, fertilizer, and electricity, are also encompassed by this regulation, their relevance to India's exports to the EU is negligible.

Subsequently, starting from January 1, 2026, exporting companies operating within the EU jurisdiction will be mandated to provide CBAM certificates.

These certificates serve as a mechanism to bridge the discrepancy between the carbon pricing paid in the country of production and the prevailing price of carbon allowances within the EU Emissions Trading Scheme.

However, there is criticism, particularly from developing countries like India that the CBAM is a trade-restrictive policy and India has also taken this matter to the WTO.





The UK is also considering moving along the same lines as the EU and the Government initiated a comprehensive consultation encompassing various interconnected policies, including CBAM, mandatory product standards (MPS) relating to embodied emissions, additional measures aimed at stimulating the demand for low-carbon products, and emissions reporting. The consultation period lasted 12 weeks and concluded in June 2023.

The UK is mulling to cover all sectors and products eventually under the proposed measures. It is also looking at emission measurement, CBAM price measurement, and the timing and manner of introduction of these measures.

One proposed option is to initially introduce the UK CBAM for a select number of sectors and then gradually expand its coverage in a phased approach.

As set out in the consultation, the UK Government intends to proceed to introduce embodied emissions reporting in 2025. This would be followed by a phased implementation of the CBAM in 2026 in conjunction with reforms to the UK ETS allocation of free allowances.

For the UK, any MPS would only be introduced following successful pilots in the late-2020s. The steel industry of the UK has also supported the move towards a CBAM, as it fears that if the UK is not aligned to the EU standards, non-EU steel, made commercially unviable in the EU due to the CBAM, will flood the UK markets at lower costs and adversely impact the domestic steel industry.

Other countries are also considering the EU CBAM as starting point for their efforts to adopt a direct Carbon price, such as Ukraine, Uruguay, and Taiwan, China.

#### **Possible impacts**

The steel industry is considered a sector that is difficult to

*“To maintain competitiveness globally and mitigate the impact of the measures to address carbon leakage, it is important for India to prepare a comprehensive response including possible retaliatory measures”*

decarbonize and currently accounts for around eight per cent of global emissions.

According to the International Energy Agency (IEA), carbon emissions from this sector have risen in the past decade, primarily due to the growing demand and the energy required for steel production.

The introduction of potential policy measures to address carbon leakage is expected to present a substantial challenge to India’s metals sector as India is still coal-dependent for 55% of its power needs.

The policy measures to address carbon leakage that will be applied in the EU and will potentially be applied in the UK from the mid-2020s onwards; including a CBAM; MPS; and other demand-side measures to grow the market for low-carbon industrial products could have an adverse economic impact on India’s exports of energy-intensive products like steel, aluminium, cement, and fertilizers.

Indian manufacturers have expressed apprehensions regarding the imposition of a tax that could potentially lead to a significant tariff ranging from 20% to 35% on India’s exports of steel, aluminium, and cement.



Presently, these exports incur a duty of less than 3%. This tax measure could have a considerable impact, as approximately 27% of India's total exports of steel, iron, and aluminium products, amounting to \$8.2 billion, are destined for the European Union and India's exports of articles of iron or steel to the United Kingdom amounted to US\$359.1 million in 2022 (COMTRADE).

India's overall export of CBAM commodities, which include iron and steel (\$5,083.7 million), aluminium (\$2,679.7 million), fertilisers (\$0.64 million), and cement (\$0.04 million), collectively constitute approximately 8 per cent of India's total exports to the EU during the fiscal year 2022-23.

Over the preceding five-year period, the export of CBAM goods from India to the European Union has demonstrated a surge of 84 per cent, rising from \$4.2 billion in the fiscal year 2018-19 to \$7.8 billion in the fiscal year 2022-23.

The process of primary aluminium production is known for its high energy consumption, and in India, the utilization of coal-based power plants results in elevated greenhouse gas (GHG) intensity compared to their European counterparts.

During the initial phase of the CBAM, Indian exports to the EU are anticipated to remain steady, as domestic manufacturers adhere to stringent GHG reporting standards that fulfil the requirements until the end of 2025.

Nevertheless, once tariffs are enforced from 2026 onwards, Indian primary aluminium producers will be compelled to procure ETS certificates for emissions that surpass the allocated free allowance, subsequently leading to increased costs.

At present, there exists a disparity in emission intensity between Europe and India, which equates to potential additional costs of around \$1,500 per tonne.

The resulting cost differential is expected to render Indian exports economically unfeasible in the European market, particularly when compared to competitors, who boast significantly lower emissions, as it would be very difficult for domestic manufacturers to achieve a 25% reduction in emissions intensity by 2030.

Another significant challenge for India is the absence of a domestic emissions trading system. This absence may make it difficult for Indian firms to show that their products are produced using low-carbon technology, leading to higher charges resulting in higher prices, reduced competitiveness, and decreased demand.

Several companies have already set targets to reduce emission intensity to levels more comparable to the current global average by the end of this decade.

However, the adjustment process would require substantial investments and may pose challenges in terms of technological upgrades and operational changes. The impact of these potential policy measures to address carbon leakage

will not be limited to steel and downstream steel products alone.

Upstream sectors, including iron ore, will also be affected. However, the emission intensity of iron ore is relatively low, suggesting that its inclusion under the potential policy measures to address carbon leakage should have minimal impact on trade flows.

The UK Government had sought inputs on how to address the trade concerns that are likely to arise with the introduction of the CBAM, such as the treatment of developing country exports, including those from India.

The concerns are that exempting high-carbon intensity products from developing countries could undermine net zero objectives but not doing so could undermine development objectives. Another concern is that post-imposition of the new regime, India is likely to become vulnerable to the dumping of steel items by various countries.

In the context of India's journey towards climate transition, domestic companies have embraced renewable energy sources, either in the form of captive generation or through purchasing from external sources for two primary reasons: firstly, the superiority of renewable energy in terms of cost-effectiveness and reliability compared to traditional grid-based power; and secondly, the increasing pressure from Environment, Social, and Governance (ESG) investors who advocate for decarbonization measures.

The emergence of the CBAM in Europe, and potentially in other advanced economies such as the UK, presents a third influential factor that encourages a greater emphasis on renewable energy adoption by Indian firms.

In response to this, companies in India may identify specific production locations that offer more favourable conditions for procuring unrestricted and affordable renewable electricity. Such favourable conditions may arise due to either the leniency of distribution companies in their renewable energy policies or the physical accessibility to the Inter-State Transmission System.

This growing preference among exporters to procure renewable energy, therefore, has the potential to stimulate increased investments in renewable energy infrastructure within India.

### **Conclusion and way forward**

To maintain competitiveness globally and mitigate the impact of the measures to address carbon leakage, it is important for India to prepare a comprehensive response including possible retaliatory measures as well as explore carve-outs for certain sectors/goods and MSMEs with the EU, and possibly the UK if it implements an CBAM.

These could include exemptions, or longer timeframes as well as technical assistance and financial support for compliance. India should also continue to oppose the discriminatory provisions of the CBAM.



If left unopposed, there exists a potential peril wherein the EU could progressively broaden the scope of its designated product range in the forthcoming years, a direction that their official stance appears to indicate.

Beyond the potential trade distortions, a concern surrounding the CBAM mechanism pertains to funding the transition towards the adoption of less carbon-intensive production methods, particularly within the realms of least developed and emerging economies.

Considering the EU's leadership role in ambitious global climate targets, it is an opportune moment to remind the EU of its prior commitment to contribute \$100 billion annually to facilitate developing economies in financing their climate-focused initiatives.

Indian companies can adopt various strategies to minimize the impact of the potential policy measures. One approach is to invest in renewable energy sources and energy-efficient technologies to decrease carbon emissions, consequently reducing the tax burden under the CBAM.

Another strategy involves optimizing supply chain processes to lower the carbon footprint of their products. Additionally, India is laying the groundwork for establishing a carbon market.

The Ministry of Power released a draft of the Carbon Credits Trading Scheme (CCTS) on March 27, 2023, which outlines the institutional framework and operational mechanisms that will govern the future carbon credit market in India.

The Indian government is seized of the matter and has termed CBAM 'unjustifiable discrimination' on developing nations and that it is being 'selectively applied' to sectors that are in foreign trade in turn impacting their competitiveness.

While considering retaliatory measures against similar measures by the EU, India had pitched for mutual recognition of its carbon certificates as well as recognition of India's proposed Carbon Credit Trading System. India is also looking at promoting carbon auditors.

Moreover, India has sought special treatment for its MSMEs as almost half of such companies will be affected by CBAM. The Indian steel industry, among the CBAM-impacted sectors, is taking initiatives to switch to being renewable energy-powered and to green manufacturing processes.

The EU, which deems CBAM as not protectionist but a measure to fight climate change, has shown a willingness to collaborate with India to reduce the 'administrative burden' on businesses for CBAM compliance.

India must therefore implement a carbon pricing mechanism and advance the development of low-carbon technologies. These measures will assist Indian businesses in complying with potential policy measures to address carbon leakage and reduce the carbon intensity of their products.

Furthermore, India should re-evaluate its export strategy and explore alternative markets where its products can remain competitive if the potential policy measures to address carbon leakage are implemented. ■

*The views are personal and cannot be attributed to the organization to which the authors belong.*



# The economic effects of carbon pricing



**Diego Känzig is an Assistant Professor at Northwestern University, and Maximilian Konradt is a PhD student at the Geneva Graduate Institute (IHEID)**

**C**arbon pricing policies are increasingly used as a tool to mitigate climate change. While there is mounting evidence on the effectiveness of such policies for emission reductions (eg. Martin *et al* 2014, Andersson 2019), less is known about their economic effects.

In this column, we provide new empirical evidence on the aggregate and regional impacts of carbon pricing, drawing on our recent research on the European experience (Känzig and Konradt 2023).

There are two main climate policy tools in Europe. The cornerstone to combat climate change is the EU Emissions Trading System (EU ETS). However, many European countries have also enacted national carbon taxes to complement the common carbon market.

We assess the dynamic effects of both policies in a unified empirical framework to be able to attribute any potential differences to policy design.

Specifically, we estimate a panel model of European countries and identify the effects of carbon pricing by controlling for global and local macro-financial conditions in addition to country fixed effects, building on the approach by Metcalf and Stock (forthcoming).

For the carbon market, we also employ the high-frequency strategy proposed in Känzig (2023) and find that the two approaches produce comparable results.

Our findings suggest that while both policies have successfully reduced emissions, the economic costs of the European carbon market are larger than for national carbon taxes, leading to a stronger fall in GDP and a sharper rise in unemployment.

To account for the differential effects, we evaluate the role of (1) fiscal policy and revenue recycling, (2) pass-through and sectoral coverage, (3) spillovers and leakage, and (4) monetary policy. We find that all four played a significant role.

Lastly, we study the heterogeneous effects of the common carbon market on European countries. Our results imply

substantial differences in the economic impacts of a similarly sized carbon shock across European countries, depending on the share of freely allocated emission permits and the degree of market concentration in the power sector.

## **The effects of Europe's carbon pricing initiatives**

The EU ETS is one of the largest carbon markets in the world and accounts for over 40% of the bloc's total emissions. It covers the most carbon-intensive sectors, such as the power sector and heavy-emitting industrial sectors.

Figure 1 shows the estimated responses to a euro increase in the coverage-weighted carbon price on emissions and the economy. We see that higher carbon prices lead to a significant increase in energy prices and a persistent fall in emissions.

However, this does not come without a cost. Output falls persistently and consumer prices increase, along with a rise in the unemployment rate. These results are broadly consistent with the findings in Känzig (2023), even though the responses are estimated to be somewhat more persistent.

In addition to the EU-wide carbon market, many European countries enacted national carbon taxes to further reduce emissions. These taxes cover sectors and industries that are not part of the emissions trading scheme, such as the transportation and buildings sectors as well as smaller, less energy-intensive industries.

Since taxes vary in scope and ambition, we focus on a more homogenous sample of Western and Northern European countries.

How do the empirical effects compare between the two types of policies? Figure 2 shows a similar fall in emissions following a euro increase in the coverage-weighted carbon tax. The increase in energy prices is more muted, however, and there is little pass-through to overall consumer prices.

Further, we find only modest impacts on GDP, industrial production, or unemployment, corroborating the findings of Metcalf and Stock (forthcoming) and Konradt and Weder di Mauro (2021, forthcoming).

### What explains the different effects?

What can explain the differential economic effects of carbon prices and carbon taxes? We shed light on four factors, which all play a role. First, unlike the EU ETS, national carbon taxes are frequently implemented alongside broader fiscal reforms that potentially cushion some of the burdens for firms and households.

To show this, Figure 3 separately estimates impulse responses for countries that indicated an intention to recycle carbon tax revenues. We see that the adverse economic effects are more pronounced in countries that do not recycle tax revenues, displaying a stronger fall in output and an increase in unemployment.

However, these differential impacts cannot be uniquely attributed to revenue recycling as non-revenue recycling countries also display a somewhat stronger response to energy prices.

Interestingly, the emission responses turn out to be comparable, suggesting that redistributing tax revenues can lower economic costs without compromising emission reductions.

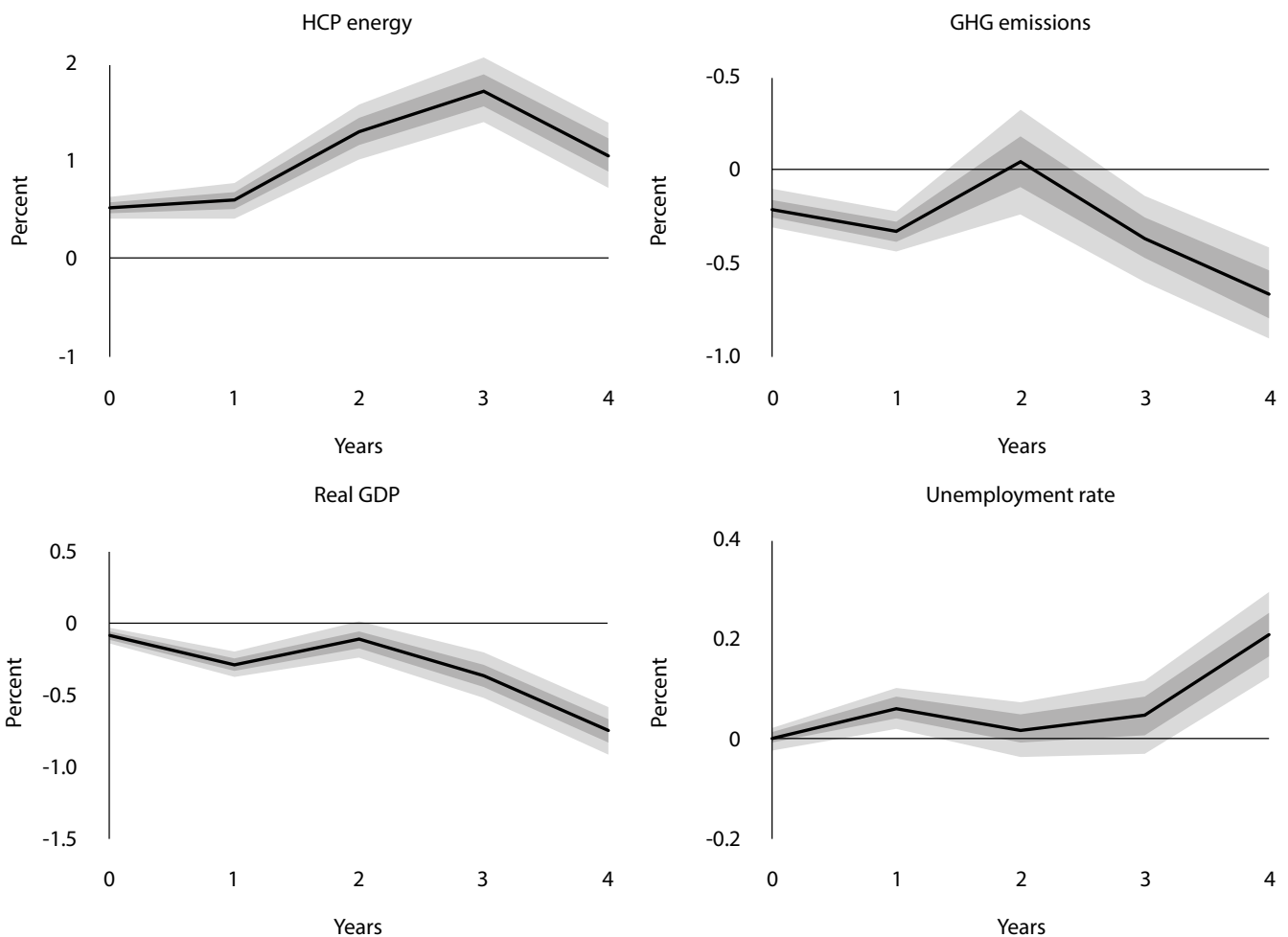
*“Carbon pricing policies in Europe have been successful at reducing emissions but can come at economic costs that are borne unequally across different regions”*

Second, an important distinction between the two carbon pricing initiatives relates to the type of sectors that are covered. Since energy-intensive firms likely pass through a larger fraction of emission costs (Fabra and Reguant 2014), prices could be more affected by the EU ETS, which covers the heaviest emitters.

Indeed, we document a significant response of energy, consumer, and producer prices after an increase in EU ETS prices while the price responses after an equivalent increase in carbon taxes are small and insignificant.

Third, the broader scope of the ETS implies that countries experience simultaneous price changes, limiting the role of

**Figure 1. The effects of an increase in EU ETS carbon prices**



Notes: Impulse responses to an innovation in the ETS carbon price, normalized to increase real coverage-weighted carbon prices by one euro. The solid line is the point estimate and the dark- and light-shaded areas are 68 and 95 per cent confidence bands.

potential cushioning effects with unaffected trade partners or carbon leakage to third countries, compared to national carbon taxes. Consistent with this view, we estimate that only ETS prices significantly reduce overall EU emissions.

Lastly, monetary policy could also play a role in accounting for the differential impacts. Carbon policy-induced changes in consumer prices could trigger a policy reaction by the ECB, further reinforcing recessionary effects.

Conversely, one would not expect a monetary response to national carbon taxes, especially given the limited price pressure associated with these policies. Our estimates support this view: while interest rates rise significantly after an increase in ETS prices, the response to a carbon tax increase is estimated around zero and insignificant.

**Regional heterogeneity**

Although all European countries are faced with common carbon price changes in the ETS, the transmission likely depends on country characteristics.

We focus on the share of freely allocated emission certificates (relative to total emissions) and the degree of market

concentration in the power sector as possible transmission channels. The former affects the costs that local firms incur to offset emissions while the latter likely influences the strength of pass-through to energy prices.

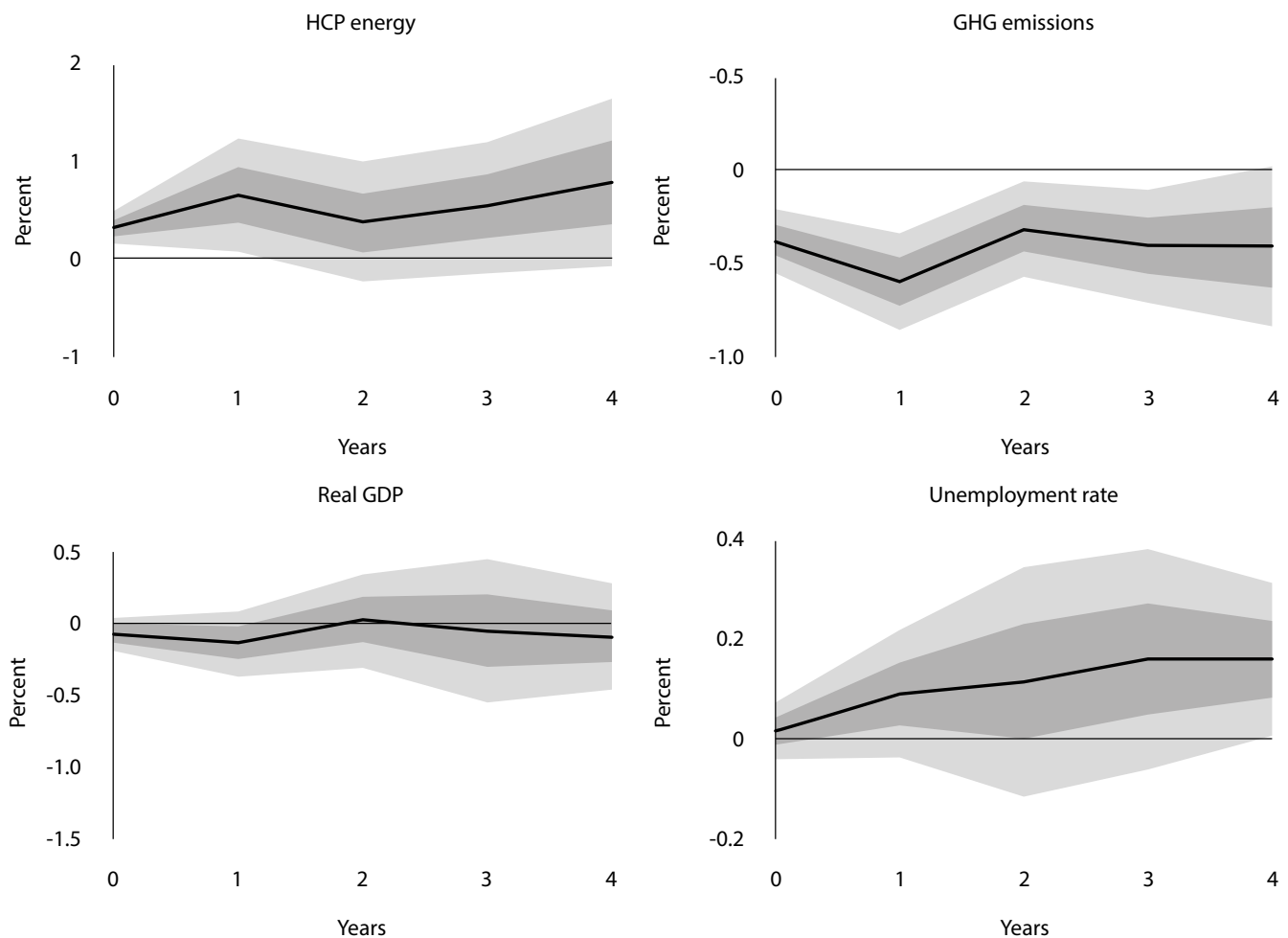
Figure 4 illustrates the effects on output based on the carbon price shocks identified in Känzig (2023), normalized to increase the HICP energy component by one per cent on impact.

We see that a greater share of free allowances substantially dampens the output response (Panel A). Similarly, Panel B shows that higher concentration in energy markets is associated with a stronger negative effect on economic activity, as the energy price response turns out to be more pronounced.

Interestingly, the fact that free allowances were disproportionately allocated to the poorest member countries implies that they are largely insulated from the economic costs associated with carbon pricing.

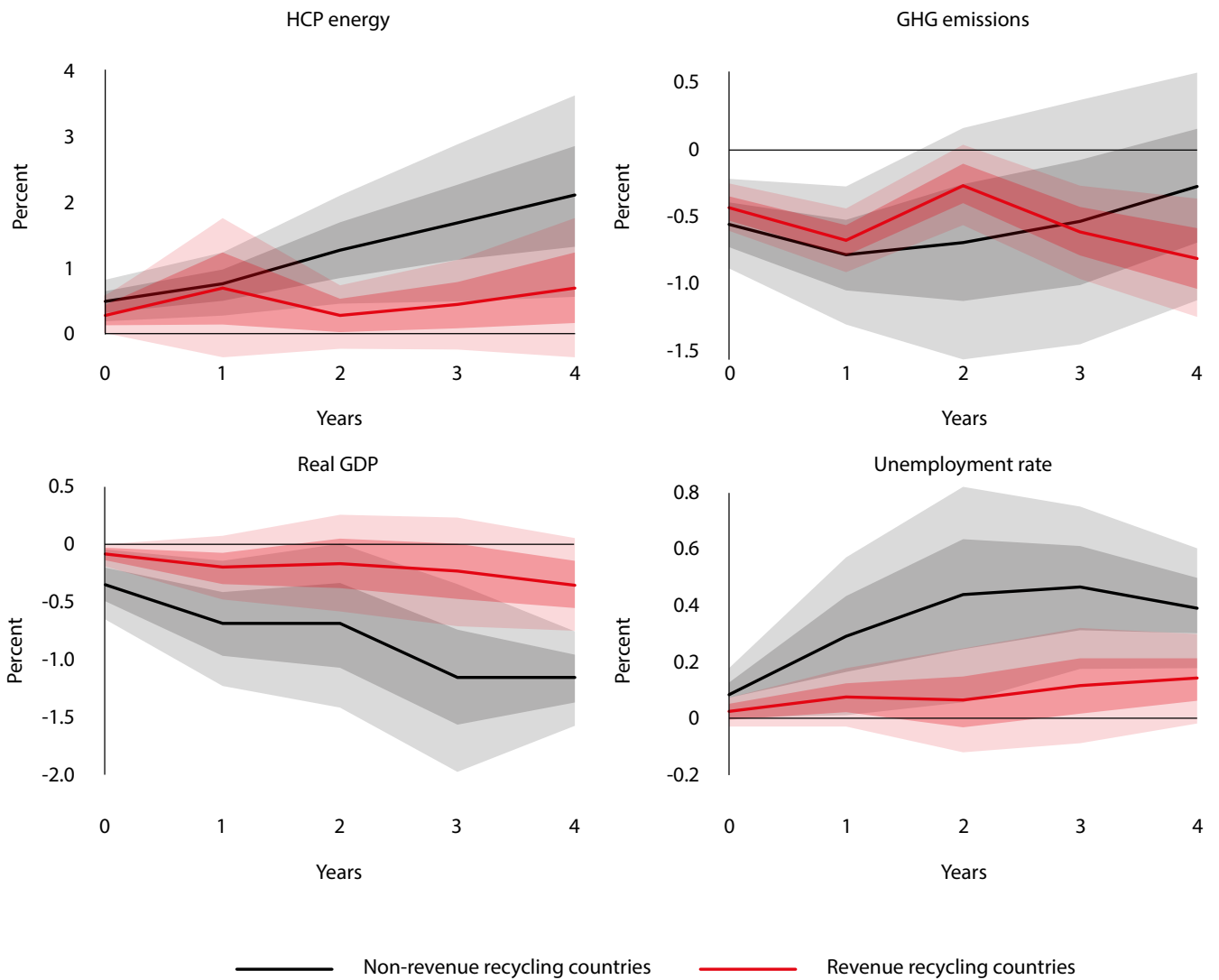
Instead, our findings suggest that countries in the second quartile of the per capita income distribution are most affected by the carbon market.

**Figure 2. The effects of an increase in European carbon taxes**



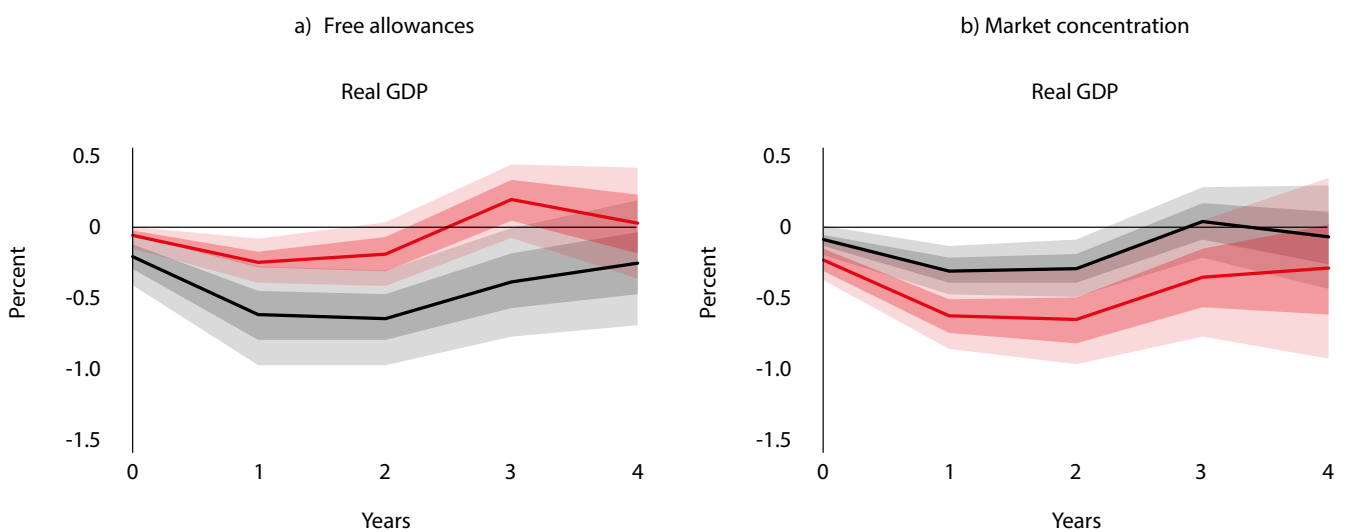
Notes: Impulse responses to an innovation in European carbon taxes, normalized to increase real coverage-weighted carbon taxes by one euro. The solid line is the point estimate and the dark- and light-shaded areas are 68 and 95 per cent confidence bands.

**Figure 3. The role of revenue recycling**



Notes: Impulse responses to a carbon tax innovation in revenue (red line) and non-revenue recycling (black line) countries. The dark- and light-shaded areas are 68 and 95 per cent confidence bands.

**Figure 4. Regional effects of the EU ETS**



Notes: Impulse responses to a carbon price shock at the mean in grey and with one standard deviation higher share of free allowances to total emissions (panel A) and higher concentration in the power sector (panel B) in red. The black/red line is the point estimate and the dark- and light-shaded areas are 68 and 95 per cent confidence bands.



### Concluding remarks

Carbon pricing policies in Europe have been successful at reducing emissions but can come at economic costs that are borne unequally across different regions.

Our results from contrasting the EU ETS with national carbon taxes suggest that the recycling of carbon revenues is a key

policy tool that can mitigate the potential adverse economic effects of carbon pricing.

However, any complementary fiscal policies should also take the sectoral composition and strength of pass-through into account. ■

#### References

- Andersson, JJ (2019), "Carbon Taxes and CO<sub>2</sub> Emissions: Sweden as a Case Study", *American Economic Journal: Economic Policy* 11(4): 1–30.
- Fabra, N and M Reguant (2014), "Pass-through of emissions costs in electricity markets", *American Economic Review* 104(9): 2872–99.
- Känzig, DR, (2023), "The unequal economic consequences of carbon pricing", NBER Working Paper No. w31221.
- Känzig, DR, (2023), "Climate policy and economic inequality", VoxEU.org, 25 Jun.
- Känzig, DR and M Konradt (2023), "Climate Policy and the Economy: Evidence from Europe's Carbon Pricing Initiatives", NBER working paper No. w31260.
- Konradt, M and BW di Mauro (2021), "Carbon taxation and inflation: Evidence from Europe and Canada", VoxEU.org, 29 Jul.
- Konradt, M and BW di Mauro (forthcoming), "Carbon Taxation and Greenflation: Evidence from Europe and Canada", *Journal of the European Economic Association*.
- Martin, R, LBD Preux and UJ Wagner (2014), "The impact of a carbon tax on manufacturing: Evidence from microdata", *Journal of Public Economics* 117: 1–14.
- Metcalfe, GE and JH Stock (forthcoming), "The Macroeconomic Impact of Europe's Carbon Taxes", *American Economic Journal: Macroeconomics*.

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# If we want to achieve the SDGs, we need to rethink leadership

**The SDGs challenge conventional approaches to leadership. Willem Fourie rethinks the heroic bias in leadership**



**T**here is an increasing awareness in business schools and beyond that we need to take the 17 Sustainable Development Goals (SDGs) seriously. But how to truly integrate these goals into what we teach and research remains up for discussion.

As somebody who is involved in both the worlds of SDGs and leadership scholarship, I am beginning to understand how the SDGs can help us change the way we teach leadership. Simply put, the SDGs require us to rethink the heroic bias in how we teach and research leadership.

Most people in business schools are well aware of the heroic bias in leadership studies: the often untested assumption that good leaders are exceptional and charismatic individuals with a higher level of agency than other people.

This heroic bias is, of course, not surprising. The earliest reflective work on leadership, such as the books by Thomas Carlyle and the controversial Francis Galton, explicitly depicted leaders as being qualitatively different from their followers.

The heroic bias, or at least an emphasis on individual leaders who have the exceptional capability to inspire followers by selling a great vision, continues to permeate many of our approaches to leadership. Even transformational leadership theory, probably the most-researched contemporary leadership theory, paints leaders in individualistic and heroic terms.

The SDGs, and the 2030 Agenda for Sustainable Development in which they are embedded, challenge such conventional approaches to leadership in at least the following ways:

- The agenda explicitly foregrounds the notion of partnership – between citizens and their governments, between the state and non-state actors, between developing and developed countries and even between current and future generations. Heroic leaders are known to struggle to form mutually accountable and equal partnerships.
- The complexity that underlies the SDGs as a system of goals makes it impossible for one leader to make authoritative judgements. No one individual has the knowledge required to understand the complexity of synergies and trade-offs inherent to the SDGs.
- The level of ambition of the SDGs not only makes collaboration across sectoral and disciplinary boundaries essential but also requires potentially game-changing innovation.

This type of innovation is premised on decidedly non-heroic leadership behaviours, such as distributing influence among team members and transitory and task-specific forms of leadership.

- More practically, the lack of global progress on the SDGs requires leaders to admit to their own mistakes and to try



## Simply put, the SDGs require us to rethink the heroic bias in how we teach and research leadership

to do better. This type of honesty and vulnerability does not characterise heroic leaders.

What needs to change? In my recent book on why leaders fail, I identify a couple of lessons that can be fruitfully applied to how we think about the leadership needed to achieve the SDGs. My overarching argument is that the complexity and urgency of contemporary challenges require post-heroic leaders.

Post-heroic leaders accept their fallibility. Leaders who accept their fallibility do not sell unrealistic and unachievable visions to their followers. Rather, they acknowledge the scope of the challenge and activate their followers' agency.

This realism is urgently needed when we talk about the SDGs. No country is on track to achieve these goals, and we need a serious step change if we want to have a shot at achieving them.

Post-heroic leaders embrace their boundedness. At the most fundamental level they are bounded by the culture of their organisation and the expectations of their followers. They are also bounded by their particular skillset and personality.

Such leaders realise the importance of forging productive partnerships even with competing groups and organisations in their environment. In many respects the notion of boundedness is the motivation for the focus on partnership embedded in the SDGs.

The latest research on post-heroic leadership shows that post-heroic leaders benefit from making space for dissent. One of the major weaknesses of how the SDGs are approached in business schools and beyond is that they seem to be beyond criticism.

If we are serious about the SDGs, we need to have honest conversations about their limitations and the trade-offs of specific targets. Only then will we be able to reflect on how to mitigate such trade-offs.



Post-heroic leaders, and certainly the type of leaders we need to achieve the SDGs, practise courage. Courage is not, as one might think, a heroic leadership trait. When reflecting on Aristotle's foundational definition of courage, this virtue is 'bracketed' by the extremes of excessive confidence and excessive fear or lack of confidence.

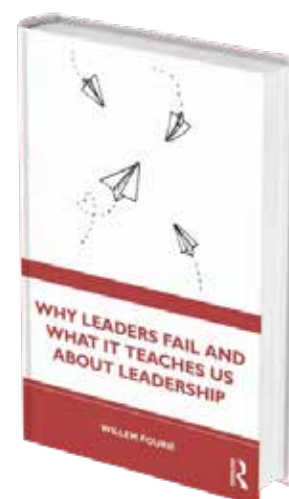
Heroic leaders tend to exhibit excessive confidence, which makes them more prone than others to surround themselves by acolytes and engage in risky behaviour. Practising courage, however, means that a leader has the ability to gauge what is called for in a particular situation, and is willing to take on the potential risk of failure.

Other post-heroic traits, capabilities and behaviours can be highlighted, as I also discuss in my book. The overarching point is that the SDGs offer us an opportunity to question and update many of the popular assumptions of what constitutes 'good' leadership.

In a complex world characterised by rising tensions and ever-more serious challenges, overly simplistic approaches to leadership – such as the notion that we merely need exceptional and charismatic individuals – are not good enough. ■

#### ABOUT THE AUTHOR

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# Is the global transport industry on a highway to climate hell?

**A**ccording to the International Energy Agency (IEA), transport has the highest reliance on fossil fuels of any sector. Although its contribution to global emissions dropped sharply when the world hit pause during the pandemic, this has risen rapidly since borders reopened and lockdowns ended.

The greatest increases have been recorded in developing markets: transport-related emissions in developing countries have increased more rapidly than in Europe or North America and this is a trend that is likely to continue in coming decades.

Transitioning to clean energy is not cheap. Cost will be a significant challenge for the sector moving forward. However, as Gido van Graas, Head of ING's Energy Project Advisory Team noted in the *Atradius Clean Energy Transition: A New Way Forward for Global Trade?* Event<sup>1</sup>: "We see that there are huge investments required to support the energy transition. I believe that the liquidity is there to support that."

## What can our underwriters tell us about clean energy transitions in the transport sector?

Our underwriters note the transport industry cannot be viewed as a homogenous whole. The industry's subsectors face different challenges, with varying outlooks across developing and developed markets. For example, the passenger electric vehicles (EV) sector in developed economies is enjoying growth.

According to the IEA, one in seven passenger cars bought globally in 2022 was an EV, compared to one in 70 in 2017. Decarbonising shipping and aviation is more complex and still requires more research and development.

## Challenges: what are the most urgent challenges for the sector in the next three years?

### 1. Development of infrastructure is insufficient

Every Atradius underwriter we spoke to, representing a geographical spread across the world's developed markets, pointed to insufficient infrastructure as one of the greatest risks to emissions reduction in the transport industry.

In particular, a primary challenge for the transport industry is the need to expand EV charging networks to support growing consumer demand for electrification.

### 2. High costs are a barrier to adoption

Although our underwriters noted subsidies and tax incentives are available in some markets, this doesn't detract from the fact that energy transition is costly. EVs remain unaffordable for many consumers and the electrification of entire fleets can put too deep a dent in many business balance sheets.

Investment in other alternative energy sources, such as hydrogen, is also costly. The current economic conditions with high inflation and increasing interest rates, also makes for a challenging investment environment.

### 3. Some sectors are difficult to decarbonise

Aviation remains a heavily carbon-intensive mode of transport. There is a long-term need for further investment in technology and alternative fuels for the sector.

Although the shipping industry can reduce emissions through the use of low-sulphur-compliant bunker oil or cleaner alternative fuels, the cost of these are still higher than heavy bunker fuels. Smaller players are more vulnerable to the increased costs and their survival may depend on their ability to pass on costs to customers.

## Opportunities: what are greatest opportunities for the sector in the next three years?

### 1. Access to financing and government incentives

Several of our underwriters pointed to the availability of financing and subsidies as a clear opportunity for growth, particularly in the US and Europe. Our underwriters in Germany and the Netherlands noted that government stimulation programmes and tax advantages were widely available.

### 2. Development of alternative fuel sources

New energy such as clean hydrogen and biofuel is becoming an increasingly important element in supporting energy transition in the transport industry and presents great opportunities for growth.

Our underwriting team in Japan explained how this extends to the aviation sector. They said: "Japan Airlines (TYO: 9201) has already set a goal to become the leading airline in the use of SAF (sustainable aviation fuel) and plans to replace 10% of fuel on board by 2030."



### 3. Growth of the EV sector

The EV sector is enjoying growth with global demand presenting opportunities along the entire value chain from chip producers to materials manufacturers and OEMs.

Our underwriters in China said: *“China accounts for about half of global EV sales and will benefit from the global transition towards EVs as well growth in the domestic market which is currently dominated by local brands.”*

#### Where next?

Lowering greenhouse gas emissions in the transport industry is not just about transitioning to clean energy sources.

Reshoring industries, bringing them closer to their markets, can help to reduce freight miles.

Digitalisation may also bring about freight transport efficiencies and help to reduce statistics such as reported by the US Bureau of Transportation Statistics that revealed one in four trucks that ran empty in the US in 2019.

Applying the concept of the circular economy could also help decarbonise the transport industry, reducing the volume of tyres that end up in landfill each year for example, although this still has a way to go. ■

#### Endnote

1. <https://atradius.foleon.com/atradius-events/clean-energy-transition/>



# A fight for every job: decarbonising Europe's cars

**Bela Galgóczi is a Senior Researcher at the European Trade Union Institute - ETUI**

**T**he shift to electric cars is gaining momentum, with huge implications for millions of workers. The priority for trade unions is to secure jobs and workers' rights. But what will a just transition mean for Europe's automotive industry amid growing market competition between the EU, the US, and China?

A timeline for the phase-out of petrol-powered cars produced in Europe has now been set. The transition to electric vehicles is part of the European Union's *Fit for 55* package, which aims to reduce the region's net greenhouse gas emissions by at least 55 per cent by 2030 compared to 1990 levels and 100 per cent by 2035 (though with a loophole for synthetic fuels).

Decarbonising road transport – a huge contributor to overall greenhouse gas emissions – is key to achieving climate neutrality in the EU by 2050, a commitment that lies at the heart of the European Green Deal. With deadlines looming, Europe's automobile industries are charting the electrification course rapidly.

This, of course, is good news. The way the transition is taking place, however, is far from ideal. As one of Europe's largest industries – and biggest sources of employment – shifts into gear for major change, new fault lines are emerging. Its ability to grapple with the inevitable conflicts and successfully weather the transformation will have major implications for millions of Europeans.

## **What's at stake?**

The automotive industry is currently facing a range of challenges. Besides undergoing an internal shift to digitalisation, automation, and total value chain reorganisation, it now needs to fast-track a move towards electric vehicles.

This transformation is upsetting the long-standing dominance of industry heavy hitters such as Volkswagen and BMW, and allowing newcomers like Tesla to enter the market in a previously unimaginable way.

To Germany's shock, the Tesla Model Y outsold the Volkswagen Golf in September 2022. Chinese companies<sup>1</sup> like BYD and SAIC Motor are also gaining new ground, making up 6 per cent of EU electric car sales in 2022. This is likely to reach 20 per cent by 2030.

It is increasingly clear that past success offers no guarantee of future competitiveness. The EU's potential diminishing dominance in this global industry is set into sharp relief in this new era of deglobalisation, with pandemic-induced supply chain disruptions and the end of the rules-based post-World War II international order – accelerated by Russia's invasion of Ukraine – raising the geopolitical stakes even higher.

In the European Union, the automotive sector is directly responsible for 2.6 million jobs. With 13.8 million direct and indirect jobs<sup>2</sup> as a whole, it accounts for more than 6 per cent of total European employment.

Forecasts on how electrification will affect these jobs depend on their scope and assumptions, but most predict major job losses in the manufacturing segment – between 275,000 and 410,000 by 2040 according to a 2021 study<sup>3</sup> by the European Association of Automotive Suppliers. This may be partly compensated by increasing value added from electronics, autonomous drive systems, and electric charging infrastructure.

According to a study published in 2021<sup>4</sup> by the Boston Consulting Group, up to three million industry jobs will also be fundamentally transformed in terms of the skills required, place of work, contract type, and working conditions.

These forecasts assume that new car sales will remain stable – but this cannot be taken for granted. Ever fewer new cars are sold each year, and stability in sales revenues is only due to them getting larger and more expensive.

This assumption also reveals how many industry players see automotive electrification: not as part of a wider decarbonisation of transport that includes fewer cars and better mass transit, but simply as the replacement of the combustion engine with an electric one.

Media concern has focused on possible employment loss due to electrification. The greatest risk, however, is missing the train. Slowing down the mobility transition at this stage would undermine European competitiveness and result in greater job losses in the long term. At this point, focusing on aggregate job gains or losses is therefore less important than helping European companies, regions, and workers navigate the transition.



It is also important to understand that, even if overall automotive employment in Europe remains relatively constant, European manufacturers and regions – from the generalist volume producers in France and Italy to Germany’s premium manufacturers and the central and eastern European supply chain – will experience the transition in vastly different ways.

While all major regions saw a decrease in the number of new cars<sup>5</sup> sold between 2000 and 2019, Germany only saw a 9 per cent reduction, whereas Italian sales dropped by 51 per cent. In the same period, employment in the sector rose by 3 per cent in Germany but plummeted by 43 per cent in France. The car industry in central and eastern Europe – boosted in past decades by foreign direct investment – is a special case.

It’s cheap and flexible workforce offers a competitive advantage, but the industry’s future here remains uncertain. The region has the oldest, most polluting, and fastest-growing car fleets in Europe and a population largely unable to afford electric vehicles. More problematically, its unions are weaker and often not internationally affiliated.

These workers and plants have less bargaining power and are particularly vulnerable to decisions made elsewhere. Also a problem is the industry’s continuing ‘upmarket drift’<sup>6</sup> – the production of heavier, faster, and more expensive battery electric vehicles and plug-in hybrids that, among other issues, need larger batteries – which is putting a strain on critical material use.

### **The trade union perspective**

The primary focus of Europe’s automotive trade unions is clearly to secure jobs and workers’ rights as the industry navigates the green transition, but individual unions play different roles depending on their scope. Workplace unions within specific plants or companies tend to prioritise the short-term goals of their members.

By contrast, higher-level trade unions with a more national or international outlook and at one level removed from the immediate concerns of workers – such as the European Trade Union Confederation (ETUC) – are more likely to situate<sup>7</sup> the interests of their members within long-term societal goals such as the need for environmental policies and political participation.

In the industrial relations literature, trade union responses to the green transformation can be grouped into three categories: opposition, hedging, and support<sup>8</sup>. In contrast to an uncompromising opposition to climate change mitigation, hedging strategies accept the need for emissions reduction policies but seek to minimise environmental regulation. Support strategies are in favour of climate mitigation and take a proactive stance on decarbonisation.

Over the last decades, trade unions have developed their ability to challenge profit-driven changes imposed by capital. The changes proposed under the green transition are of a different ilk: they are policy driven and serve the public interest.

*“The fact that the automotive industry is not covered by the EU’s Just Transition framework is a serious omission that risks deepening an already conflictual and unequally distributed process”*

Instead of questioning or impeding the necessary restructuring, trade unions must become drivers of this change while working to manage its consequences. This is a huge challenge, and one exacerbated by the capital-labour conflict.

Even if unions agree with the long-term objective of the restructuring process, proposed changes such as reducing jobs and lowering conditions can resemble the profit-maximising efforts that unions usually resist on their members’ behalf.

On top of that, precarious jobs with less security make up a large and growing share of posts. Such jobs have historically borne the costs and risks associated with change, making it both harder to protect them and to get these workers on board with restructuring.

This asymmetry of power, alongside a growing recognition of the importance of climate and environmental objectives, has led to trade unions becoming the drivers behind the ‘just transition’ concept. In 2018, global manufacturing union IndustriALL and others called for balanced emissions reductions that take employment and social aspects into account and for a just transition fund for industry.

Industry stakeholders can exert considerable power at policy-making level. Employer associations – the owners’ and managers’ versions of trade unions – have been playing a controversial role in lobbying for lighter regulation on car emission standards.

The 2015 Dieselgate scandal – which uncovered that manufacturers such as Volkswagen had installed defeat devices allowing cars to cheat pollution controls – shows how the industry has tried to evade regulation after failing to prevent it.

In the run-up to the European Council’s 2018 adoption of a 35 per cent reduction in car CO<sub>2</sub> emissions by 2030, both unions and employers’ associations supported the German government’s push for a lighter 30 per cent target. With the *Fit for 55* package, the cut increased to 55 per cent for cars and 50 per cent for vans by 2030, rising to 100 per cent by 2035.

In 2021, German automotive association VDA opposed<sup>9</sup> the phasing out of the combustion engine, and IndustriALL has also expressed<sup>10</sup> concerns about fast-track electrification.

But things are changing. Germany’s largest trade union, metalworkers’ union IG Metall, has revised its previously



cautious approach and embarked on a fast-track transition. And in 2022, European-level trade unions launched an urgent appeal calling on policymakers to support the automotive sector in implementing a just transition.

The sector as a whole is not currently included in the EU's Just Transition Mechanism – set up to “ensure that the transition towards a climate-neutral economy happens in a fair way” – as the latter is limited to carbon-intensive regions, while the prospective Social Climate Fund will primarily aim to balance the regressive effects of the Emissions Trading System (ETS2).

### Looking at individual plants

For an insight into the conflicts and negotiations taking place within individual plants and companies, we can turn to Germany's car industry. There, ‘works councils’ (Betriebsräte) represent the workforce at plant level and are actively co-managing the transition in order to protect employees.

In 2017, the General Works Council of Daimler, which has the right to be advised of future strategies and make proposals, reached an agreement on Project Future, the company's restructuring plan. This agreement protects all Daimler employees in Germany – including those in logistics and branch offices – from operational dismissal until 2029, though without precluding changes to employees' workload and responsibilities.

There has nevertheless been a protracted fight for each individual job and production location, taking place within a web of opposing interests operating at different levels: between capital and labour, management and the works council, and different locations both within and outside of Germany.

For example, in 2020 the Daimler management launched a massive restructuring programme to ‘optimise’ its global

production network. With this came the announcement of 30,000 job losses worldwide, putting the viability of several plants in question. The French Daimler subsidiary that produced the Smart brand was sold, and the manufacturing of the new electric Smart moved to China.

Daimler's attempt to end production of the V6 diesel engine at its oldest plant in Berlin created a major conflict; after a year of negotiations by the works council, it was decided that the site will manufacture electric motors as part of a restructuring plan<sup>11</sup>.

Volkswagen is grappling with similar internal struggles. Within its 2016 *Pact for the Future*, the company announced that although new technologies and products would create 9,000 jobs, 25,000 would be lost. The pact includes a works-council-negotiated job security agreement up to 2025 and secured commitments to keep the production of new e-mobility components in Germany.

The agreement, which applies to 120,000 employees, does not exclude job cuts; however, these would take place through managed retirement plans, such as the one agreed in February 2021 for 5,000 jobs. The pact made the Wolfsburg main plant the headquarters for digitalisation and electro-mobility – ‘Volkswagen's Silicon Valley’.

Tensions around this plant grew in 2021 due to its low-capacity utilisation and productivity. When in November 2021 then-CEO Herbert Diess reportedly warned the supervisory board of up to 30,000 job losses in Germany, a full-blown media scandal erupted. He subsequently backed off, mentioning only ‘some downsizing’ at the main plant.

Referring to the 2016 *Pact for the Future*, the works council rejected<sup>12</sup> any further job cuts, but added that the workforce is ready for change, though “only with VW culture. And

that includes the works council getting involved.” Its central works council secured the Wolfsburg headquarters’ future by pushing the management to accelerate the launch of autonomous electric vehicles there.

Electric car batteries – which make up between 30 and 40 per cent of the value added of an electric car – will be key to future employment in Europe. The number of jobs created will depend on the approach taken by manufacturers, however: from BMW’s external procurement to Volkswagen’s integrated value chains.

Calls from trade unions for automotive companies to produce their own battery cells in house, thus mitigating job losses, are increasing, and indeed the size and influence of a company’s work council has been found to be a key factor in whether a company goes down this route.

### Managing conflict through a just transition

While Europe’s car industry has historically not been concerned by the need to transition to greener transport, the automotive sector is now absorbed with managing the fast-track transformation to electromobility required by the EU, using a combination of hedging and support strategies.

On their side, the industry’s works councils and trade unions have been heavily involved in protecting jobs and workers. Their efforts have met with some success – predominantly in France and Germany. In the latter, the interventions of the country’s powerful works councils have allowed workers and plants to come out of restructuring processes relatively well.

French unions, after witnessing significant job losses in the past decades, believe that electrification presents a substantial reshoring opportunity and are calling for policies to incentivise this.

But even in the most positive of scenarios, the process remains conflictual. Just transition policies, while absolutely necessary, are limited in scope as they tend to be available to specific groups of workers only – those with regular

employment contracts – and fail to cover the entire value chain, in particular in foreign countries.

Trade unions at foreign subsidiaries, such as in central and eastern Europe, have less leverage as strategic decisions are made at company headquarters. As a defensive strategy, they hope for a longer phase-out for the combustion engine. Broader social justice issues, such as regional inequalities and the lack of affordability of the heavier and more expensive cars now guaranteeing industry jobs, are less the focus of trade union attention.

Trade unions have always been advocates for active government policy on industrial matters and have welcomed European Commission initiatives such as the Green Deal Industrial Plan and the Net-Zero Industry Act.

But the lack of social conditions – such as quality jobs and apprenticeships attached to the available funding – has drawn strong criticism from IndustriALL Europe and the ETUC, who are concerned that the relaxation of state aid rules may put downward pressure on working conditions.

The automotive industry’s transition to electric vehicles – as required by the EU under the *Fit for 55* package – is a positive step forward and key to wider ecological transition. But at this time of complete reconfiguration, the sector and its unions need more support to navigate the conflicts inherent in such wide-reaching change.

The fact that the automotive industry is not covered by the EU’s Just Transition framework is a serious omission that risks deepening an already conflictual and unequally distributed process.

If they want to see a green transition that is fair and generates hope rather than discontent in Europe’s workplaces and homes, Greens and all progressive voices must add their weight to the call by trade unions, employers, and NGOs for a just transition framework for one of Europe’s biggest sectors and employers. ■

#### Endnotes

1. <https://www.globalfleet.com/en/manufacturers/global/features/chinese-dominance-european-ev-market-it-happening?t%5B0%5D=Electrification&curl=1>
2. [https://single-market-economy.ec.europa.eu/sectors/automotive-industry\\_en](https://single-market-economy.ec.europa.eu/sectors/automotive-industry_en)
3. <https://clepa.eu/who-and-what-we-represent/ev-transition-impact-assessment/>
4. <https://web-assets.bcg.com/82/0a/17e745504e46b5981b74fadba825/is-e-mobility-a-green-boost.pdf>
5. <https://www.etui.org/publications/way-electromobility-greener-more-unequal-future>
6. <https://www.etui.org/publications/heavier-faster-and-less-affordable-cars>
7. [https://labordoc.ilo.org/discovery/fulldisplay?docid=cdi\\_proquest\\_miscellaneous\\_1669870889&context=PC&vid=41ILO\\_INST:41ILO\\_V1&lang=en&search\\_scope=MyInst\\_and\\_CI&adaptor=Primo%20Central&tab=Everything&query=sub,exact,%20labour%20unions%20](https://labordoc.ilo.org/discovery/fulldisplay?docid=cdi_proquest_miscellaneous_1669870889&context=PC&vid=41ILO_INST:41ILO_V1&lang=en&search_scope=MyInst_and_CI&adaptor=Primo%20Central&tab=Everything&query=sub,exact,%20labour%20unions%20)
8. <https://journals.sagepub.com/doi/abs/10.1177/0959680120951700?journalCode=ejda>
9. [https://www.vda.de/dam/jcr:a2dba006-94ec-4d6e-8ceb-b221218a6963/V4\\_Positionspapier\\_FitFor55\\_2021-05-28\\_EN.pdf?mode=view](https://www.vda.de/dam/jcr:a2dba006-94ec-4d6e-8ceb-b221218a6963/V4_Positionspapier_FitFor55_2021-05-28_EN.pdf?mode=view)
10. [https://news.industriall-europe.eu/documents/upload/2021/2/637483924746081441\\_2021%2002%2005%20CO2%20Consult\\_IAE%20FINAL.pdf](https://news.industriall-europe.eu/documents/upload/2021/2/637483924746081441_2021%2002%2005%20CO2%20Consult_IAE%20FINAL.pdf)
11. <https://www.bw24.de/stuttgart/daimler-ag-mercedes-benz-berlin-werk-marienfelde-jobs-mitarbeiter-elektromotoren-amg-stellen-91127004.html>
12. <https://www.faz.net/aktuell/wirtschaft/auto-verkehr/vw-chef-diess-bringt-ig-metall-in-rage-30-000-stellen-in-gefahr-17583101.html>

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# Paradise lost?

**Fabio Panetta is a Member of the Executive Board of the European Central Bank**

## Introduction

Some 15 years ago, software developers using the pseudonym Satoshi Nakamoto created the source code of what they thought could be decentralised digital cash<sup>1</sup>. Since then, crypto has relied on constantly creating new narratives to attract new investors, revealing incompatible views of what cryptoassets are or ought to be.

The vision of digital cash – of a decentralised payment infrastructure based on cryptography – went awry when blockchain networks became congested in 2017, resulting in soaring transaction fees<sup>2</sup>.

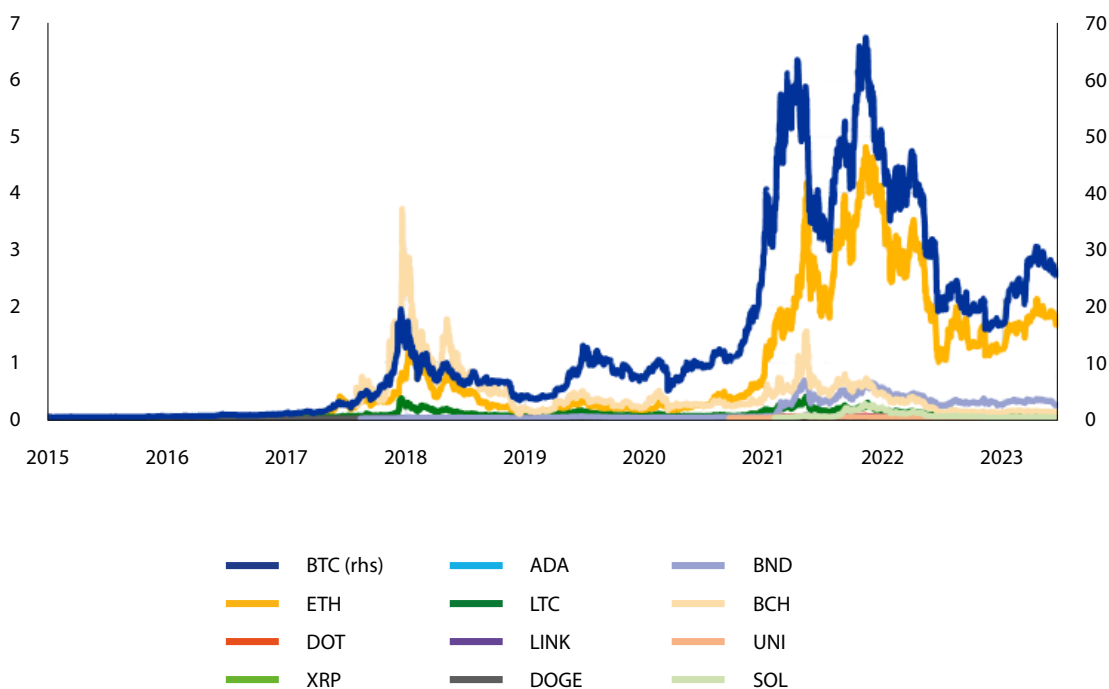
Subsequently, the narrative of digital gold gained momentum, sparking a ‘crypto rush’ that led to one in five adults in the United States and one in ten in Europe speculating on crypto, with a peak market capitalisation of €2.5 trillion<sup>3</sup>.

However, this illusion of cryptoassets serving as easy money and a robust store of value dissipated with the onset of the crypto winter in November 2021. The fall in the price of cryptos (Chart 1) led to a decrease of around €2 trillion worth of cryptoassets within less than a year. This caught millions of investors unprepared<sup>4</sup>. An estimated three-quarters of bitcoin users suffered losses on their initial investments at this time<sup>5</sup>.

Understandably, many are now questioning the future of cryptoassets. But the bursting of the bubble does not necessarily spell the end of cryptoassets<sup>6</sup>. People like to gamble and investing in crypto offers them a way to do so<sup>7</sup>.

Crypto valuations are highly volatile, reflecting the absence of any intrinsic value. This makes them particularly sensitive to changes in risk appetite and market narratives. The

**Chart 1. Prices of bitcoin and selected altcoins (USD thousands).**



*Notes: The data are for the period from 1 January 2015 to 15 June 2023 and are based on the price of cryptoassets as in the Crypto Coin Comparison Aggregated Index (CCCAGG) provided by CryptoCompare. The altcoins' names are abbreviated as follows: Bitcoin (BTC), Ether (ETH), Polkadot (DOT), Ripple (XRP), Cardano (ADA), Litecoin (LTC), Chainlink (LINK), Dogecoin (DOGE), Binance Coin (BNB), Bitcoin Cash (BCH), Uniswap (UNI), Solana (SOL).*

*Source: CryptoCompare.*

recent developments that have affected leading cryptoasset exchanges have highlighted the contradictions of a system which, though created to counteract the centralisation of the financial system, has become highly centralised itself.

I will contend that due to their limitations, cryptos have not developed into a form of finance that is innovative and robust, but have instead morphed into one that is deleterious. The crypto ecosystem is riddled with market failures and negative externalities, and it is bound to experience further market disruptions unless proper regulatory safeguards are put in place.

Policymakers should be wary of supporting an industry that has so far produced no societal benefits and is increasingly trying to integrate into the traditional financial system, both to acquire legitimacy as part of that system and to piggyback on it.

Instead, regulators should subject cryptos to rigorous regulatory standards, address their social cost, and treat unsound crypto models for what they truly are: a form of gambling.

This may prompt the ecosystem to make more effort to provide genuine value in the field of digital finance.

### **Shifting narratives: from decentralised payments to centralised gambling**

The core promise of cryptos is to replace trust with technology, contending that the concept 'code is law' will allow a self-policing system to emerge, free of human judgement and error. This would in turn make it possible for money and finance to operate without trusted intermediaries.

However, this narrative often obfuscates reality. Unbacked cryptos have made no inroads into the conventional role of money. And they have progressively moved away from their original goal of decentralisation to increasingly rely on centralised solutions and market structures. They have become speculative assets<sup>8</sup>, as well as a means of circumventing capital controls, sanctions or financial regulation.

### **Blockchain limitations**

A key reason why cryptos have failed to make good on their claim to perform the role of money is technical. Indeed, the use of blockchain – particularly in the form of public, permissionless blockchain – for transacting cryptoassets has exhibited significant limitations<sup>9</sup>.

Transacting cryptos on blockchains can be inefficient, slow and expensive; they face the blockchain trilemma, whereby aiming for optimal levels of security, scalability and decentralisation at the same time is not achievable<sup>10</sup>.

Cryptoassets relying on a proof-of-work validation mechanism, which is especially relevant for bitcoin as the largest cryptoasset by market capitalisation<sup>11</sup>, are ecologically detrimental. Public authorities will therefore need to evaluate whether the outsized carbon footprint of certain cryptoassets undermines their green transition commitments<sup>12</sup>.

*“The crypto ecosystem is riddled with market failures and negative externalities, and it is bound to experience further market disruptions unless proper regulatory safeguards are put in place”*

Moreover, proof-of-work validation mechanisms are inadequate for large-scale use<sup>13</sup>. Bitcoin, for example, can only accommodate up to seven transactions per second and fees can be exorbitant.

While alternative solutions to overcome the blockchain trilemma and proof-of-work consensus shortcomings have emerged for faster and more affordable transactions, including those outside the blockchain, they have drawbacks of their own. 'Off-chain' transactions conducted via third-party platforms compromise the core principles of cryptoassets, including security, validity and immutability<sup>14</sup>.

Another important aspect is the operational risk inherent in public blockchains due to the absence of an accountable central governance body that manages operations, incidents or code errors<sup>15</sup>.

Moreover, the handling of cryptoassets can be challenging. In a decentralised blockchain, users must protect their personal keys using self-custody wallets, which can discourage widespread adoption due to the tasks and risks involved, for example the theft or loss of a key. Given the immutability of blockchains, they do not permit transaction reversal<sup>16</sup>.

### **Instability**

Another key limitation of unbacked cryptos is their instability. Unbacked cryptos lack intrinsic value and have no backing reserves or price stabilisation mechanisms<sup>17</sup>. This makes them inherently highly volatile and unsuitable as a means of payment. Bitcoin, for instance, exhibits volatility levels up to four times higher than stocks, or gold (Chart 2).

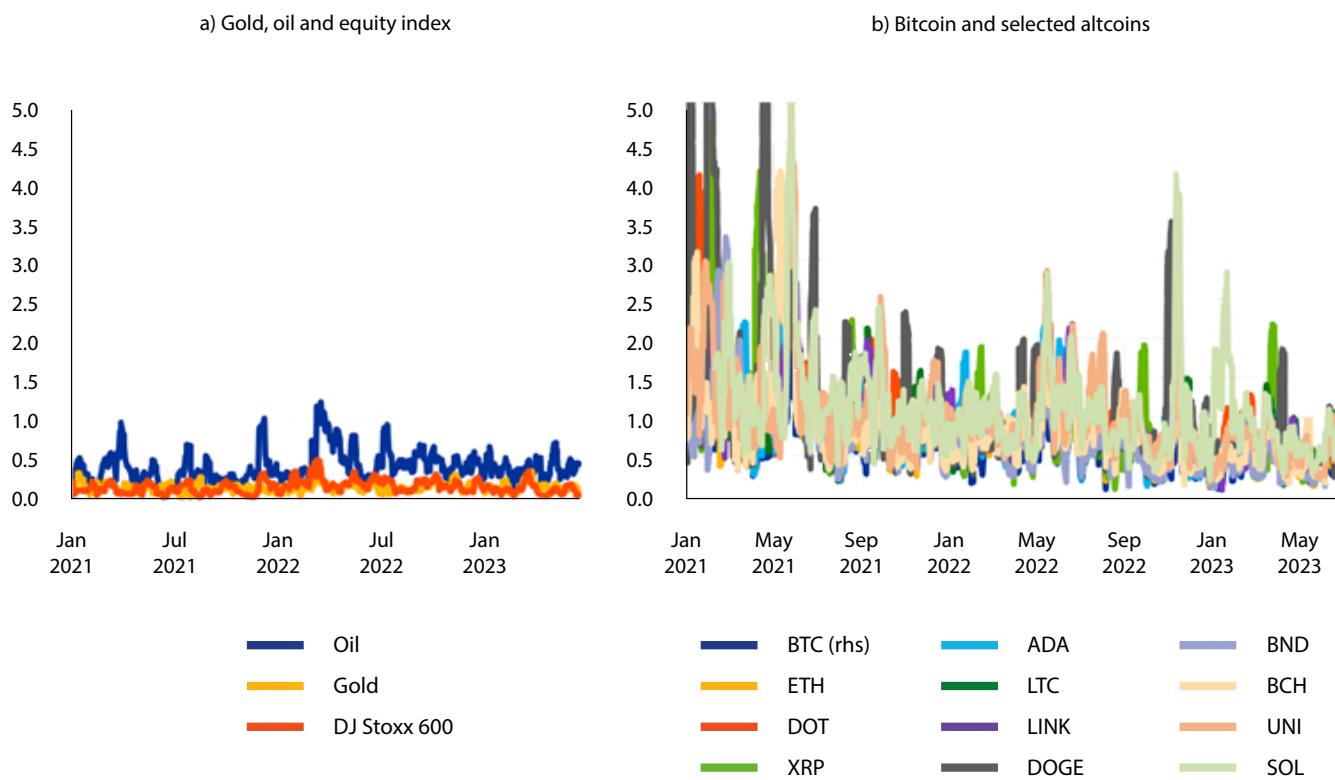
Such high volatility also means that households cannot rely on cryptoassets as a store of value to smooth their consumption over time. Similarly, firms cannot rely on cryptoassets as a unit of account for the calculation of prices or for their balance sheet.

Moreover, unbacked cryptos do not improve our capacity to hedge against inflation. Indeed, their price developments exhibit an increasing correlation with stock markets (Chart 3). And empirical analysis finds that momentum in the cryptoasset market and global financial market volatility do have an impact on bitcoin trading against fiat currencies<sup>18</sup>.

### **Cryptos as a means of gambling and circumvention**

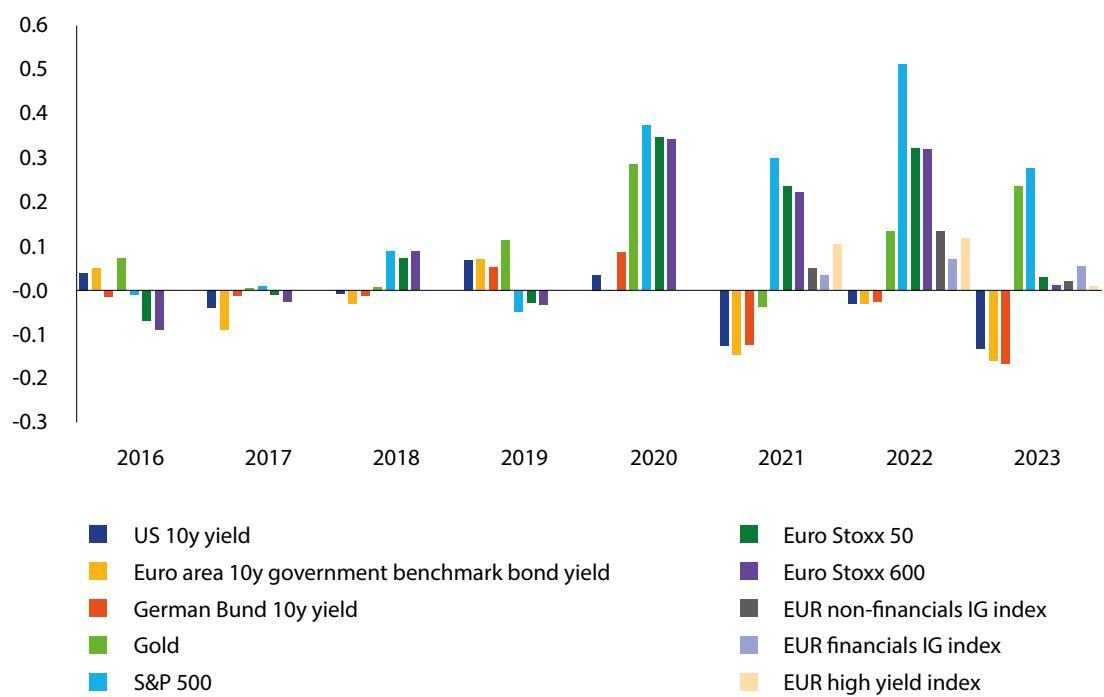
But the very instability of unbacked cryptos does make them

**Chart 2. Price volatility of cryptos compared with other assets (annualised seven-day rolling standard deviation of daily percentage changes of prices).**



Notes: The data are for the period from 1 January 2015 to 15 June 2023. For visibility reasons, the maximum of the y-axis for Chart 2, panel b is set to 5. Nevertheless, on 30 and 31 January 2021 the price volatility of DOGE exceeded 28. Oil data refer to the European Brent Spot price. The altcoins' names are abbreviated as follows: Bitcoin (BTC), Ether (ETH), Polkadot (DOT), Ripple (XRP), Cardano (ADA), Litecoin (LTC), Chainlink (LINK), Dogecoin (DOGE), Binance Coin (BNB), Bitcoin Cash (BCH), Uniswap (UNI), Solana (SOL).  
Sources: CryptoCompare, Bloomberg, Refinitiv and ECB calculations.

**Chart 3. Returns correlations of bitcoin vis-à-vis selected financial assets (yearly rolling correlation).**



Notes: The data are for the period from 1 January 2016 to 16 June 2023.  
Sources: Bloomberg, S&P Global iBoxx, CryptoCompare and ECB calculations.

appealing as a means of gambling. And their use as such has been facilitated by the establishment of a centralised market structure that supports the broader use of cryptoassets<sup>19</sup>.

Crypto exchanges have become gateways into the crypto ecosystem, often providing user access to crypto markets in conjunction with other services like wallets, custody, staking<sup>20</sup> or lending. Off-chain grids or third-party platforms have offered users easy and cost-effective ways to engage in trading and speculation, while stablecoins are being used to bridge the gap between fiat and crypto by promising a stable value relative to fiat currency<sup>21</sup>.

Besides gambling, cryptoassets are also being used for bypassing capital controls, sanctions and traditional financial regulation. A prime example is bitcoin, which is used to circumvent taxes and regulations, in particular to evade restrictions on international capital flows and foreign exchange transactions, including on remittances<sup>22</sup>.

These practices may have destabilising macroeconomic implications in some jurisdictions, notably in developing and emerging markets.

### **Risks from the growing centralisation of the crypto ecosystem**

The crypto ecosystem's move away from its original goals towards more centralised forms of organisation, typically without regulatory oversight, is giving rise to substantial costs and an array of contradictions. There are two major facets to this phenomenon.

#### **The re-emergence of classic financial sector shortcomings and vulnerabilities**

First, dependence on third-party intermediaries, many of which are still unregulated, has resulted in market failures and negative externalities, which crypto was initially designed to sidestep.

The crypto ecosystem, for instance, has cultivated its own concentration risks, with stablecoins assuming a key role in trading and liquidity provision within decentralised finance markets<sup>23</sup>. The difficulties faced by prominent stablecoins in the past year likely contributed significantly to the noticeable downturn in these markets<sup>24</sup>.

Indeed, stablecoins often pose greater risks than initially thought. They introduce into the crypto space the kind of maturity mismatches commonly seen in money market mutual funds. As we have seen in the past year, redemption at par at all times is not guaranteed, risks of runs and contagion are omnipresent, and liquidation of reserve assets can lead to procyclical effects through collateral chains across the crypto ecosystem.

Another episode of instability driven by high concentration risk was the fall of the crypto exchange FTX. Initially the crisis seemed to primarily affect liquidity, but it quickly evolved into a solvency crisis. This situation arose due to FTX's inadequate risk management, unclear business boundaries and mishandling of customer funds.

The repercussions of this event rippled through the crypto ecosystem, causing cascading liquidations<sup>25</sup> that underscored the interconnectedness and opacity of crypto markets. Ultimately, it showcased how swiftly confidence in the industry could deteriorate.

Similarities to the FTX case can be seen in the recent civil charges brought by the US Securities and Exchange Commission against the biggest remaining crypto exchange: Binance.

These civil charges allege that Binance's CEO and Binance entities were involved in an extensive web of deception, conflicts of interest, lack of disclosure and calculated evasion of the law<sup>26</sup>. Should these allegations be proven, this would be yet another example of the fundamental shortcomings of the crypto ecosystem.

The recent crypto failures also show that risk, in itself, is technology-neutral. In financial services, it does not matter if a business ledger is kept on paper as it was for hundreds of years, in a centralised system as we have now or on a blockchain as in the cryptoasset ecosystem.

In the end, whether a firm remains in business or fails depends on how it manages credit risk, market risk, liquidity risk and leverage. Crypto enthusiasts would do well to remember that new technology does not make financial risk disappear. The financial risk either remains or transforms into a different type.

It is like pressing a balloon on one side: it will change in shape until it pops on the other side. And if the balloon is full of hot air, it may rise for a while but will burst in the end.

#### **Links with the traditional financial sector**

The second contradiction arises from the crypto industry's attempt to strengthen ties with actors in the financial system, including banks, big tech companies and the public sector.

Major payment networks<sup>27</sup> and intermediaries<sup>28</sup> have enhanced their support services for cryptoassets. Numerous prominent tech companies, including Meta (formerly Facebook) and Twitter, have explored ways to incorporate crypto into their platforms<sup>29</sup>.

By leveraging their large customer base and offering a mix of payments and other financial services, tech firms, especially big techs, could solidify the ties between cryptoassets and the financial system.

The recent failures of Silvergate Bank and Signature Bank have highlighted the risks for banks associated with raising deposits from the crypto sector. The stability of these deposits is questionable given cryptos' volatility.

The discontinuation of the Silvergate Exchange Network and SigNet, which functioned as a quasi-payment system for the crypto investments of Silvergate Bank and Signature Bank clients, also shows how cryptoassets service providers depend on the traditional financial sector for settlement in fiat money.

The crypto industry not only seeks to strengthen its ties with the traditional financial industry. It also seeks to gain access to the public safety net that strongly regulated financial entities benefit from<sup>30</sup>.

Indeed, Circle, the issuer of the USD Coin (USDC) tried to gain access to the Federal Reserve's overnight reverse repurchasing facility in order to back its stablecoin<sup>31</sup>.

The crypto industry is seeking to grow by parasitising the financial system: it touts itself as an alternative to the financial sector, yet it seeks shelter within that very sector to address its inherent risks, all in the absence of adequate regulatory safeguards.

### **The public response: backing, regulating or innovating?**

The public sector response can be encapsulated in three main suggestions.

#### **Not giving in to the temptation to offer public backing to cryptos**

First, the temptation to offer public backing to cryptos must be resisted.

The idea of permitting stablecoin issuers as non-bank financial institutions to hold their reserves at central banks might seem appealing, but could lead to serious adverse consequences.

By granting stablecoins access to the central bank's balance sheet, we would effectively outsource the provision of central bank money. If the stablecoin issuer were able to invest its reserve assets<sup>32</sup> in the form of risk-free deposits at the central bank, this would eliminate the investment risks that ultimately fall on the shoulders of stablecoin holders. And the stablecoin issuer could offer the stablecoin holders a means of payment that would be a close substitute for central bank money<sup>33</sup>.

This would compromise monetary sovereignty, financial stability and the smooth operation of the payment system. For example, a stablecoin could displace sovereign money by using the large customer network of a big tech, with far-reaching implications<sup>34</sup>. Therefore, central banks should exercise prudence and retain control over their balance sheet and the money supply.

#### **Regulating cryptos adequately and comprehensively**

Second, regulators should refrain from implying that regulation can transform cryptoassets into safe assets. Efforts to legitimise unsound crypto models in a bid to attract crypto activities should be avoided<sup>35</sup>.

Moreover, the principle of 'same activity, same risk, same regulation' should be endorsed. Cryptos cannot become as safe as other assets and investors should be aware of the risks. Anti-money laundering/countering the financing of terrorism rules should be enforced, and crypto activities of traditional firms should be carefully monitored.

While some jurisdictions attempt to apply existing regulatory frameworks to cryptoassets, the EU's Markets in Crypto-Assets Regulation offers a customised regulatory structure

that applies to all 27 EU member states and draws on existing regulation where appropriate (e-money being one example). The EU has also updated existing regulation, for instance by extending the travel rule to crypto transactions<sup>36</sup>.

Despite the EU taking the lead in establishing a comprehensive framework regulating crypto activities, further steps are necessary. All activities related to the crypto industry should be regulated, including decentralised finance activities like cryptoasset lending or non-custodial wallet services<sup>37</sup>.

Moreover, the regulatory framework for unbacked cryptoassets may be deemed lighter than for stablecoins as it relies mainly on disclosure requirements for issuing white papers<sup>38</sup>, and on the supervision of the service providers which will offer them for trading. The risks posed by unbacked cryptoassets, which are largely used for speculative purposes, should be fully recognised.

Enhancing transparency and awareness of the risks associated with cryptoassets and their social cost are critical aspects of this approach. Public authorities will also need to address those social costs: for instance, cryptos' ecological footprint cannot be ignored in view of environmental challenges.

Additionally, the experience of FTX, which expanded massively with little oversight, underscores the importance of global crypto regulation and regulatory cooperation. The Financial Stability Board's recommendations<sup>39</sup> for the regulation and oversight of cryptoasset activities and markets need to be finalised and implemented urgently, also in non-FSB jurisdictions.

The Basel Committee on Banking Supervision's standard on the prudential treatment of banks' cryptoasset exposures is a positive step in this direction. It stipulates conservative capital requirements for unbacked cryptoassets with a risk weight of 1,250%, as well as an exposure limit constraining the total amount of unbacked crypto a bank can hold to generally below 1% of Tier 1 capital.

It will be key for the European Union and other Basel jurisdictions to transpose the Basel standard into their legislation by the 1 January 2025 deadline<sup>40</sup>. However, regulation alone will not be sufficient.

#### **Innovating: digital settlement assets and central bank digital currencies**

Third, the public sector needs to contribute to the development of reliable digital settlement assets.

Central banks are innovating to provide a stability anchor that maintains trust in all forms of money in the digital age. Central bank money for retail use is currently only available in physical form – cash. But the digitisation of payments is diminishing the role of cash and its capacity to provide an effective monetary anchor.

A central bank digital currency would offer a digital, risk-free standard and facilitate convertibility among different forms of private digital money. It would uphold the singleness of



money and protect monetary sovereignty. We are advancing with our digital euro project and aim to complete our investigation phase later this year.

Furthermore, the tokenisation of digital finance may require central banks to modify their technological infrastructure supporting the issuance of central bank money for wholesale transactions.

This could involve establishing a bridge between market distributed ledger technology (DLT) platforms and central bank infrastructures, or a new DLT-based wholesale settlement service with DLT-based central bank money<sup>41</sup>. We will involve the market in the exploratory work that we have recently announced<sup>42</sup>.

### Conclusion

Cryptoassets have been promoted as decentralised alternatives promising more resilient financial services. However, the reality does not live up to that promise. The blockchain technology underpinning cryptoassets can be extremely slow, energy-intensive and insufficiently scalable. The practicality of cryptoassets for everyday transactions is low due to their complex handling and significant price volatility.

To address these drawbacks, the crypto ecosystem has changed its narrative, favouring more centralised forms of organisation that emphasise crypto speculation and quick profit. But recent events have exposed the fragility of the

crypto ecosystem, demonstrating how quickly confidence in cryptoassets can evaporate.

In many respects, this ecosystem has recreated the very shortcomings and vulnerabilities that blockchain technology initially intended to address.

Further complicating matters, the crypto market seeks integration into the financial sector for increased relevance and public sector support. This would not provide the basis of a sustainable future for crypto. If anything, it would only heighten contradictions and vulnerabilities, resulting in greater instability and centralisation.

The public sector should adopt a determined position by establishing a comprehensive regulatory framework that addresses the social and environmental risks associated with crypto, including the use of unbacked cryptoassets for speculative purposes.

It should also resist calls to provide state backing for cryptos, which would essentially socialise crypto risks. The public sector should instead focus its efforts on contributing to the development of reliable digital settlement assets, including through their work on central bank digital currencies.

Decisive action of this kind should motivate the crypto ecosystem, including its foundational technology, the blockchain, to realign its objectives towards delivering real economic value within the digital finance landscape. ■

#### Endnotes

1. See Nakamoto, S (2008), "Bitcoin: A Peer-to-Peer Electronic Cash System", [bitcoin.org](https://bitcoin.org).
2. To maintain a system of decentralised consensus on a blockchain, self-interested validators need to be rewarded for recording transactions. In order to achieve sufficiently high rewards, the number of transactions per block needs to be limited. As transactions near this limit, congestion increases the cost of transactions exponentially. See Boissay et al (2022), "Blockchain scalability and the fragmentation of crypto", *BIS Bulletin*, No 56, Bank for International Settlements, 7 June.
3. It should be noted that holdings of cryptoassets are often concentrated in the hands of a few holders who could influence supply and prices. Moreover, some investments are the proceeds of illicit activities, which may be price elastic.
4. The market capitalisation of cryptoassets decreased from its peak of around €2.68 trillion on 10 November 2021 to €801 billion on 2 July 2022. By 14 June 2023 it stood at €978 billion. Source: [CoinMarketCap](https://coinmarketcap.com).
5. See Auer et al (2022), "Crypto trading and Bitcoin prices: evidence from a new database of retail adoption", *BIS Working Papers*, No 1049, Bank for International Settlements, November.
6. See Panetta, F (2023), "Caveat emptor does not apply to crypto", *The ECB Blog*, 5 January.
7. See Panetta, F (2022), "Crypto dominos: the bursting crypto bubbles and the destiny of digital finance", speech at the *Insight Summit*, London Business School, 7 December.
8. Incidences of fraud, human error and manipulation have eroded the trust of crypto enthusiasts, leading to calls for scrutiny, oversight and public intervention. Research and analysis show that fully decentralised set-ups are often concentrated on few holders or require other types of human intervention. This makes them prone to manipulation and risks. See for example, Sayeed and Marco-Gisbert (2019), "Assessing Blockchain Consensus and Security Mechanisms against the 51% Attack", *Applied Sciences*, Vol. 9, No 9, April.
9. Blockchain technology may however be well-suited to other areas, for instance, supply chain management.
10. See S Shukla (2022), "The 'Blockchain Trilemma' That's Holding Back Crypto", *The Washington Post*, 11 September.
11. As of 14 June bitcoin had a market capitalisation of €465.92 billion. Source: [CoinGecko](https://coinmarketcap.com).
12. See Gschossmann, I van der Kraaij, A, Benoit, P-L and Rocher, E (2022), "Mining the environment – is climate risk priced into crypto-assets?", *ECB Macroeprudential Bulletin*, 11 July.
13. Moreover, Makarov and Schoar show that bitcoin mining is highly concentrated: the top 10% of miners control 90% of mining capacity and just 0.1% (about 50 miners) control close to 50% of mining capacity. Alternatively, blockchains based on proof of stake are faster, but also tend towards centralisation, as larger coin holders can reap more rewards, concentrating power and the risk of 51% attacks. See Makarov, I and Schoar, A (2022), "Blockchain Analysis of the Bitcoin Market", *NBER Working Papers*, No 29396, National Bureau of Economic Research, 18 April.
14. See Soares, X (2023), "On-Chain vs. Off-Chain Transactions: What's the Difference?", *CoinDesk*, 11 May.
15. See Walch, A (2018), "Chapter 11 - Open-Source Operational Risk: Should Public Blockchains Serve as Financial Market Infrastructures?", in Chuen, DLK and Deng, R (eds.), *Handbook of Blockchain, Digital Finance, and Inclusion*, Vol. 2, Academic Press, pp. 243-269.
16. Moreover, the fact that data stored on the blockchain is immutable and transparent may put the technology in conflict with digital privacy rights.
17. In the absence of flexible supply mechanisms, unbacked cryptos are incapable of effectively responding to temporary fluctuations in demand and thus fail to stabilise their value. Similarly, bitcoin's limited supply – at 21 million coins – means that it does not offer protection against the risk of



structural deflation.

18. Di Casola, P, Habib, M and Tercero-Lucas, D (2023), "Global and local drivers of Bitcoin trading vis-à-vis fiat currencies", ECB Working Paper Series, forthcoming.
19. The industry's trend towards centralisation is clear. Since 2015 approximately 75% of the actual bitcoin volume has been associated with exchanges or exchange-like entities, including online wallets, over-the-counter (OTC) desks and large institutional traders. See Makarov and Schoar (2022), op. cit.
20. Staking is the foundation of the proof-of-stake consensus mechanism, which entails individuals locking up their assets (native coins) on a blockchain to secure the protocol. The stake acts as a form of collateral to ensure that validators, who are responsible for verifying and appending the blockchain, act in a manner that is in line with the protocol's rules. See Oderbolz, N, Marosvölgyi, B and Hafner, M (2023), "The Economics of Crypto Staking", Swiss Economics Blog, 1 March.
21. They back their value with securities, commodities, as well as fiat money. Interestingly and inevitably, major stablecoin issuers – such as Tether or Circle – adopt centralised organisational structures, directly contradicting the initial ideas as laid down in Satoshi Nakamoto's white paper. The notion that stablecoin issuers might invest in cryptoassets could further concentrate holdings and contradict the low-risk requirements for stablecoin reserves.
22. Graf von Luckner, C, Reinhart, CM and Rogoff, K (2023), "Decrypting new age international capital flows", Journal of Monetary Economics, 1 June.
23. Although it represents only a small part of the cryptoasset market, the stablecoin Tether accounts for close to half of all trading on cryptoasset trading platforms. See the section entitled "Stablecoins' role within the crypto-asset ecosystem" in Adachi, M et al (2022), "Stablecoins' role in crypto and beyond: functions, risks and policy", Macroeconomic Bulletin, Issue 18, ECB.
24. See the May 2023 report by the ESRB Task Force on Crypto-Assets and Decentralised Finance entitled "Crypto-assets and decentralised finance".
25. A decentralised finance ecosystem is built around crypto lending that is collateralised by other cryptoassets, using smart contracts to implement margin calls. The failure of FTX had a large impact on the price of cryptoassets serving as collateral for crypto lending. This triggered cascading liquidations by crypto lenders because of the decrease in the value of the collateral.
26. See US Securities and Exchange Commission (2023), SEC Files 13 Charges Against Binance Entities and Founder Changpeng Zhao, 5 June.
27. In particular, Mastercard, PayPal and Visa continue building capabilities and strategic partnerships to support cryptoassets (as well as stablecoins).
28. See, for example, JP Morgan's Onyx Coin Systems Product Team, Fidelity's Fidelity Crypto<sup>SM</sup> Account and Citi's collaboration with METACO to develop and pilot digital asset custody capabilities.
29. Meta expressed interest in the metaverse and the potential integration of cryptoassets and blockchain technology within its virtual reality platform. The company has been exploring the concept of a blockchain-based digital currency called 'Facebook Diem' (previously known as Libra). Twitter has integrated bitcoin tipping features. It allows users to send and receive bitcoin tips to content creators and other users on the platform.
30. See PYMTS (2023), Circle Says Lack of Direct EMI Access to EU Central Bank Accounts Stifles Payments Innovation.
31. Circle's USD 31 billion USDC stablecoin maintains around USD 25 billion of its reserves in short-term US Treasury bills in the exclusive Circle Reserve



Fund, managed by BlackRock. The fund is registered as a '2a-7' government money market fund. Circle's objective for the fund was to secure access to the Federal Reserve's reverse repurchasing facility through BlackRock, allowing the company to move USDC's remaining cash reserves from partner banks to the fund under a Federal Reserve account.

32. Reserve assets are the assets against which the stablecoins are valued and redeemed.

33. In contrast, the substitutability between central bank money and bank deposits is limited by the fact that, on bank balance sheets, deposits are matched against risky assets (bank loans).

34. See Panetta, F (2020), "From the payments revolution to the reinvention of money", speech at the Deutsche Bundesbank conference on the "Future of Payments in Europe", 27 November.

35. See Chipolina, S and Asgari, N (2023), "Binance slams US crypto crackdown and makes bid for UK oversight", Financial Times, 10 May.

36. The 'travel rule', already used in traditional finance, will in the future cover transfers of cryptoassets. Information on the source of the asset and its beneficiary will have to 'travel' with the transaction and be stored on both sides of the transfer. The law also covers transactions above €1,000 from 'self-hosted wallets' (a cryptoasset wallet address of a private user) when they interact with hosted wallets managed by cryptoasset service providers. See Regulation (EU) 2023/1113 of the European Parliament and of the Council of 31 May 2023 on information accompanying transfers of funds and certain cryptoassets and amending Directive (EU) 2015/849 (Text with EEA relevance), Official Journal L 150, 9 June 2023, p. 1–39.

37. Crypto lending is a centralised or decentralised finance service that allows investors to lend out their crypto holdings to borrowers. Decentralised crypto lending platforms use smart contracts to automate loan payouts and yields, and users can deposit collateral to receive a loan if they meet the appropriate requirements automatically (see Duggan, W (2023), "Crypto Lending: Earn Money From Your Crypto Holdings", Forbes, 30 January). A non-custodial wallet, or self-custody wallet, entails the crypto owner being fully responsible for managing their own cryptos. The users have full control of their crypto holdings, manage their own private key and handle transactions themselves (see "Custodial vs Non-Custodial Wallets", crypto.com, 17 February 2023).

38. This is a sort of prospectus for cryptoassets that informs potential holders about the characteristics of the issued cryptoasset before they offer a token to the public or list it on a trading platform.

39. See Financial Stability Board (2023), "Crypto-assets and Global "Stablecoins".

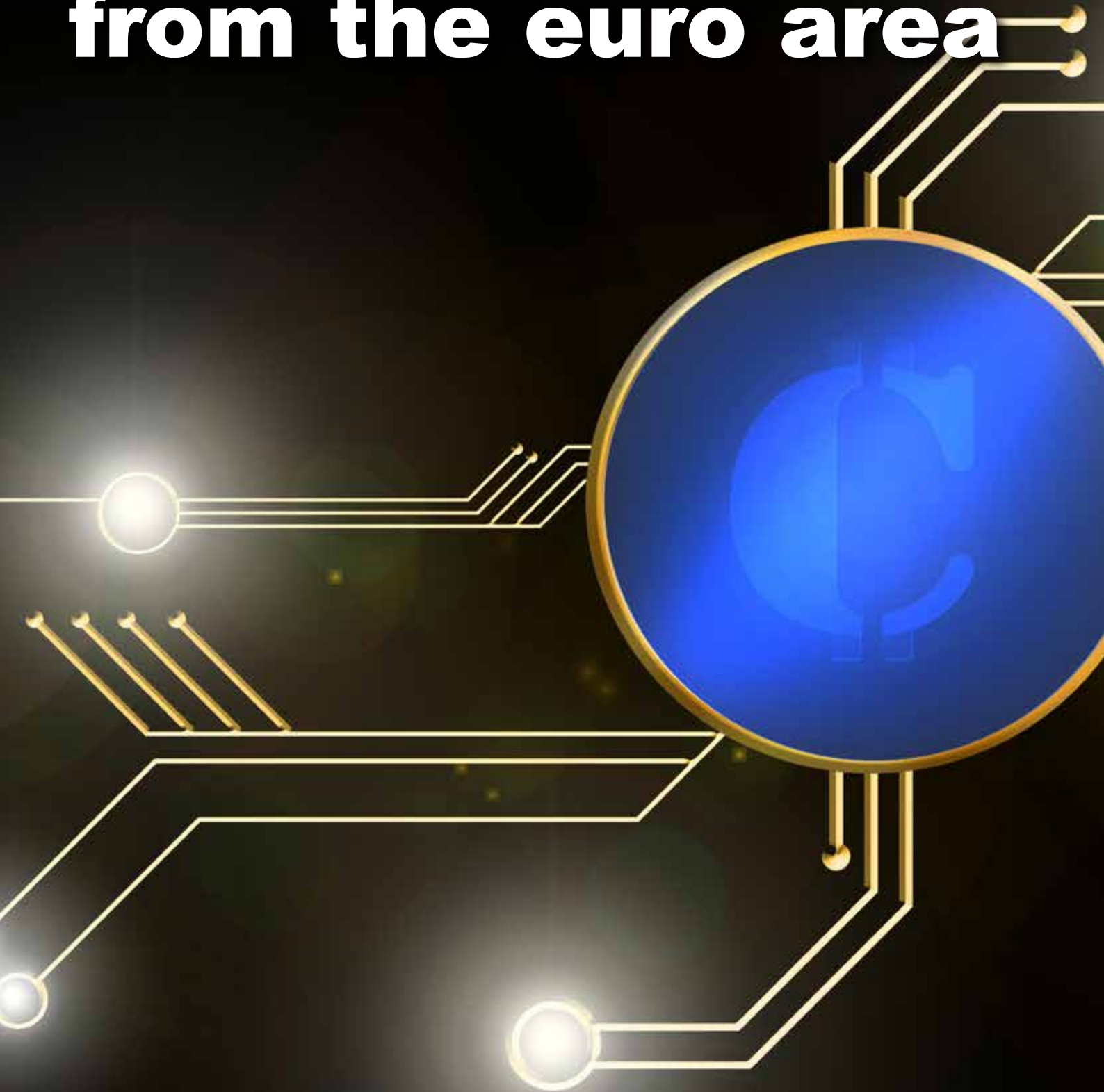
40. See European Central Bank (2023), "Crypto-assets: a new standard for banks", Supervision Newsletter, 15 February.

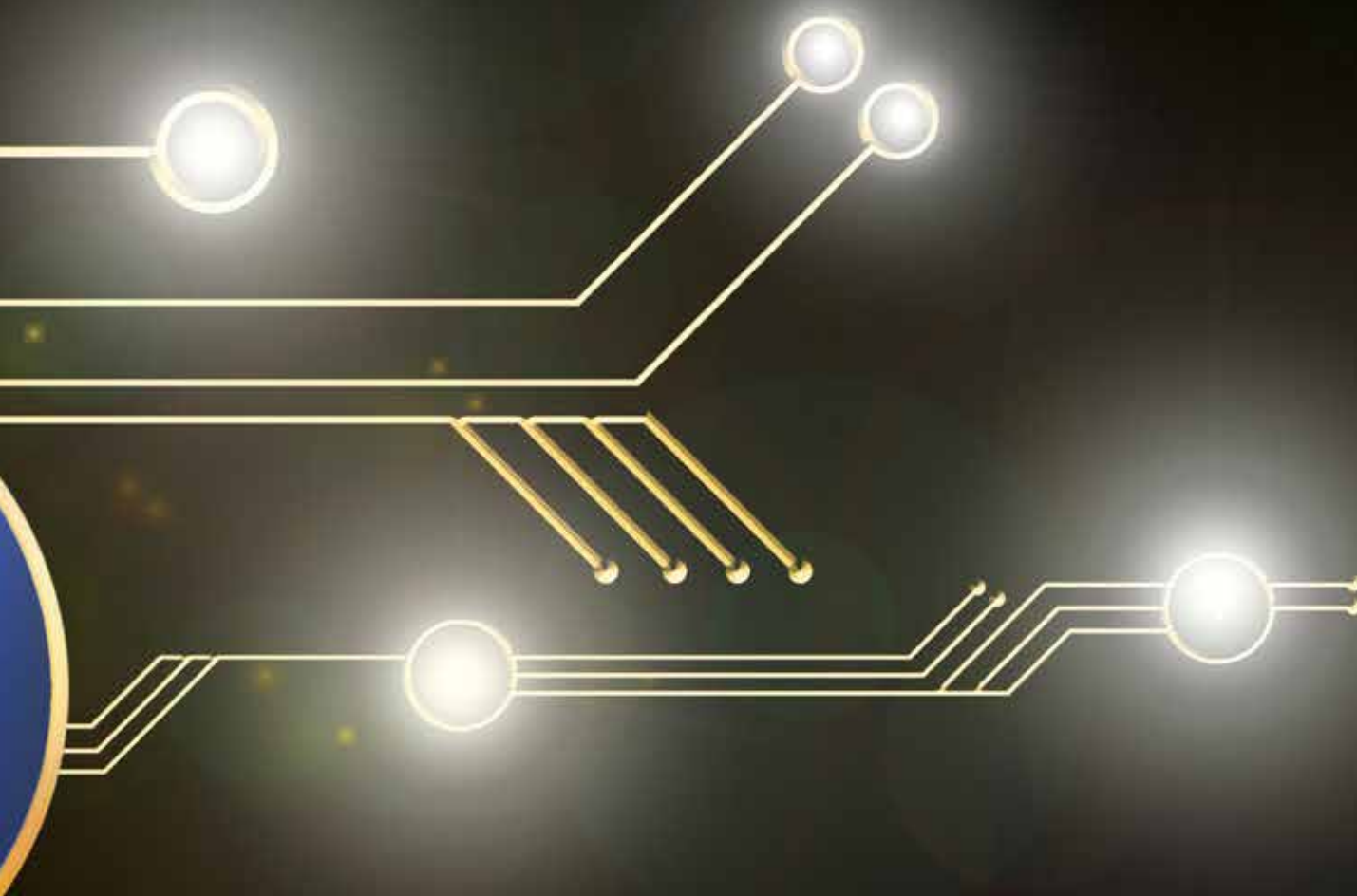
41. Panetta, F (2022), "Demystifying wholesale central bank digital currency", speech at the Deutsche Bundesbank's Symposium on "Payments and Securities Settlement in Europe – today and tomorrow", Frankfurt am Main, 26 September.

42. European Central Bank (2023), "Eurosysteem to explore new technologies for wholesale central bank money settlement", Frankfurt am Main, 28 April.

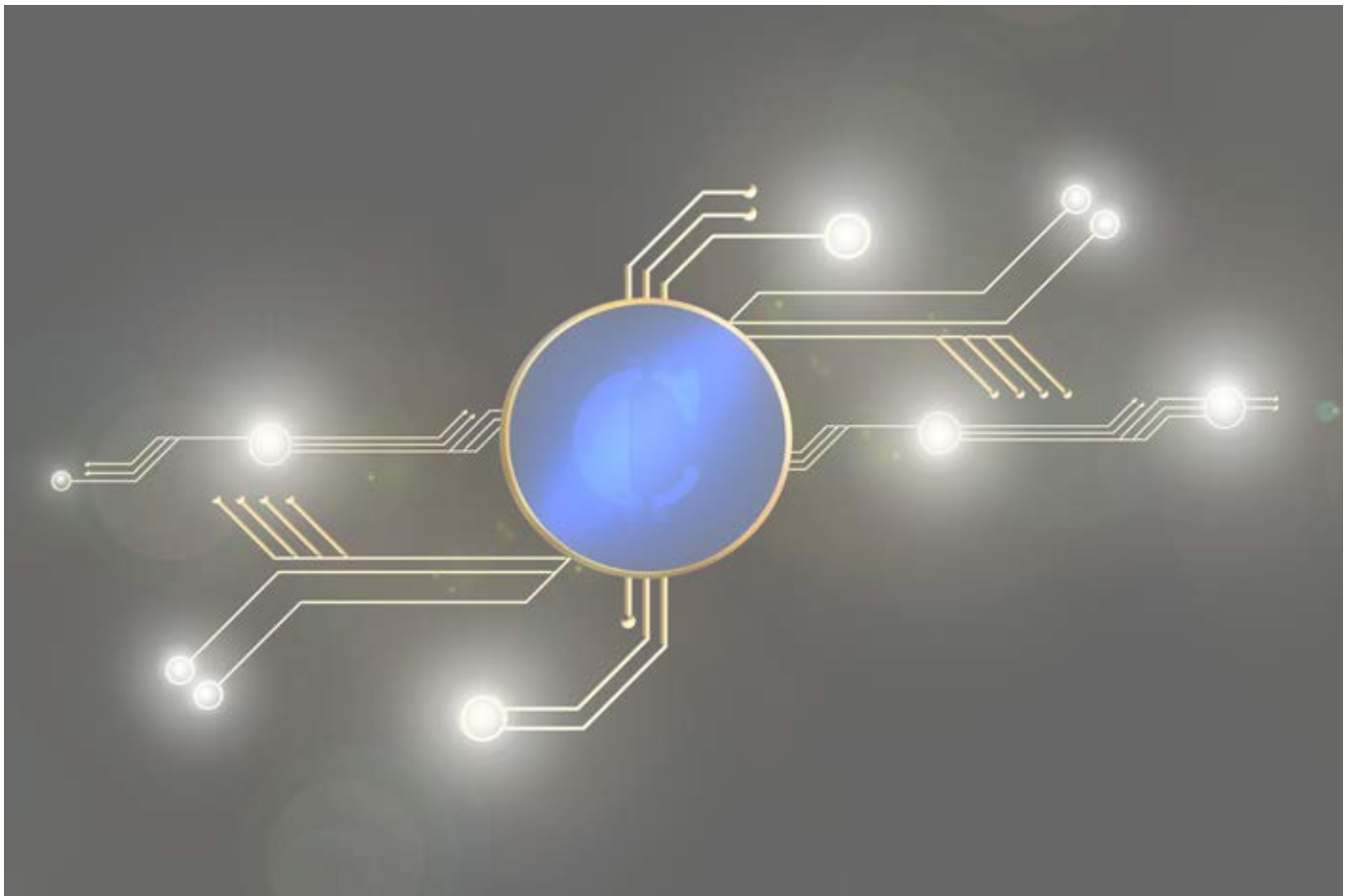
This article is based on a speech delivered at a panel on the future of crypto at the 22<sup>nd</sup> BIS Annual Conference, 23 June 2023.

# The value added of CBDCs: a view from the euro area





Maria Demertzis and Catarina Martins argue that the ECB is uniquely positioned to help create the global standard, and in the process to help protect the EU's global strategic interests



### Executive summary

Different jurisdictions have set out different reasons for creating central bank digital currencies (CBDCs). Some countries, particularly those with already-operational CBDCs for retail purposes, aim to promote financial inclusion. But in countries where most citizens have access to financial services, central banks are interested in CBDCs as an aspect of the increasing digitalisation of finance.

Central banks could also choose to use CBDCs to guarantee in full citizen's holdings (currently, deposits in commercial bank are only partially guaranteed), but this would trigger major changes in the financial system in terms of the role of commercial banks in intermediation and the role of fiat money. So far, central banks have not opted to go this way.

In the euro area, consumers have multiple payment options and a very efficient retail payments system. The currency enjoys high levels of trust and is not challenged by the emergence of private currencies, such as Bitcoin, or by the risk that cash, a monetary system's anchor, will disappear. Therefore, creating a CBDC for retail purposes in the euro area offers little obvious value added, at least for the foreseeable future.

However, there is a strong case for building a CBDC that banks could use for crossborder wholesale purposes (ie. with other currencies). Wholesale CBDCs could revolutionise the way that crossborder, cross-currency payments are made for two reasons.

1. Crossborder payments are currently slow and inefficient. Pilot projects have shown that wholesale payments with CBDCs can generate substantial time and cost savings.
2. Any two central banks that have operational wholesale CBDCs could settle transactions between themselves. This would be very different from the current system, as most settlements today are done via the dollar (and then the euro) infrastructure and use correspondent banks.

The euro area and the United States would have to consider carefully from a geopolitical perspective how wholesale CBDCs might affect their global economic standing. By developing a CBDC for wholesale purposes, the European Union would be able to contribute to developing the global standard.

## 1 Introduction

Central bank digital currencies (CBDCs), a digital equivalent of cash, are increasingly gaining traction. At least 114 jurisdictions, representing 95 percent of global GDP, are at some stage of developing a CBDC<sup>1</sup>. In 11 countries, CBDCs are now a reality and operate in parallel to their physical equivalent. But it is not necessarily easy for the consumer to understand the difference between a euro in coin or note form and a digital euro.

A good starting point in identifying the benefits of CBDCs is to understand the problem that cannot be solved through the increasing range of digital payment options provided by the private sector, and which therefore requires the state's intervention. This is important in explaining why the taxpayer might be asked to finance the creation of a CBDC.

We argue that CBDCs do have added value, but this is not the same for every country. In countries with high levels of financial exclusion and where there is a lack of modern and reliable digital payment systems, a CBDC can facilitate access to payments for many people. But in countries with ample payment solutions and where financial exclusion is a second-order problem, the justification is different.

Central banks worry that as finance becomes increasingly digitalised, two things might happen: first physical cash, the anchor of any financial system, will be displaced, and second, private currencies will become popular. Both could reduce the monopoly of sovereign money. Central banks fear this would compromise their ability to maintain monetary and financial stability.

CBDCs will have a dual purpose, just like their physical equivalent: for retail purposes, typically by consumers and small businesses to make daily payments, representing a small part of total payments; and for wholesale (ie. bulk) purposes by banks and other financial institutions, either domestically or cross border. In the euro area, most efforts to date have focused on how to develop a retail CBDC. Only recently<sup>2</sup> has there been also an attempt to advance thinking on the wholesale aspects as well.

On the retail side, the arguments for a digital euro put forward by the European Central Bank revolve around the speed of digitalisation of finance and the notion of strategic autonomy. The prospect of finance becoming predominantly and eventually even exclusively digital threatens the existence of sovereign money and compromises the role of its guardian, the central bank.

The ECB also argues that a big part of all payments is managed by foreign players, who collect sensitive information about EU citizens. A pan-European payment method that is very close to cash would help reduce this vulnerability. It would also help homogenise payments in the euro area and, given easier access, may help promote the international role of the euro.

However, these reasons, understandable as they might be, do not make a compelling case for a retail digital euro, at least for now. There is no imminent threat that digitalisation will

undermine the role of the physical euro. And there are easier ways, like through regulation, to promote the creation of a uniformly-accepted digital instant payment method in the EU, without having the taxpayer finance a CBDC.

Meanwhile, Europe's vulnerability arising from foreign players being present in the payment sphere is a very delicate argument. Does the EU want to create European payment players at the expense of competition?

Finally, the euro has acquired a very stable international role, second to, and quite far from, the dollar. At best, a digital equivalent can only expand the euro's international appeal at the margins. Other factors that pertain to a more integrated and well-governed European economy would advance more significantly its international acceptability.

There are also several technical choices, including limits on the amount of digital euros that any citizen can hold, or the fact that these deposits will not be remunerated, that also prevent the greater international use of the euro.

In addition, the Eurosystem has a very fast and efficient retail payment system and can still find efficiency gains within the current system. All these make the case for a digital euro even less attractive.

However, the EU and the global financial system can really benefit from developing wholesale CBDCs for making payments outside the euro area. This can generate efficiency gains for all payments made outside the EU. In our view, the creation of CBDCs globally has the potential of revolutionising crossborder payments.

For now, one reason why the dollar is the currency of choice globally is because it offers the infrastructure via which any two parties can settle a transaction. Any two countries that have CBDCs will have in principle the ability to settle transactions between them, bypassing the current dollar-based system.

Before this could happen however, there would have to be a commonly agreed global standard on how to design and use CBDCs. This is a significant barrier as it requires mutual recognition of legal systems and agreement on economic and technical design issues (BIS, 2022).

Global governance will be a major obstacle to this revolution and the euro area and the United States would have to consider carefully how their economic standing globally would be affected.

For example, current sanctions on Russia mean that countries that want to continue economic relations with Russia cannot do so in dollars or euros. Mutually accepted CBDCs between any two countries could allow them to continue trading and therefore bypass sanctions.

This reduces the need for the dollar infrastructure in international settlements and, importantly, raises the threshold for returning to the dollar when the option presents

itself in the future. International financial fragmentation encourages the development of CBDCs and may be part of the explanation for their rapid advancement in the past few years.

## 2 The emergence of CBDCs

We first clarify how CBDCs may differ from physical cash. Figure 1 describes the taxonomy of money. The digital form of a sovereign currency, a CBDC would be legal tender and fully guaranteed by public authorities. This contrasts with deposits in commercial banks which are guaranteed only in part: for example, €100,000 in the euro area and \$250,000 in the US.

As legal tender, CBDCs could not be refused as means of payment or for repaying debts in the respective jurisdictions.

However, legal tender laws are not sufficient to guarantee the acceptability of a new currency, as shown in the literature (Lotz and Rocheteau, 2002). In a two-sided market, acceptability comes not only from take-up by consumers, but also from take-up by merchants, who must invest in the necessary equipment. This has been shown to be an obstacle and would have to be addressed for CBDCs.

Also, CBDCs will be convertible one-to-one into other forms of central bank money – reserve balances or cash. A CBDC will be the closest substitute possible to physical cash, which settles near instantly.

However, while the technology may be able to ensure privacy, CBDCs will not allow for anonymity in the same way as physical cash. Last, holding CBDCs would mean holding a

direct liability with the respective central bank, very much like holding a banknote.

Central banks have become interested in the idea of CBDCs for three main reasons:

1. The emergence of cryptocurrencies. The Bitcoin revolution has provided means of payment that are privately issued and managed. If private money were to become successful, especially if it is in principle available to everyone globally, it could displace publicly issued money (cash) and fiat money that is issued by financial institutions but monitored and guaranteed in part by public authorities.

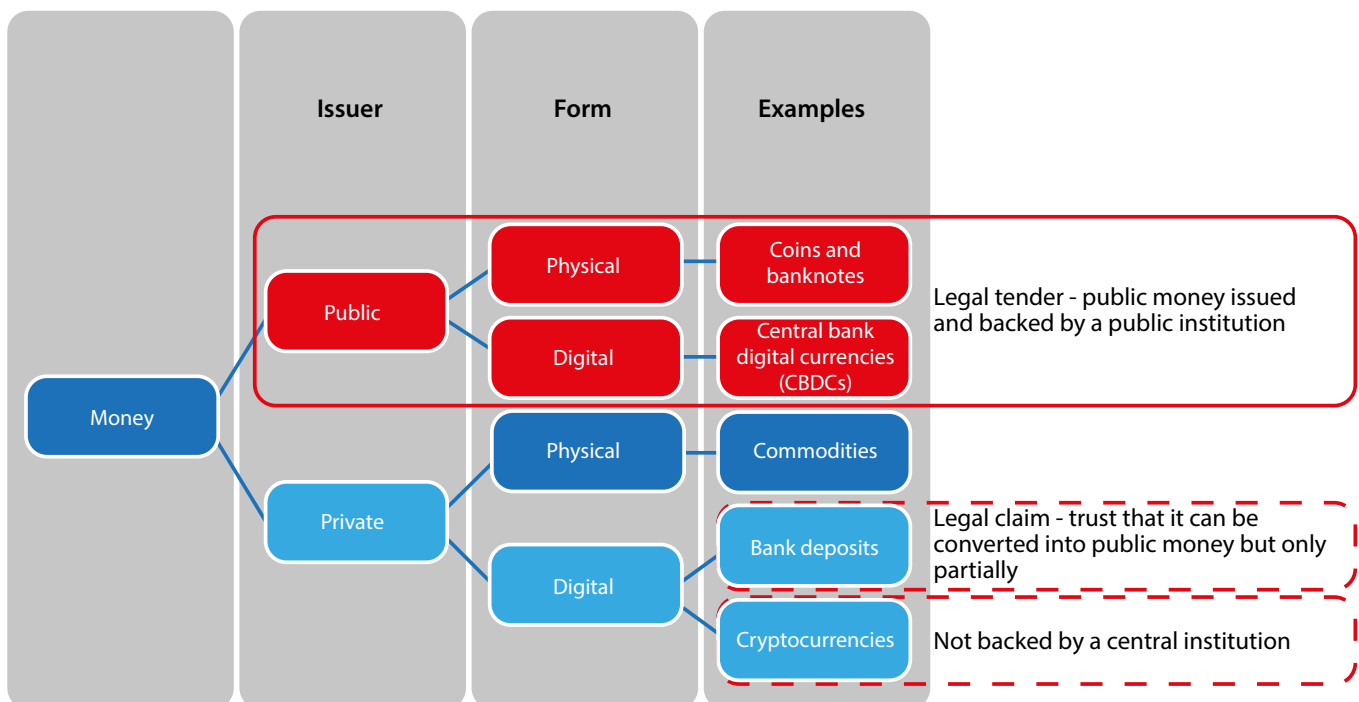
The existence of private money reduces the money base that central banks control, and therefore reduces their ability to control inflation and monitor financial stability.

With CBDCs, central banks would provide a digital equivalent of public money that would mimic the technological features of cryptocurrencies.

2. Increasing use of digital payments. The increased digitalisation of payments reduces the role and use of cash in most economies. Cash is often referred to as the anchor of the financial system, providing the necessary trust to the whole system.

The worry is that with decreasing use of cash in everyday transactions, physical cash would disappear, thus eroding trust in the system. A digital equivalent of cash

Figure 1. Taxonomy of money



Source: Adapted from Claeys et al (2018).



**Table 1. 2022 Global Crypto Adoption Index**

Overall index ranking	Country	Overall index ranking	Country
1	Vietnam	11	Nigeria
2	Philippines	12	Turkey
3	Ukraine	13	Argentina
4	India	14	Morocco
5	United States	15	Colombia
6	Pakistan	16	Nepal
7	Brazil	17	United Kingdom
8	Thailand	18	Ecuador
9	Russia	19	Kenya
10	China	20	Indonesia

Source: Chainalysis (2022).

would maintain the anchor while addressing the change in payment preferences.

3. Improve the reach and efficiency of payment systems. In several countries where many people do not have access to the financial system or digital payments, CBDCs offer increased financial inclusion.

This is potentially a game changer, and it is not a coincidence that those countries already using CBDCs, such as Nigeria and the Bahamas, have financial inclusion as a prime motive.

However, even for countries where financial exclusion is a small and isolated problem, there are benefits to improving the efficiency of payments.

This is particularly true for payments across borders, where CBDCs have the potential to create a global standard for international payments that is both efficient and universally accepted. This has the potential to revolutionise the way payments are settled between any two entities anywhere in the world.

While these three reasons are not exhaustive, they are the main arguments put forward by most countries. Other reasons that have been mentioned for developing CBDCs are a more cost-effective issuance and management of physical cash (Reserve Bank of India, 2022), support for the wide application of new technology and innovation, and the strengthening of operational resilience and cybersecurity<sup>3</sup>.

Central banks worldwide are experimenting with the technology to identify which type of CBDC, retail and/or wholesale, will provide value-added for their consumers and cover their needs.

### 3 The case for a retail CBDC

Currently, a consumer (payer) who wants to make a payment instructs their bank to make a transfer to the payee's account. The transaction involves an amount moving from one bank to the other and is settled by the central bank.

With CBDCs, however, both the payer and the payee will have accounts directly at the central bank. There will be no commercial banks involved<sup>4</sup>. Both the payment and the settlement will happen via the central bank directly. Furthermore, CBDCs could use new technology, such as distributed ledger technology (DLT), which is being explored.

The motive for deploying a retail CBDC depends crucially on how the three factors we have described in section 2 have impacted a particular jurisdiction. Are cryptocurrencies a threat to traditional forms of payment and possibly a source of financial instability?

Is physical cash redundant, therefore, threatening to de-anchor trust in the monetary system? Are there efficiency gains to be had in payments both for retailers and in wholesale?

#### 3.1 Cryptocurrencies are not taking over payments

The emergence of cryptocurrencies has democratised payments and financial services in that it has provided easier access by removing intermediaries.

However, cryptocurrencies have also proved to be very bad means of payment or store of value because their price has been very volatile (Demertzis and Martins, 2023).

In practice, the fear that cryptocurrencies could displace sovereign money has so far proved unfounded. Nevertheless, the experience is not the same around the world, and of course things might change in the future.

Despite its increasing size, the crypto market still represents a small fraction of the total financial system. According to the ECB, the value of all cryptoassets represented less than 1 percent of total global financial assets by April 2022 (Panetta, 2022a). They also represent a small component of the total value of payments.

The Global Payments Report (FIS, 2023) noted that cryptocurrencies are used much more for investment purposes than as a means of payment (77 percent compared

## “Wholesale CBDCs have the potential to change the current dollar-based system into one that is more diverse”

to 18 percent, according to their survey), and that the value of e-commerce payments using crypto represented 0.19 percent of global e-commerce value in 2022.

However, in Africa, Asia and Latin America, cryptocurrencies are increasingly playing a more active role. An index compiled by Chainalysis (2022) tried to capture a broad picture of cryptocurrency adoption by scoring countries on a variety of measures. It ranks only two high-income countries – the US and the United Kingdom – among the top 20 crypto adopters in 2022 (Table 1).

According to White and White (2022), Africa is the fastest-growing cryptocurrency market among developing regions. Between 2020 and 2021, Africa saw a 1,200 percent increase in cryptocurrency payments. Remittances, which are a very important source of income for the continent, have been greatly facilitated by cryptocurrencies (White and White, 2022).

In Nigeria, 10.3 percent<sup>5</sup> of the population owned cryptocurrency in 2022. The popularity of crypto in Nigeria is explained by financial exclusion, the lack of access to financial services. However, the weakness of the domestic currency and inflation is also a reason for the popularity of crypto alternatives.

A CBDC would help, at least in principle, to reduce financial exclusion, but would not by itself alleviate doubts about the strength of the sovereign currency.

### 3.2 Cash is still popular

The increased popularity of digital payments, particularly during the COVID-19 lockdowns, has reduced the need for cash. Nevertheless, cash still has an important role in point of sale (PoS) payments, particularly in less-developed regions and it is here to stay at least for the foreseeable future (BIS, 2023; FIS, 2023).

European Central Bank data for the euro area indicates that, despite the reduction in cash payments at the point of sale, from 79 percent in 2016 to 59 percent in 2022, cash remains the most popular payment method, especially for low-value transactions (Figure 2, top panel).

Citizens’ opinions on the importance of having the cash option demonstrates that a society without cash is nowhere close. The proportion of people considering cash ‘very important’ and ‘fairly important’ is above 50 percent for most euro area countries (Figure 2, bottom panel). This goes against the popular belief that cash will soon be abandoned.

Zamora-Pérez *et al* (2022) argued that, at the global level, the demand for cash has not decreased but rather has increased. This has happened despite the many new innovative solutions that have emerged for non-cash payments.

Some of this increased demand may be related to a precautionary savings motive: a means of storing value in a period of low-interest rates that spanned several years.

Additionally, even countries like Sweden, that have attempted to go totally cashless, have acknowledged that this might not be possible and that some, even if limited, amounts of cash will always be needed<sup>6</sup>. Armelius *et al* (2020) went as far as arguing that Sweden may be an outlier when it comes to the trend towards a cashless society, and not the trendsetter.

Nevertheless, it is important to acknowledge that the process of digitalisation will mean that the demand for physical cash will continue to decline. It is much more difficult to assess whether it will disappear completely or, like in Sweden, stabilise at a low level<sup>7</sup>.

Part of the answer will depend on how well CBDCs, as the closest digital equivalent to cash, can take over the role of cash in providing an anchor for the system. Choices in the design of the CBDC will determine how close to cash CBDCs can be. Privacy and anonymity, the thresholds for consumer holdings of CBDCs and whether it will be remunerated or not will be relevant in this regard.

### 3.3 Financial exclusion and the introduction of retail CBDCs

Perhaps the most compelling argument for introducing retail CBDCs is that it will increase financial inclusion. It is therefore not surprising that countries where a substantial part of the population is excluded from financial services were the first to introduce their national currencies in digital form.

Nigeria’s eNaira, for example, was launched at the end of 2021, with the aims of increasing remittances, fostering crossborder trade, improving financial inclusion, enabling the government to make welfare payments more easily and making monetary policy more effective<sup>8</sup>.

Providing the local population with access to digital payments and through them facilitating crossborder transactions in the form of remittances is particularly important, given the relevance of remittances as a source of income for the country. Figure 3 shows the level of financial inclusion worldwide.

Advanced economies such as euro area countries, the US and Canada have very high levels of financial inclusion. This is not the case for African countries or some Caribbean countries, where CBDCs are already being introduced.

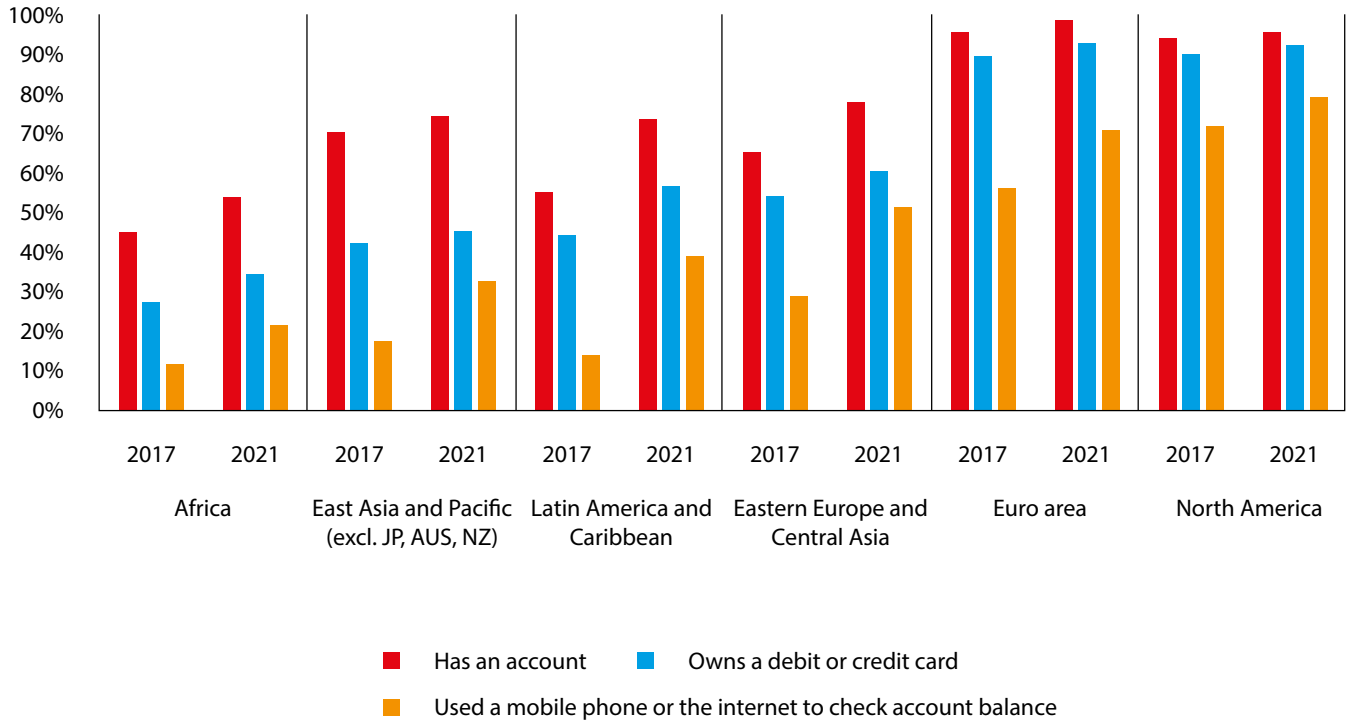
However, a CBDC by itself is not enough to reduce financial exclusion. For CBDCs to be adopted widely there needs to be broad access to internet connection, consumers need to have

**Figure 2. Payment preferences and the importance of cash in the euro area**



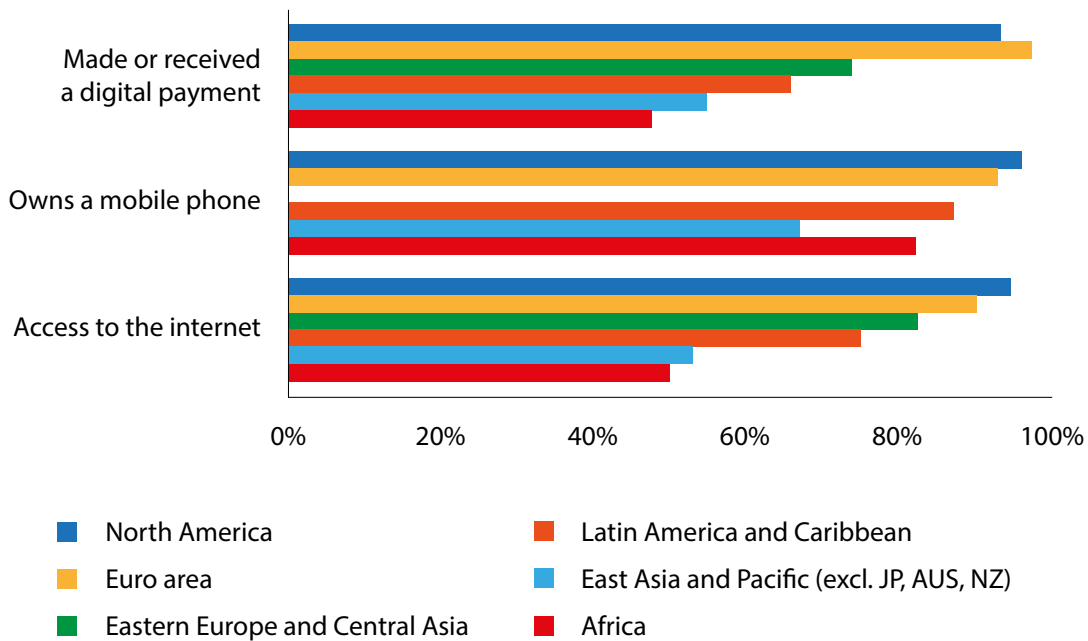
Source: Bruegel based on ECB (2022).

**Figure 3. Financial inclusion, three metrics**



Notes: JP = Japan, AUS = Australia, NZ = New Zealand.  
Source: Bruegel based on the Global Findex Database 2021.

**Figure 4. Digital infrastructure and penetration**



Source: Bruegel based on the Global Findex Database 2021.

mobile phones and merchants need to have invested in the equipment to accept payments in CBDCs.

Figure 4 shows that while a large proportion of the African population has access to a mobile phone, access to the internet by contrast is not as widespread (50 percent), which defines the limits of success that the introduction of a digital currency can have.

It is worth noting that even if there is digital access, it is not immediately the case that the introduction of CBDCs is the only or even the easiest way to improve financial inclusion, as shown by India and Brazil.

Officially launched in 2016, Unified Payments Interface (UPI)<sup>9</sup> is an Indian instant payment system widely adopted in the country. Given its huge success, it is seeking agreements with other countries to enable its acceptance abroad<sup>10</sup>.

The Central Bank of Brazil meanwhile launched a platform for real-time digital payments called PIX which has proved an enormous success. Since the launch, the number of registered users has increased continuously, reaching more than 137 million in May 2023<sup>11</sup>, which represents more than 60 percent of the country's population.

PIX does not require any exchange of personal data, as the payer just asks for the payee's QR code, and payment transfers happen at very high speed at any time of the day. According to the *2023 Global Payment Report*, average fees on PIX transactions are 0.22 percent of the transaction cost compared to 1 percent for debit cards and 2.2 percent for credit cards.

It would be very difficult to make a case for introducing a retail CBDC that can provide more value added than this to the consumer, a fact that explains why the Central Bank of Brazil's interest in introducing a CBDC is mainly for wholesale purposes<sup>12</sup>.

### 3.4 How popular are CBDCs?

Admittedly, digital equivalents of sovereign currencies have existed for no more than two years. But their uptake is not as impressive as authorities hoped.

Table 2 shows their uptake level for three countries, Nigeria, the Bahamas and China. Compared to total currency in

circulation, CBDCs represent very small amounts and in none of these cases above 0.17 percent of the total.

There are major problems to overcome. For the Sand Dollar, the CBDC of the Bahamas, introduced in October 2020, at least two issues might contribute to its small uptake<sup>13</sup>.

First, the public confuses the Sand Dollar with privately issued cryptocurrencies that are not immediately trusted. After the scandal around FTX, which was based in the Bahamas, the public grew very sceptical about any digital currency.

Second, the Sand Dollar is not readily accepted everywhere. Merchants do not all have the right equipment to accept it (a reason also given for the eNaira), even though they incur no cost for having the equipment.

This raises interesting questions about how to increase public acceptability. Historical incidents show that legal tender laws are not sufficient to guarantee the acceptability of a new currency (Lotz and Rocheteau, 2002).

In a two-sided market, acceptability comes not only in the form of consumer take-up, but also from merchants who must invest in the necessary equipment. This has been shown to be an obstacle. Zamora-Pérez *et al* (2022) found that providing the status of legal tender is not always the right means of increasing the popularity of a currency, as the cost of building the infrastructure necessary for a currency's adoption must be addressed.

However, Brazil's PIX payment system shows that mandatory participation of certain private players may be enough to create sufficient network effects, necessary for such markets to pick up. Similarly, Chinese public authorities are beginning to pay civil servants salaries in e-yuan<sup>14</sup>.

An important reason for low uptake is the lack of trust in the underlying currency. The digital representation of a currency is not sufficient to generate trust. It may allow for easier access but that can only help marginally. This is shown to be an important explanatory factor in the poor adoption of the eNaira in Nigeria<sup>15</sup>.

An interesting experiment is taking place in Zimbabwe, where authorities have issued a gold-backed token<sup>16</sup> as a way of improving the trust in the local currency, the Zim dollar.

**Table 2. CBDCs in circulation**

December 2022 values	Nigerian eNaira	Bahamian Sand Dollar	Chinese e-CNY
CBDC in circulation	3 billion eNaira	303,785 Sand Dollars	13.61 billion e-CNY
% of total currency in circulation	0.01%	0.17%	0.13%

Source: Bruegel based on Central Bank of Nigeria, Central Bank of The Bahamas and People's Bank of China.

Pegging the currency to a trusted asset is one way of trying to improve its stability and reputation. But it can also prove to be very expensive and ultimately non-credible. It will be interesting to see how far this effort goes to establish trust in the country's CBDC.

### 3.5 A mixed case for establishing a retail CBDC

We have so far discussed arguments that are regularly made to justify the introduction of a retail CBDC, and the experience of countries that have decided to launch CBDCs.

The process of digitalisation in payments has not made a clear case for CBDCs. If anything, there is still insufficient understanding among the public in countries where they are already in operation, of the difference between CBDCs and private cryptocurrencies.

The most compelling reason in favour of a CBDC is financial inclusion. But even for this, CBDCs are not a solution by themselves. Other elements, like digital infrastructure, need to be available. And the Brazilian example shows that when digital infrastructure is available, there are other solutions to financial inclusion. The key is finding effective ways of creating network effects.

The welfare implications of introducing retail CBDCs remain very understudied. Piazzesi and Schneider (2022) suggested that the emergence of digital currencies could distort the level of competitiveness in payment systems.

This is of relevance in jurisdictions, such as the euro area, where there are plenty of other available private payment alternatives. CBDCs have the potential to prevent useful innovation in private markets, therefore, reducing aggregate welfare.

On the other hand, Williamson (2022) took a different view. Competing with private means of payment, CBDCs will attract safe assets (deposits). This, he argued, is a way of managing safe assets in a better, more welfare-enhancing way compared to how private banks deal with this stock. CBDCs could in theory be a way of bypassing the imperfections of partial deposit guaranteed systems.

However, CBDCs are not the only way of guaranteeing deposits in full. Regulatory adjustments could do this instantly. Importantly, a regime that shifts deposits from private banks to the central bank will necessarily change the face of retail banking, an action that should not be done lightly. This has never been the motive behind introducing CBDCs and should not be dealt with as a mere unforeseen consequence.

There remain operational risks of introducing a retail CBDC. How will deposit holders retrieve them from private banks and place them at the central bank? Can this happen all at once, or will it trigger a run on the banks? There are also issues of cyber security and no system can be completely secure.

How does technology and the regulation that applies to it ensure financial stability? Finally, there is overwhelming evidence that consumers worry about privacy and anonymity (ECB, 2021; Noll, 2023).

While the technology that the ledger provides may offer novel solutions to a number of issues, the legal framework behind CBDCs is as credible as that of physical currencies and the institutions responsible for their issuance. A digital representation of a currency cannot solve governance shortcomings.

## 4 What is novel about wholesale CBDCs?

### 4.1 Improving wholesale payments

In the current system, bank reserves in the central bank available for wholesale transactions are already a form of central bank digital currency.

In other words, payers and payees in the wholesale market – banks – already have accounts at the central bank. This means that, unlike CBDCs for retail purposes, wholesale CBDCs do not need to be created from scratch. Rather, it is about using the most modern technology – distributed ledger technology (DLT) – to operate wholesale transactions.

Then the question is whether this new technology can provide efficiency gains in wholesale payments domestically, or between central banks across borders.

In various advanced economies, domestic payment systems are already very efficient: for example, real-time gross settlement systems such as T2, launched by the Eurosystem in March 2023 to replace the previous TARGET2 system, which settles euro-denominated payments, and the Fedwire Funds Service, which settles dollar-denominated transactions.

The systems are operated by the respective central bank. T2 is already meant to improve cost efficiency, provide greater cyber security and optimise the use of liquidity by harmonising and integrating various TARGET services<sup>17</sup>.

Even though wholesale settlement systems are quite advanced in the EU and in the US, the ECB and the Fed are both exploring how DLT can prove more efficient and secure for domestic interbank transfers<sup>18</sup>.

However, it is in crossborder and cross-currency transactions that DLT could provide sizeable gains. These transactions are subject to inefficiencies related to the current correspondent banking architecture (Hebert *et al* 2023). International payment systems have not kept up with the scale of crossborder financial flows in an increasingly open world.

The systems used are costly, slow and complex, which means that many participants from emerging markets and the developing world have been left with no access to the global financial system.

In an increasingly interconnected world, the need to improve crossborder payments has been established as a priority by the G20, with the Financial Stability Board leading in coordination of efforts<sup>19</sup>.

BIS (2021) provided a flavour of the potential gains from new ways of making crossborder payments. Table 3 summarises the results of such comparisons.

**Table 3. Efficiency gains from DLT compared to the current payment system**

	Current payment systems	New technologies for payments
Transaction time	3-5 days	2-10 seconds
Costs	<2% - >7%	As low as 1%
Accessibility	Via corresponding banks	Peer-to-peer

Source: Bruegel based on BIS (2021).

A transaction that currently takes three to five days could be completed in less than 10 seconds. Cost savings could also be significant, but their magnitude would vary between banks and regions. For example, average costs for overseas transactions amount to 2 percent in Europe, while in Latin America such costs amount to as much as 7 percent.

New payment solutions being explored could reduce this cost to as low as 1 percent. Savings would come from removing the network of correspondent banks in the chain of transactions and putting in place instead direct corridors that allow central banks to communicate.

Such efficiency gains were achieved in a pilot project called mBridges (BIS, 2022), in which the following central banks participated: the Hong Kong Monetary Authority, the Bank of Thailand, the Central Bank of the United Arab Emirates, the People’s Bank of China, and the BIS Innovation Hub Hong Kong Centre. Using DLT, the project established a multi-CBDC platform via which market participants could make crossborder peer-to-peer payments directly using central bank money.

Along with efficiency and cost gains, the project demonstrated an ability to reduce settlement risk and allow for the use of local currencies for international payments, a move away from having to rely on international tradable currencies like the dollar and the euro. The pilot showed though that several complex choices would have to be made.

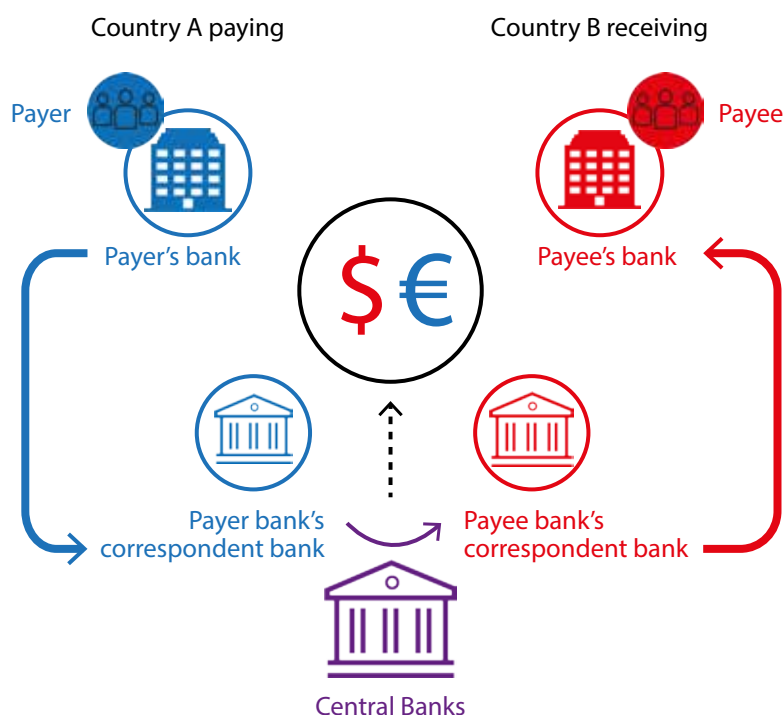
**4.2 From a dollar-centric system to bilateral settlements**

The international financial system has long relied on the dollar, which has meant having to rely on the dollar settlement system. Figure 5 describes the current system of economic exchange between any two countries.

A company in country A, the payer, instructs its bank to make a payment; the bank then contacts its correspondent bank. The latter will engage with the correspondent bank in country B, which finalises the cycle by contacting the payee’s bank and crediting the due amount to the receiver’s account.

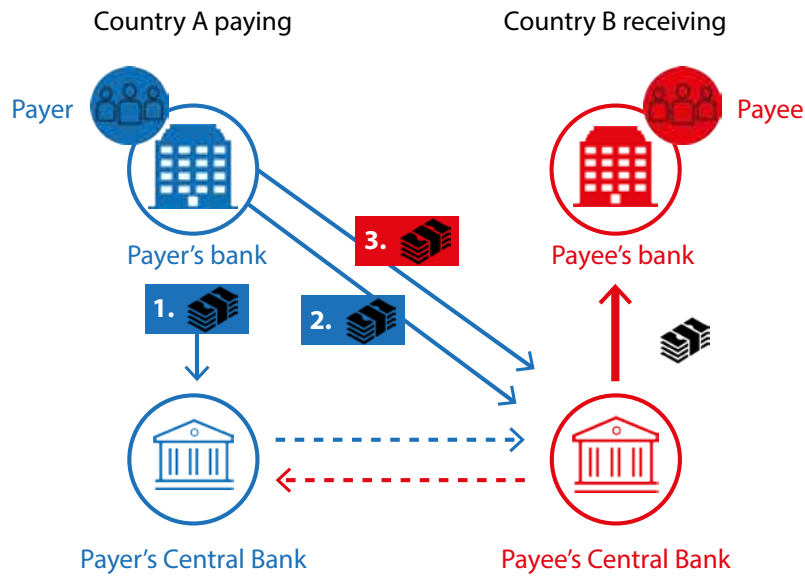
Depending on the currency in which the exchange is made, the respective central bank will be involved. It is important to note that the dollar is by far the main currency of choice

**Figure 5. The dollar (euro) based international financial system**



Source: Bruegel based on BIS (2022).

**Figure 6. Commercial banks' CBDC accounts at a central bank**



Source: Bruegel.

globally in trade invoicing (more than half of global trade) and foreign exchange transactions (almost 90 percent of the total volume) (Moronoti, 2022). This also means that US settlement authorities are involved in finalising most global transactions.

Wholesale CBDCs would change this system. Central banks would have dedicated corridors (like the mBridges described above) for settlement directly between themselves. There would be no need for correspondent banks.

The payer's bank would have an account directly at the country's central bank, which in turn would communicate directly with the central bank in the payee's country.

This would mean more diversification of currency pairs, with increased liquidity for currency pairs that do not include the dollar. Also, more direct relationships between parties would lead to the de-risking of transactions.

The payer's bank can pay the payee's bank in one of three ways (Figure 6). First, it can hold domestic currency in an account in the domestic central bank, in which case the two central banks will transact using a pre-agreed currency.

Second, the payer's bank could have a domestic currency account at the foreign central bank and would pay with its domestic currency.

Third, the payer's bank would have a foreign currency account at the foreign central bank and would pay with this.

The first method is closest to what happens today; the dedicated corridors between central banks will allow the

settlement of any transaction. The mBridge pilot showed that the third method is the most efficient because it involves the fewest steps between the two transacting parties.

An important issue that DLT solves is interoperability. The current system does not allow for interoperability because communication needs to happen through secure messages. If countries use different systems, they run the risk of not being able to communicate between themselves.

Blockchain<sup>20</sup> technology has provided solutions that allow communication between parties via corridors. But before such dedicated corridors are created, a number of choices need to be made on technical, legal (and governance) and economic issues.

For the system to function, established rules to provide legal certainty are needed. Would current rules for holding foreign securities be sufficient for wholesale CBDCs, or would a new legal framework be needed?

Global coordination on this issue would be preferable and indeed necessary for wholesale CBDCs to challenge the current ways of settling international transactions. Arguably, the governance of wholesale CBDCs will be the most important obstacle to their uptake.

But bilateral recognition of legal systems would also be sufficient for any two central banks to settle transactions between them. Wholesale CBDCs then have the potential to change the current dollar-based system into one that is more diverse. It is not immediately obvious why two countries that trade in dollars would prefer to trade in their own currencies.



### Box 1. The ECB's thinking on the retail digital euro

- Target users: Primarily euro area residents (individuals, merchants and governments). Possible extension of access to non-residents.
- Intended as: means of payment and not form of investment (avoid excessive migration of bank deposits to the central bank). It will not be remunerated.
- Availability: both online and offline solutions envisaged.
- Limits: €1 trillion to 1.5 trillion total, meaning around €3,000 to €4,000 digital euro per capita. Limits apply to individuals, who can have only one account. Merchants would not have digital-euro holdings but would accept payments in digital euros.
- Privacy: the digital euro should replicate as much as possible cash-like features, but no full anonymity. Possibly, greater privacy for low-value low-risk payments.
- Issue and settlement: responsibility of the Eurosystem; digital euro is direct liability of the central bank (convertible one to one with the euro).
- Onboarding, distribution and services: responsibility of banks and other payment service providers (supervised financial intermediaries). These would perform the regular onboarding procedures (eg. anti-money laundering checks) and can develop consumer-oriented services beyond the core mandatory functionalities.
- Access and use: via existing apps provided by the PSPs or via an Eurosystem app. Payments done using technology such as contactless or QR code.

However, if one of them was sanctioned by the US, for example, then the dollar would no longer be available to them. A settlement system that is operational between any two central banks would guarantee the continuity of economic activity.

While an alternative settlement system by itself does not automatically reduce the appeal of the dollar as the currency of choice, it does reduce the threshold for using other currencies.

Many countries that are thinking about strengthening their resilience will no doubt examine the geopolitical importance of ensuring functioning settlement system. It is no coincidence that so many central banks, including China's, are eager to develop a digital equivalent of their currency.

It is not difficult to imagine CBDCs being weaponised for geopolitical reasons, as central bank reserves have been since Russia's invasion of Ukraine<sup>21</sup>.

However, many issues remain. On the governance side, choices will have to be made on issues including data privacy, preserving anonymity, monetary sovereignty and conflict settlement.

The mBridges pilot showed that the most efficient payment method would be for foreign companies to have accounts at the domestic central bank if they trade domestically.

What would that mean for monetary sovereignty? How would potential conflicts be resolved? Equally, economic issues would also have to be decided. How would countries

deal with counterparty risk? Would the domestic central bank agree to carry that risk on behalf of foreign institutions?

### 5 A digital euro: design options and its future

#### 5.1 The ECB's thinking so far

The Eurosystem is considering the introduction of the digital euro for retail use. The digital euro project is at time of writing in the investigation phase, which will come to an end in October 2023 at which point the ECB will decide on the next steps<sup>22</sup>.

Three progress reports have been issued so far (Box 1). The first progress report, published in September 2022, focused on the functionalities and limits for users. It concluded that the consumer should be able to pay with digital euros online and offline, and that the digital euro should mimic cash-like features as much as possible.

While privacy is to be ensured, the digital will not be fully anonymous because of worries about money laundering. Also, it should be used exclusively for payments and not as a form of investment.

This choice also reflects financial stability considerations, and particularly the prevention of excessive migration of bank deposits to the central bank, which could disrupt the current financial system. To this end, individual holdings should be limited to between €3,000 and €4,000 (Panetta, 2022b).

The second progress report, issued in December 2022, focused on defining the settlement and distribution roles and ensuring an easy conversion between digital euros and cash/private money.

The Eurosystem intends to retain full control over the issuance/redemption and settlement of digital euros, but has not decided on the technology to use – traditional, DLT or a combination of both.

The distribution and direct interaction with end users would be the responsibility of banks and other payment service providers. They would develop the interfaces and services – such as wallets – and perform regular anti-money laundering checks.

The third progress report (April 2023) clarified that payments would be done using technology already familiar to most European citizens, for example, contactless or QR codes, through either the existing apps of intermediaries or a Eurosystem app, depending on the user's preference. The April 2023 report also discussed the possibility of access for non-euro area residents.

The primary focus of the initial releases of the digital euro however will be for euro area residents only (individuals, merchants and governments), even though access to non-residents could be possible if they have an account in the euro area. Access for residents of the European Economic Area and selected third countries could be envisaged in later releases of the digital euro.

A last important point made in this report is that the digital euro will not be programmable money. This means that the ECB would not determine or interfere with where, when and for which purpose the digital euro is used.

Early in the second half of 2023, the Eurosystem will present the overall thinking on how to design a digital euro. Box 1 summarises its thinking so far.

The ECB will also investigate cross-currency functionalities as a way of improving the transparency and efficiency of crossborder payments (as endorsed by the G20). This functionality could be implemented by ensuring interoperability between the digital euro and other CBDCs or by relying on a common infrastructure that could host multiple CBDCs.

## 5.2 Other advanced economies' approaches to CBDCs

Several countries are more advanced than the euro area in this process and have decided not to issue a retail CBDC in the foreseeable future. This is mainly because they do not see CBDCs as offering added value in terms of payment options or to their citizens.

This is the situation in Canada<sup>23</sup>, Denmark (Danmarks Nationalbank, 2022), Japan<sup>24</sup>, Sweden (Swedish Government, 2023) and Switzerland<sup>25</sup>. In the United Kingdom, the Chair of the House of Lords Economic Affairs Committee argued that a CBDC was *"a solution in search of a problem."*

Similarly to the euro area, the US is still investigating whether to issue a retail CBDC, but is finding it difficult to justify it. In April 2023, Fed Governor Michelle W Bowman said *"it is difficult to imagine a world where the trade-offs between benefits and*

*unintended consequences could justify a direct access CBDC for uses beyond interbank and wholesale transactions"* (Bowman, 2023).

This does not mean, however, that their respective central banks are not investigating and preparing for a possible future launch, should the conditions and assessment change. Importantly, the idea of a wholesale CBDC is being pursued by some.

For instance, Switzerland is participating in various projects focused on better understanding the wholesale potential: 'Project Helvetia', a collaboration between the Swiss National Bank, the BIS and SIX, a commercial infrastructure operator, and 'Project Jura', which the Banque de France has also joined. Other countries, including the UK and the US, have expressed their potential interest in a wholesale CBDC.

It is important to note that the decision to issue a CBDC is ultimately political, mostly taken by the respective governments, rather than the central bank. Governments' positions can change over time, as developments of CBDCs in other countries advance and they gain a better understanding of the operational, legal, financial and economic implications of CBDCs (whether retail or wholesale).

## 5.3 The future of the digital euro

A digital euro for wholesale purposes has substantial potential for reducing frictions in cross-border (ie. beyond the euro area borders) payments. As explained earlier, these improvements could bring a fundamental change in the international financial settlement system.

Governance will be crucial. Legal issues, economic choices and technical uniformity would all need to be agreed at global level for CBDCs to challenge the status quo in global wholesale payments. But the Eurosystem cannot afford to be left out of this debate.

Moreover, as the ECB has invested in understanding the workings of CBDCs, it is well placed to contribute to setting the global standard and helping promote global coordination.

As a standard-setter, the EU could exert influence as societies adapt to an increasingly digitalised financial ecosystem. As an active participant and contributor to the debate, the EU should aim to protect its global interests.

When it comes to using a digital euro for retail purposes inside the euro area, we do not see a compelling case for issuance at this stage. There are many issues to clarify, and a digital euro might bring significant changes to the financial system that need to be considered carefully.

### *Privacy vs anonymity*

In response to the public's concerns about privacy, the ECB has been very clear about protecting consumer data when using the digital euro. However, privacy is not the same as anonymity and the ECB is also clear that transacting in digital euros will not be anonymous. This makes the digital euro only an imperfect substitute for cash.

As 42 percent (Figure 3) of the value of all transactions in the euro area in 2022 was in cash, there is still a great deal of anonymity in the way that payments are made currently. As one of the motivations for launching CBDCs was the need to provide a digital equivalent of cash, this is a clear shortcoming.

#### *Cash as the anchor of the financial system*

Would the elimination of cash in the future destabilise the system? It is often argued that cash is the anchor of trust in the financial system. In a world of fiat money, deposits are only partly guaranteed. For the consumer, the only other money guaranteed in full by the sovereign is cash. Being able to revert to cash at any time is what provides trust in the system.

Can a CBDC that is also guaranteed in full provide the equivalent anchor to the system? The answer to this is important and citizens will need to be assured that digital money is at the very least not programmable (ie. money with built-in rules that impose restrictions on how it is used).

Also, it is difficult to see how digital cash can provide the anchor to the system if consumers are allowed to have only limited holdings of CBDCs (see below).

#### *Limited holdings*

If the amount of digital euros allowed per person is small, as is currently the intention (between €3,000 and €4,000 per person), then the digital euro risks never taking off. Why would the euro area consumer opt to have one more account, this time at the central bank, if it is only of limited use? The amount allowed would need to be at least equal to the amount in deposits that is currently guaranteed (€100,000) for the consumer to have a motive to switch.

Moreover, the consumer has ample payment alternatives in the euro area. If the worry is that payment alternatives are country-specific, then imposed coordination (like the IBAN system for bank deposits) would provide an adequate solution. Regulation therefore can achieve the same result with much less effort.

If on the other hand, the ECB were to allow unlimited amounts of digital euros to be held in the form of deposits, that could potentially be a game changer. Having all deposits guaranteed by the state is an attractive proposition for the consumer.

But for her to switch, she would still need to see interest paid on these deposit accounts, or she would be left worse off. But interest-bearing deposits at the central bank would transform the roles of both the central banks and financial intermediaries.

Commercial banks, which are currently mainly funded by deposits, would have to find alternative operating models. What would be the cost to the system of providing such a guarantee? Or would the amount of money in circulation necessarily have to decrease?

The ECB and other central banks have not justified their interest in CBDCs as a way of altering the financial system. Rather, their thinking focuses on imposing as small a distortion

as possible. With that in mind, digital euro holdings would remain very small.

#### *European strategic autonomy*

Last, the ECB also uses the argument of strategic autonomy to justify its interest in the project. What is the risk in current European payment systems that requires intervention? An ECB report on open strategic autonomy from a central banking perspective (ECB, 2023) mentioned that “non-European payment-related service providers handle around 70% of European card payment transactions.”

A retail CBDC could address this concern though, as explained above, it might also distort competition and innovation in domestic payment systems. The strategic autonomy argument adds a layer of protectionism that would need to be very carefully justified economically and politically, or risk going against the EU’s own principles.

De-risking is a much better argument: asking the question of how a digital equivalent of the sovereign currency can prepare society for what cannot be controlled (eg. a system that is potentially fully digitalised and where the global appeal of CBDCs is high).

#### *Communication gap*

There is still a gap in the public’s understanding of the extent to which a digital euro is a useful innovation. The ECB needs to take time to explain the reasons for the digital euro in ways that will make a tangible difference to public perceptions.

Without public support, the project will not take off. Evidence from countries that have launched CBDCs highlights the importance of clear understanding among citizens. In the meantime, the efforts the ECB has made to understand the complexities of a digital euro are very useful.

## **6 Conclusions**

With 114 central banks worldwide at some stage of developing a digital equivalent of their sovereign currency, it is difficult to believe that the idea will not take off or that there is no added value in having a CBDC. However, there is a gap between central banks’ motivations for launching CBDCs and the general understanding of what that motivation is.

Central banks in countries where financial exclusion is a first-order problem are keen to use CBDCs to provide wide access to payments. But this is not useful if there is insufficient digital infrastructure and penetration in the country.

Moreover, if the underlying sovereign currencies are weak and the institutions behind them lack credibility, the digital representation of the currency is not necessarily the tool for building trust.

Nevertheless, inclusion and protecting consumers from the pitfalls of cryptocurrencies are good societal objectives that can provide visible welfare improvements.

But for countries or jurisdictions (like the euro area) where these problems are much less prevalent, the case for establishing a

retail CBDC is not strong. That does not necessarily devalue the efforts to understand the choices and trade-offs that must be considered in the process of creating a CBDC.

Moreover, as an attempt to prepare for a future in which the global financial system is more digitalised or there is a need to rethink intermediation, the ECB's efforts are worthy investments.

However, more efforts should be made in terms of creating wholesale CBDCs to facilitate cross-border payments outside the euro area. There are immediate and sizeable savings to be had in both time and costs. Wholesale CBDCs also have the potential to change the international financial system and therefore the EU's position in it.

From the perspective of the US (and to a lesser extent the EU), as more countries seek to create wholesale CBDCs, the greater

the threat of a fragmented global financial system, with other currencies taking a more prominent role.

It may be early days, but the EU must explore how to reap the benefits of new technology in wholesale payments, while protecting the global cooperation from which it benefits.

Given the work it has already done on the retail digital euro and the EU's very advanced payment methods, the ECB is uniquely positioned to help create the global standard, and in the process to help protect the EU's global strategic interests. ■

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#### Endnotes

1. See the Atlantic Council central bank digital currency tracker: <https://www.atlanticcouncil.org/cbdctracker/>
2. See European Central Bank press release of 28 April 2003, 'Eurosystem to explore new technologies for wholesale central bank money settlement', <https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.pr230428~6a59f44e41.en.html>
3. See Danmarks Nationalbank (2022) for more detail.
4. This is the basic argument, though most central banks agree that CBDC accounts will be managed by private institutions.
5. See <https://triple-a.io/crypto-ownership-nigeria-2022/>
6. See <https://sweden.se/life/society/a-cashless-society>
7. According to FIS (2023), the value of cash transactions in Sweden was 8 percent of the total value of point-of-sale transactions.
8. See State House, Abuja press release of 25 October 2021, 'At Official Launch of eNaira, President Buhari Says Digital Currency will Boost Nigeria's GDP by \$29 billion in 10yrs', <https://statehouse.gov.ng/news/at-official-launch-of-enaira-president-buhari-says-digital-currency-will-boost-nigerias-gdp-by-29-bn-in-10yrs/>
9. See <https://www.npci.org.in/what-we-do/upi/product-overview>
10. See for example Liquid Group/NPCI International Payments Limited press release of 13 September 2021, <https://en.pnasia.com/releases/apac/liquid-group-to-power-upi-qr-acceptance-in-10-asian-markets-332416.shtml>
11. See <https://www.bcb.gov.br/estabilidadefinanceira/estatisticaspix>
12. Grace Broadbent, 'Brazil wants to build on digital payment success with CBDC pilot', Insider Intelligence, 8 March 2023, <https://www.insiderintelligence.com/content/brazil-wants-build-on-digital-payment-success-with-cbdc-pilot>
13. Paul Blustein, 'Can a Central Bank Digital Currency Work? The Bahamas Offers Lessons', Centre for International Governance Innovation, 14 December 2022, <https://www.cigionline.org/articles/can-a-central-bank-digital-currency-work-the-bahamas-offers-lessons/>
14. Iori Kawate, 'Chinese cities begin to pay public employees in digital yuan', Nikkei Asia, 5 May 2023, <https://asia.nikkei.com/Business/Markets/Currencies/Chinese-cities-begin-to-pay-public-employees-in-digital-yuan>
15. Web3Africa, 'One year into Nigeria's adoption of the eNaira', Further Africa, 8 November 2022, <https://furtherafrica.com/2022/11/08/one-year-into-nigerias-adoption-of-the-enaira/>
16. Camomile Shumba, 'Zimbabwe to Introduce Gold-Backed Digital Currency: Report', CoinDesk, 24 April 2023, <https://www.coindesk.com/policy/2023/04/24/zimbabwe-to-introduce-gold-backed-digital-currency-report/>
17. See European Central Bank press release of 21 March 2023, 'Successful launch of new T2 wholesale payment system', <https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.pr230321~f5c7bddf6d.en.html>
18. See European Central Bank press release of 28 April 2023, 'Eurosystem to explore new technologies for wholesale central bank money settlement', <https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.pr230428~6a59f44e41.en.html> and <https://www.newyorkfed.org/aboutthefed/nyic/facilitating-wholesale-digital-asset-settlement>
19. See Financial Stability Board press release of 13 October 2020, 'FSB delivers a roadmap to enhance cross-border payments', <https://www.fsb.org/2020/10/fsb-delivers-a-roadmap-to-enhance-cross-border-payments/>
20. Blockchain is a form of DLT in which all transactions are recorded and organised in linked digital blocks. For more details on DLT and blockchain see Demertzis and Martins (2023).
21. See Maria Demertzis, 'Central Bank digital currencies as weapons of finance', Bruegel, 14 December 2022, <https://www.bruegel.org/comment/central-bank-digital-currencies-weapons-finance>
22. See [https://www.ecb.europa.eu/paym/digital\\_euro/shared/pdf/Digital\\_euro\\_project\\_timeline.en.pdf](https://www.ecb.europa.eu/paym/digital_euro/shared/pdf/Digital_euro_project_timeline.en.pdf)
23. See <https://www.bankofcanada.ca/digitaldollar>
24. See Bank of Japan press release of 9 October 2020, 'The Bank of Japan's Approach to Central Bank Digital Currency', [https://www.boj.or.jp/en/about/release\\_2020/data/rel201009e1.pdf](https://www.boj.or.jp/en/about/release_2020/data/rel201009e1.pdf)
25. See <https://www.swissbanking.ch/en/topics/digitalisation-innovation-and-cyber-security/digital-currencies-and-payment-systems>. Also, confirmed in January 2023 by a Swiss National Bank governing board member; see <https://www.cnn.com/video/2023/01/12/swiss-national-bank-says-it-doesnt-need-a-cbdc.html>

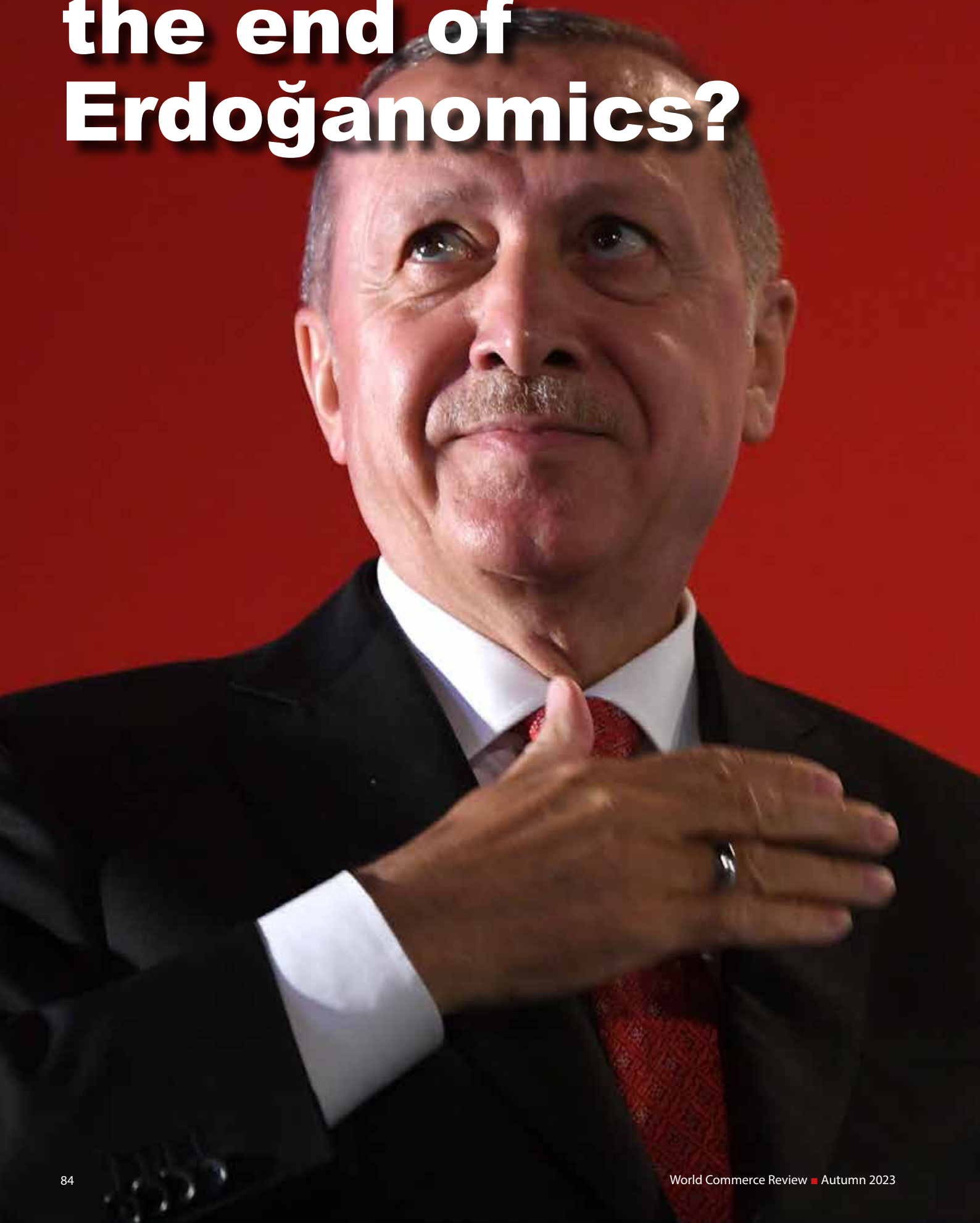
## References

- Armeliu, H, CA Claussen and A. Reslow (2020) 'Withering Cash: Is Sweden ahead of the curve or just special?' Working Paper Series No 393, Sveriges Riksbank, available at <https://www.riksbank.se/globalassets/media/rapporter/working-papers/2019/no.-393-withering-cash-is-sweden-ahead-of-the-curve-or-just-special.pdf>
- BIS (2021) Inthanon-LionRock to mBridge: Building a multi CBDC platform for international payments, BIS Innovation Hub, Bank for International Settlements, available at <https://www.bis.org/publ/othp40.htm>
- BIS (2022) Project mBridge: Connecting economies through CBDC, BIS Innovation Hub, Bank for International Settlements, available at <https://www.bis.org/publ/othp59.htm>
- BIS (2023) 'Digital payments make gains but cash remains,' CPI Brief No 1, Bank for International Settlements, available at [https://www.bis.org/statistics/payment\\_stats/commentary2301.pdf](https://www.bis.org/statistics/payment_stats/commentary2301.pdf)
- Bowman, MW (2023) 'Considerations for a Central Bank Digital Currency,' speech at Washington DC, 18 April, available at <https://www.federalreserve.gov/newsevents/speech/bowman20230418a.htm>
- Chainalysis (2022) The 2022 Geography of Cryptocurrency Report, available at <https://go.chainalysis.com/geography-of-crypto-2022-report.html>
- Claeys, G, M Demertzis and K Efstathiou (2018) 'Cryptocurrencies and monetary policy,' Policy Contribution 10/2018, Bruegel, available at <https://www.bruegel.org/policy-brief/cryptocurrencies-and-monetary-policy>
- Danmarks Nationalbank (2022) 'New types of digital money,' Analysis No. 8, available at [https://www.nationalbanken.dk/en/publications/Documents/2022/06/ANALYSIS\\_no%208\\_New%20types%20of%20digital%20money.pdf](https://www.nationalbanken.dk/en/publications/Documents/2022/06/ANALYSIS_no%208_New%20types%20of%20digital%20money.pdf)
- Demertzis, M and C Martins (2023) 'Decentralised finance: good technology, bad finance,' Policy Brief 09/2023, Bruegel, available at <https://www.bruegel.org/policy-brief/decentralised-finance-good-technology-bad-finance>
- ECB (2021) Eurosystem report on the public consultation on a digital euro, European Central Bank, available at [https://www.ecb.europa.eu/pub/pdf/other/Eurosystem\\_report\\_on\\_the\\_public\\_consultation\\_on\\_a\\_digital\\_euro~539fa8cd8d.en.pdf#page=11](https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf#page=11)
- ECB (2022) Study on the payment attitudes of consumers in the euro area (SPACE) – 2022, European Central Bank, available at [https://www.ecb.europa.eu/stats/ecb\\_surveys/space/html/ecb.spacereport202212~783ffd46e.en.html](https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffd46e.en.html)
- ECB (2023) 'The EU's Open Strategic Autonomy from a central banking perspective: Challenges to the monetary policy landscape from a changing geopolitical environment', International Relations Committee Work stream on Open Strategic Autonomy No. 311, European Central Bank, available at <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op311~5065ff588c.en.pdf>
- FIS (2023) The Global Payments Report, available at [https://www.fisglobal.com/-/media/fisglobal/files/campaigns/global-payments-report/FIS\\_TheGlobalPaymentsReport\\_2023.pdf](https://www.fisglobal.com/-/media/fisglobal/files/campaigns/global-payments-report/FIS_TheGlobalPaymentsReport_2023.pdf)
- Hebert, J, E Moshhammer and H Barth (2023) 'Wholesale central bank digital currency - the safe way to debt capital market efficiency', European Stability Mechanism Discussion Paper Series/22, available at [https://www.esm.europa.eu/system/files/document/2023-03/DP\\_22\\_FINAL.pdf](https://www.esm.europa.eu/system/files/document/2023-03/DP_22_FINAL.pdf)
- Lotz, S and G Rocheteau (2002) 'On the Launching of a New Currency', Journal of Money, Credit, and Banking 34(3): 563-588, available at <https://doi.org/10.1353/mcb.2002.0003>
- Moronoti, B (2022) 'Revisiting the International Role of the US Dollar', BIS Quarterly Review, December, available at <https://www.bis.org/publ/qtrpdf/rqt2212x.htm>
- Noll, F (2023) 'What Consumer Surveys Say about the Design of a U.S. CBDC for Retail Payments', Payments System Research Briefing, Federal Reserve Bank of Kansas City, available at <https://www.kansascityfed.org/research/payments-system-research-briefings/what-consumer-surveys-say-about-the-design-of-a-us-cbdc-for-retail-payments/>
- Panetta, F (2022a) 'For a few cryptos more: the Wild West of crypto finance', speech at Columbia University, 25 April, available at <https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220425~6436006db0.en.html>
- Panetta, F (2022b) 'The digital euro and the evolution of the financial system', speech to the European Parliament Committee on Economic and Monetary Affairs, 15 June, available at <https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220615~0b859eb8bc.en.html>
- Piazzesi, M and M Schneider (2022) 'Credit lines, bank deposits or CBDCs? Competition and efficiency in modern payment systems', mimeo, available at <https://web.stanford.edu/~piazzesi/CBDC.pdf>
- Reserve Bank of India (2022) 'Concept Note on Central Bank Digital Currency', October, available at <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=1218#CP3>
- Swedish Government (2023) The state and the payments, Summary of the report of Betalningsutredningen, Swedish Government Official Reports SOU 2023:16, available at <https://www.regeringen.se/contentassets/c01377cf65424cf0b12addf64c04374a/english-summary-the-state-and-the-payments.pdf>
- White, T and A White (2022) 'Figure of the week: The rapidly increasing role of cryptocurrencies in Africa', Africa in Focus, Brookings, 27 January, available at <https://www.brookings.edu/blog/africa-in-focus/2022/01/27/figure-of-the-week-the-rapidly-increasing-role-of-cryptocurrencies-in-africa/>
- Williamson, S (2022) 'Central Bank Digital Currency: Welfare and Policy Implications', Journal of Political Economy 130(11): 2829-2861, available at <https://www.journals.uchicago.edu/doi/10.1086/720457>
- Zamora-Pérez, A, E Coschignano and L Barreiro (2022) 'Ensuring adoption of central bank digital currencies – An easy task or a Gordian knot?', ECB Occasional Paper Series No 307, European Central Bank, available at <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op307~c85ee17bc5.en.pdf>

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# Are we witnessing the end of Erdoganomics?



**Is the tide finally turning for Turkey? Cem Soner argues that avoiding a financial crisis is only the first step forward**

Is the tide finally turning for Turkey? Three months after the re-election of Recep Tayyip Erdoğan for his third term as president, which many feared<sup>1</sup> would lead to economic chaos, ratings agency Moody's has indicated<sup>2</sup> that Turkey's credit rating is on course for an upgrade.

Since the election, Erdoğan has installed<sup>3</sup> a new economic team with a commitment to reintroduce conventional monetary policies after years of a more singular approach.

This has yielded some early positive results, with June recording the first current account surplus<sup>4</sup> in 18 months – meaning more money came into the country than went out (mostly due to tourism and lower energy imports).

Meanwhile, Turkey's stock market<sup>5</sup> has been attracting surging interest from foreign investors, and the cost of insuring<sup>6</sup> against the risk of the government defaulting on its debts has sharply declined. So what's going on?

### The mess

When Erdoğan won the May election, contrary to the opinion polls<sup>7</sup>, it extended his tenure as prime minister and then president to almost 20 years. This five-year term is likely to be his last, due to his deteriorating health and constitutional constraints. Thanks to the economic debacle that he created himself, it is also likely to be his most challenging.

There are two pillars to Erdoğanomics: the 'unorthodox' view that high interest rates cause inflation rather than the other way around, and a fixation on keeping rates as low as possible. It became much easier for him to implement after becoming executive president in 2018<sup>8</sup>, which gave him much more power.

Central bank governors who have disagreed with Erdoğan's agenda have been<sup>9</sup> shown the door, most notably Naci Ağbal, who was sacked in March in 2021 after only four months in office. It was the next governor, Şahap Kavcıoğlu, a former MP in the ruling party and columnist in a pro-Erdoğan newspaper, who put Erdoğanomics into overdrive. Turkey experimented with aggressively cutting rates at a time when inflation was already close to 20% and most central banks were tightening.

Official inflation skyrocketed to over 80% and the lira plummeted, forcing the central bank to sell substantial foreign exchange reserves<sup>10</sup> to try and shore up the currency. The current account deficit widened to a record level<sup>11</sup> in January and the earthquake<sup>12</sup> in February further worsened the situation.

This all happened despite the fact that the authorities struggled to impose their interest rate cuts on the wider economy. Whereas normally high-street interest rates move in line with the central bank rate, Turkish banks responded to the central-bank rate cut by increasing rates on consumer and business loans and savings accounts, signalling they didn't think the central bank's policy was sustainable. Loan rates for businesses only later came down after the state-owned banks received<sup>13</sup> a capital boost in the run-up to the election.

### A new approach?

The president has now taken a different path. He has appointed former investment banker Mehmet Şimşek<sup>14</sup> as finance minister. Şimşek is respected by the markets due to a previous successful stint<sup>15</sup> managing Turkey's economy between 2007 and 2018. He has vowed to return to rational economic policies<sup>16</sup>, announcing: *"We will prioritise macro financial stability."*

Another reversal signal has been the appointment of Hafize Gaye Erkan<sup>17</sup> as the first female governor of Turkey's central bank. She too comes from investment banking, having formerly been managing director at Goldman Sachs and co-CEO of First Republic Bank in the US.

She has no central banking experience, but markets nonetheless welcomed<sup>18</sup> her appointment. She has an outstanding resume compared to her predecessor, Kavcıoğlu.

Erkan hiked rates on June 22 from 8.5% to 15%<sup>19</sup>, the highest in nearly two years. The accompanying press release<sup>20</sup> expressed a clear view that this is the way to reduce inflation.

The lira has nevertheless kept losing value<sup>21</sup>, while annual inflation<sup>22</sup> rose from 38% to 48% in July. But along with the other improvements I mentioned at the beginning, there has also been a slight improvement<sup>23</sup> in foreign exchange reserves, indicating that the central bank is under less pressure to defend the currency.

In July, the markets were further reassured by the appointments of high-profile economists as new deputy governors<sup>24</sup> for the central bank. This further decreased Turkey's credit risk<sup>25</sup>. On July 20, the bank hiked interest rates again, to 17.5%<sup>26</sup>.

### What next?

Raising interest rates may have side effects. Turkey has one of the world's highest percentages of 'zombie firms'<sup>27</sup> that have only been able to stay afloat because of low borrowing costs, so there could well be bankruptcies. Also, we know from the recent US banking failures that rate hikes inflict significant stress<sup>28</sup> on banks by reducing the value of their bond portfolios.

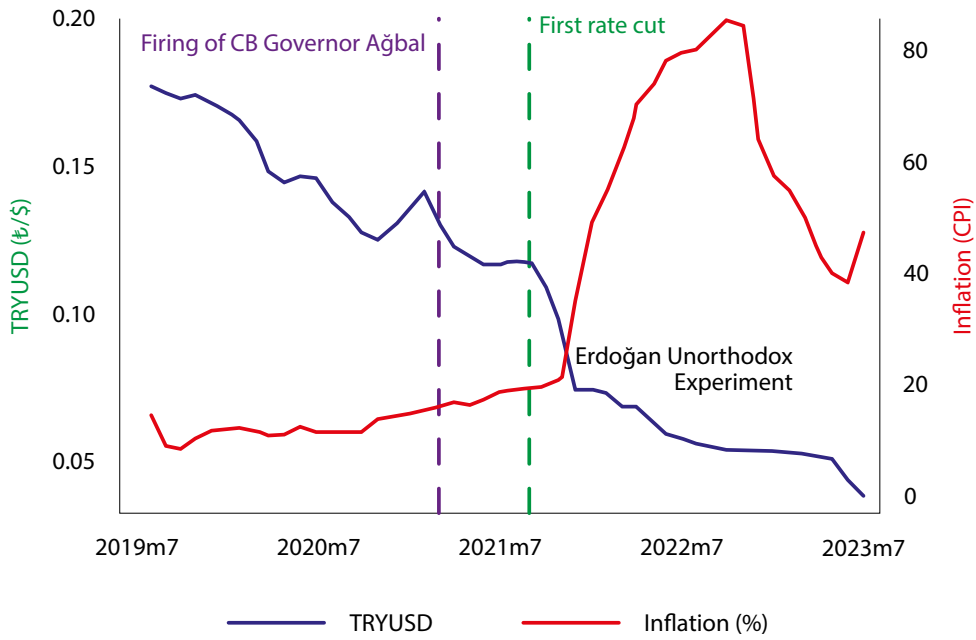
Turkey's banks are obviously not new to life under Erdoğan. They have some<sup>29</sup> fine management teams and effective risk-management practices that are used to weathering the country's economic storms.

All the same, they look vulnerable because they hold low-yielding government bonds<sup>30</sup> that could be impaired by aggressive rate hikes – particularly since they are denominated in lira, which creates exposure to further currency collapses. The government could alleviate this concern by swapping these bonds in exchange for new high-yielding ones.

The bigger question is whether we're really seeing the end of Erdoğanomics or just a lull. We can't rule out a repeat of 2021, when Ağbal was installed as central bank governor despite his orthodox economic views, then removed<sup>31</sup> shortly after.

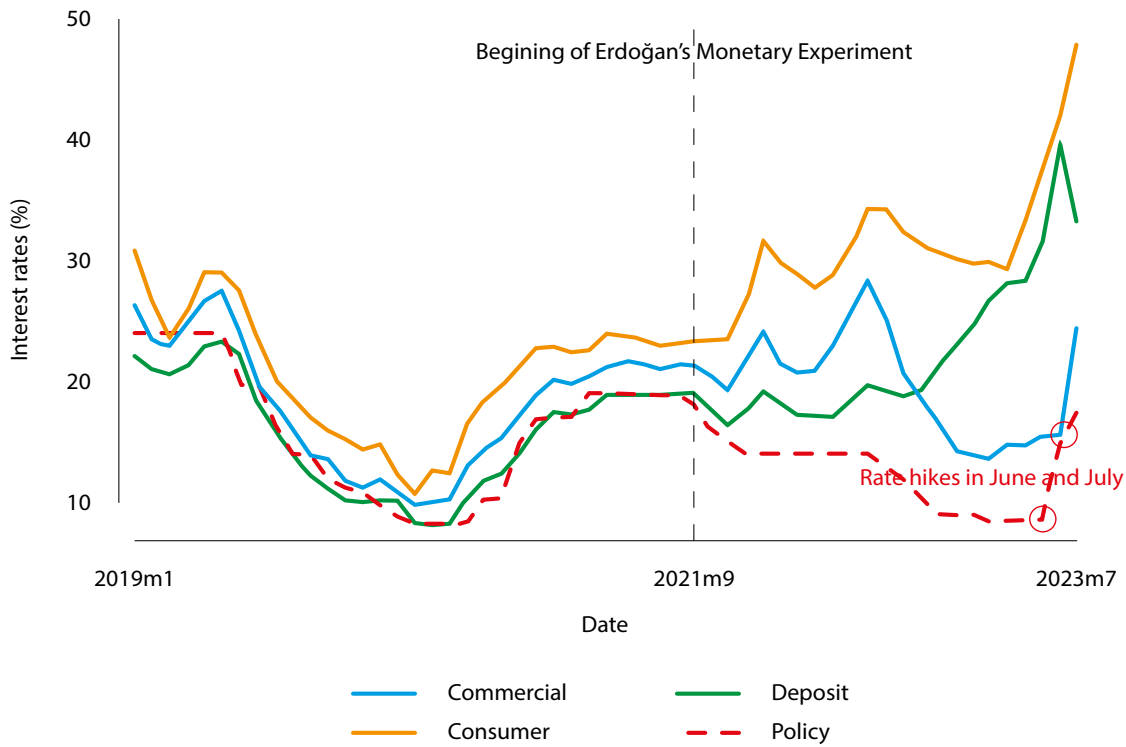


**Figure 1. Turkish inflation and the falling lira**



Source: Author provided.

**Figure 2. The interest rate divergence**



Source: Author provided.

*“The bigger question is whether we’re really seeing the end of Erdoğanomics or just a lull. We can’t rule out a repeat of 2021, when Ağbal was installed as central bank governor despite his orthodox economic views, then removed shortly after”*

Erdoğan has already put Şahap Kavcıoğlu, his biddable governor from 2021-23, in charge of Turkey’s banking watchdog, which doesn’t suggest a total break from the past and has confused markets.

The danger is that Erdoğan won’t allow interest rate hikes in the run-up to the local elections in March 2024. On the other hand, voters in cities such as Istanbul and Ankara have been severely affected by inflation. They overwhelmingly voted<sup>32</sup>

against Erdoğan in the presidential election, having already handed metropolitan control to the opposition in 2019.

To regain these cities, Erdoğan must<sup>33</sup> tame inflation and alleviate the cost-of-living crisis. He may also be motivated by a desire to hand a better economy to his preferred successor (likely to be either his son or son-in-law), who might not enjoy his levels of popularity.

Whatever happens, much damage has already been done. The nation’s current GDP per capita<sup>34</sup> is US\$10,616 (£8,335), well below its peak of US\$12,508 in 2013 (albeit it has grown for the past couple of years). Turkey has lost significant numbers of skilled workers<sup>35</sup> to other countries.

Halting this brain drain, or even reversing it, will be crucial for future economic growth. This seems unlikely<sup>36</sup> under Erdoğan’s leadership. Avoiding a financial crisis is only the first step forward. ■

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#### Endnotes

1. <https://www.theguardian.com/world/2023/may/16/turkey-economic-crisis-expected-to-deepen-after-erdogan-tops-election-poll>
2. [https://www.bloomberg.com/news/articles/2023-08-10/moody-s-may-upgrade-turkey-if-market-friendly-policies-continue?utm\\_medium=social&utm\\_source=twitter&utm\\_campaign=socialflow-organic&utm\\_content=middleeast&leadSource=verify%20wall](https://www.bloomberg.com/news/articles/2023-08-10/moody-s-may-upgrade-turkey-if-market-friendly-policies-continue?utm_medium=social&utm_source=twitter&utm_campaign=socialflow-organic&utm_content=middleeast&leadSource=verify%20wall)
3. <https://www.economist.com/europe/2023/06/04/turkeys-president-erdogan-shifts-towards-sane-economics>
4. <https://www.reuters.com/world/middle-east/turkeys-current-account-seen-record-rare-surplus-june-2023-08-07/>
5. <https://www.ft.com/content/6d34b5b9-af76-437d-a197-5ba3a10f1ea6>
6. <http://www.worldgovernmentbonds.com/cds-historical-data/turkey/5-years/>
7. <https://theconversation.com/turkeys-presidential-runoff-4-essential-reads-on-whats-at-stake-206473>
8. <https://www.aljazeera.com/news/2018/7/9/erdogan-sworn-in-as-turkeys-first-executive-president>
9. <https://theconversation.com/turkeys-plunging-lira-dont-expect-an-end-to-this-saga-soon-157844>
10. <https://www.bloomberg.com/news/articles/2023-04-27/turkey-central-bank-draws-down-gold-reserves-to-meet-high-demand>
11. <https://www.ft.com/content/b6585cdd-fd60-418d-a838-87b506369624>
12. <https://disasterphilanthropy.org/disasters/2023-turkey-syria-earthquake/>
13. <https://www.reuters.com/world/middle-east/turkish-state-banks-talks-pre-election-capital-boost-sources-2022-12-22/>
14. <https://www.bloomberg.com/news/articles/2023-06-02/erdogan-picks-market-darling-simsek-to-return-as-finance-chief?leadSource=verify%20wall>
15. <https://www.ft.com/content/eb26a5f3-b76d-3a68-8049-58bbac665d58>
16. <https://www.ft.com/content/d992628b-76e7-4738-90fa-9b061b6d9221>
17. <https://www.ft.com/content/1ea9cf66-ca6b-453d-9e2a-e5ae15877a70>
18. <https://www.intellinews.com/markets-hope-erdogan-s-new-financial-whiz-central-bank-chief-is-all-she-s-hyped-up-to-be-281244/>
19. <https://www.theguardian.com/world/2023/jun/22/turkish-central-bank-raises-interest-rates-to-15-after-two-year-freeze>
20. <https://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Announcements/Press+Releases/2023/ANO2023-22>
21. <https://tradingeconomics.com/tryusd:cur>
22. <https://tradingeconomics.com/turkey/inflation-cpi>
23. <https://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Statistics/Balance+of+Payments+and+Related+Statistics>





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# Finding the balance with hybrid working

**Jonathan Sharp is CEO of Britannic Technologies**

**B**usinesses are still struggling to find the equilibrium with remote and hybrid working ensuring that productivity and efficiency levels are high, employees are not 'quiet quitting' and who are happy to come into the office a couple of times a week. Even though we have all been remote working at home for the past couple of years it is still new territory to navigate.

The shift of power from employers to employees has created a new paradigm and employees needs are differing from employer's needs. The answer is to find a balance that fulfils both the businesses and the employee's requirements which can be achieved by designing and implementing a comprehensive employee experience (EX) strategy to engage and empower employees.

## **Never going to give it up**

What is certain is that employees have experienced the flexibility of working at home and many will not give it up. Further to the 'Great Resignation' last year where the pandemic forced people to re-evaluate their jobs and thousands left because they wanted more flexibility, and in the UK, up to one fifth of workers will look for a new job this year as they are not happy (ONS).

Plus, a whopping 44% of people now work from home or on a hybrid schedule so flexibility is key, and it is evident that remote and hybrid working is here to stay.

## **Shift in power**

Before the pandemic the Millennials and Generation Z were telling us that they wanted more flexibility on how and where they work in terms of location and hours, what tech they wanted to use and that experiences and making a difference was high on their agenda. The workplace was changing then but lockdown accelerated home working to all on a global scale so there was no choice but to change.

A paradigm shift was created and remains today where the power the employers used to have now lies with the employees. Naturally companies want to take the ownership back as they are experiencing the downsides of remote and hybrid working such as 'quiet quitting', the younger generation missing out on training and development and the lack of face-to-face meetings.

However, there are advantages and disadvantages with everything and although companies want to encourage employees back to the office, they must be willing to work



*“By investing in your employees, developing new leadership styles, devising new management strategies and performance metrics you will improve the employee experience”*

with them to reach an arrangement that the employees are happy with. Just as employees must be willing to compromise for the needs of the business and cannot be too demanding.

### **Time to listen**

Managers need to take the time to understand their employees' journeys, asking them what they need and explaining their objectives concisely. They need to listen to them, and empower them by providing autonomy to make decisions, giving them the freedom to make mistakes and fail.

If we don't fail, then how do we learn? The work landscape is radically different, and managers need to devise effective strategies to manage their team providing them with opportunities to develop, and reward and recognise them when they are doing well increasing their confidence and boosting their self-esteem.

### **Cost of living crisis**

The younger generations have been labelled the ones who are 'quiet quitting' and may have a hustle job on the side. They are not giving 100% to their main job so they have the capacity to do the other one. In reality, they may be struggling financially or with their mental health. Talk to your employees and ask them are they managing at work and at home, provide a platform for them to open up to you so you can understand what their issues and concerns are and how you can help.

### **Wellbeing**

These have been testing times with post pandemic anxiety on the rise, the cost-of-living crisis and uncertain political and economic situation. Be mindful of the amount of work you give to your employees and how it can be managed, can you hand some off to an AI chatbot or automated solution to reduce their load?

Burn out is on the increase at present with 21 per cent of British workers surveyed research from March 2023 revealed that were 'struggling', while a further 26 per cent were 'languishing'. We took a total of 23.3 million sick days last year due to poor mental health.

### **Track but trust**

Managers can deploy 'workforce management solutions' to track employees' work progress which is especially useful for employees based at home or remotely, and to help stop 'quiet quitting'. This will enable them to monitor their workload and can be used in conversations to ascertain if the employee would like more fulfilling tasks or reduce workload in certain areas.

Be careful here not to be watching over them like 'Big Brother' so they feel like they can't be trusted. It is so you can understand their role more and assist where need be.

### **Happy employees – happy customers**

Connecting the employee and customer experience is critical to a company's success. Most of the investment and focus tends to be on improving the customer experience but improving the employee experience is as important if not more.

IDC discovered that 85% of respondents agree that an improved employee experience and higher employee engagement translate to a better customer experience, higher customer satisfaction and higher revenues for their organisation (IDC 2021).

### **Empower with tech**

Companies need to deploy a unified communications solution for employees to communicate and collaborate with each other when they are working at home or remotely so they can have video calls, work on shared documents, and send instant messages. These solutions enable them to be connected virtually. Ensure that everyone has access to the technology they need to do their jobs and communicate with each other.

Technology provides the ability for employees to get creative on how they use it to benefit themselves and the customer. By providing them with tools that give them access to data and autonomy they can make better decisions to improve their roles and the customer experience.

Empower your employees and involve them in sharing their perceptions and ideas to improve their experience and the customers. Work with them and ask them what changes in processes and what technology they require to do their jobs more effectively.

### **Blending humans and tech**

Managers need to reduce fears about AI replacing jobs and ask employees what are the issues with their current roles and processes, how can they be improved?

Then look at how AI and automation technology can resolve and improve them so processes can be streamlined and employees' roles can be augmented with AI tech to assist them to make their jobs easier and more fulfilling. Managers need to champion digital technology and embrace the digital co-worker that will most definitely be a fixed asset in all teams.

### **Investing in employees**

By investing in your employees, developing new leadership styles, devising new management strategies and performance metrics you will improve the employee experience. Listen to your employees, act on their feedback and suggestions and encourage and foster a culture that puts employees first.

Then managing and navigating the new workplace of hybrid and remote working will seamlessly come together reducing 'quiet quitting', leaving employees who are engaged and empowered, and giving you the power to attract top talent. ■



## World War II: the unlearned lessons

**Robert Oulds is the Director of the Bruges Group and is the author of *World War II: The First Culture War***

**T**he unthinkable has happened, a conventional war on the continent of Europe, but the military has been slow to adapt. Yes, Europe has seen bloodshed since 1945; terrorism, militias fighting in Balkanised countries, unmatched airpower imposing diplomacy on those breaching the peace.

However, our security cannot be taken for granted. The invasion of Ukraine has exposed our shortcomings that the Government must quickly address. This can be done by reassessing World War II and our part in it.

Many thought the future of warfare was meeting the challenge posed by small wars tackling irregular insurgents overseas in faraway lands, fighting underdeveloped peoples, who can be eliminated by airpower and mopped up by nimble mobile units, lightly armed, and agile, crossing terrain in armoured vehicles that can shield their crew from small arms fire, but little else.

NATO accordingly developed training and tactics that is, when willing allows, capable of defeating guerilla forces. It is this training that that has been imparted to Ukrainian



troops since 2014. In the initial stage of the Russian invasion, these skills worked well against Russian battlegroups, a failed experiment in independent mobile combined arms units.

The Ukrainians could strip away the supporting infantry leaving the armour and artillery vulnerable to encirclement. The battlegroups were divided and operated without sufficient air and mutually supporting artillery cover. That period is firmly in the past. However, the APU, the Armed Forces of Ukraine, have been trained to fight the last war.

The conflict in eastern Europe has entered a new stage that has a semblance to the Second World War and even the Great War before that. The training and tactics taught by NATO are of little use in such a struggle of artillery, airpower, and entrenched men. Western-trained Ukrainian soldiers have performed poorly against the Russian military and their heavily mined defences.

Conversely, those that have served in the fight in Donbas since 2014 have been more able. In some instances, NATO devised tactics have had to be abandoned, as were American Bradley armoured personnel carriers.

Complacency and inefficiency have all had their part to play, but, as told in the book *World War II: The First Culture War*, an

American-centric view of the world and a misunderstanding of its role in defeating Nazi Germany have also played a part in leading military planners down dead ends.

A romanticised Hollywood version of history was allowed to prevail that depicts swift-moving mobile American units charging forward, finding weak spots, and exploiting any success.

The starting point of where the breakthrough would be achieved, and the attack's final destination, were unknown. In the Second World War, such tactics were replicated across American lines.

The American Supreme Commander, General Dwight Eisenhower, delayed victory with his broad front strategy, but the Allies triumphed all the same, and commanders such as General George S Patton have since been fetishised. The problems, however, were forgotten, as was Britain's vital role.

American triumphs were achieved because the British Army fixed the enemy and wore them down in gritty attritional fighting. Men like Field Marshal Montgomery developed precise plans which focussed his forces' strength, utilised combined arms, and employed artillery and airpower to annihilate resistance.

*“The balance of global power is shifting. Our security cannot be taken for granted. We need to improve the business of war and bring back the notion of professionalism. In the next war, we may not be so lucky”*

American leaders aiming to assume the leadership of the postwar world attempted to take all the glory for the downfall of Hitler; consequently, they wrote out, or even denigrated, the role of Britain and its generals.

The problem is that the vital part of the equation played by Britain has been ignored until now. The American military, by far the biggest component of NATO, has passed on its approach to all signatories.

From there, a cavalier attitude to war, and a romanticised attachment to attacking to excess, without adequate numbers, has been adopted by Ukraine who are fighting on too many fronts.

This is not the first-time training of foreign allies has failed to provide those under our tutelage with the necessary skills. The recent expedition to Afghanistan’s Helmand province involved training the now-defunct Afghan National Army.

No benchmarks were given, and instructing the local forces was not done in the professional manner that the British armed forces were once associated. That war, through an unwillingness to commit all the resources needed, has been lost, the war in Ukraine is still underway.

Since the start of the Spring counteroffensive, Ukrainian servicemen have been encouraged to probe for weaknesses and attempt to affect a breakthrough. This has not happened, even though American military aid to Ukraine is greater than Russia’s entire defence budget.

Ukrainian forces are yet to barely reach, let alone breach, Russian defence lines. Recriminations are already underway. Elements of the German press have been openly critical of Ukrainian commanders. One hopes the Germans do not think they can do better.

Certainly, they are concerned, their Leopard tanks, once thought to be the world’s premier panzer, has performed poorly with many knocked-out by Russian missiles. Germany has received little for their support, they are facing deindustrialisation itself partly driven by high-energy costs caused by the need to pivot from Russian gas to that sourced from America.

The failure to fight the right war has been matched by the inability to prepare for conventional warfare. Supplies to

Ukraine have depleted stores of ammunition to such an extent that the security of Western nations has been compromised, and still, Ukraine cannot match Russian artillery fire.

This is not the only shortcoming. US-supplied drones have not been as effective as hoped, and we were thinking that Amazon would soon be delivering our parcels by air.

The fighting has been centred on the European Union’s eastern frontier, which remains an economic backwater. Russia’s economy is smaller than that of Italy, yet Russia has more nuclear weapons than the United States. The Russians and the Chinese have hypersonic missiles to which we may have no defence.

These devices threaten, and perhaps make redundant, even the aircraft carrier, which may now be considered too big to fail. Any unwillingness to use these ships in combat would make these leviathans obsolete. These shortcomings should not have been allowed to happen, especially as NATO defence spending dwarfs its rivals.

The taxpayer should be outraged. The waste at the heart of the Ministry of Defence is astounding. Like many civil service departments, rent-seeking corporations’ profit by being awarded government contracts to do little badly. This disease is even affecting those that we rely on for our security.

The MoD spends with little accountability. Never in the field of human government was so much taken from so many and given to so few. Its procurements overrun both their time and budgets.

The taxpayer pays and private interests benefits. Britain’s military spending is comparable to that of Russia, yet our armed forces are continually being cut in size. There is a deep reluctance in the state to incur the expense of large armies. It’s warfighting on a budget, what funds are available to go towards those who have won, not battles, but government contracts.

The Ministry of Defence has become just like every other inefficient public service. Despite record spending, or perhaps because of it, there are more bureaucrats than belligerents. The same disease which affects the NHS, leading to excessive waiting lists, also infects policing, which has at least become efficient at giving out crime numbers.

Like Britain’s other creaking public services, the MoD should undoubtedly receive more, yet calls for more spending on the military should be accompanied by demands to know where the money will be spent and how. And just as importantly, checks will have to be made to ensure value for money?

Like at any get woke go broke corporate institution, resources are wasted on concern about carbon emissions. This and the many diversity initiatives are dangerous distractions. The recent woke Wigston Report seeks to transform the armed forces socially and introduces the notion of ‘extreme’ behaviours. Willingness to fight for King and Country and express one’s patriotism is now to invite suspicion.



Ironically, the author, Air Chief Marshal Sir Michael Wigston, is a prominent proponent of the Russian threat. Yet, his diversity initiatives threaten the marshal capabilities for which Britain was once famed. The military-industrial complex has been replaced by the military-woke alliance.

Divisive identity politics lost the Nazis the Second World War; their extreme prejudices misallocated resources and undermined meritocracy; in a naïve way, our military has regretfully mirrored this by embracing the latest strand of identity politics.

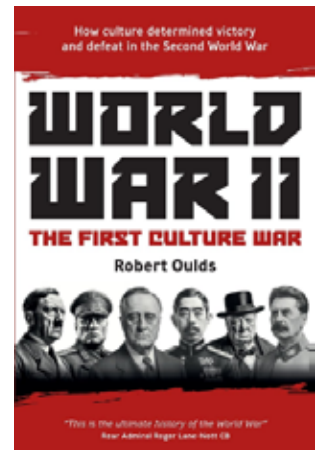
Priority is being given to pilots on the grounds of race, not ability or aptitude. Standards are being made less severe to facilitate women joining the ranks and not dissuade a less healthy population from signing up.

Long gone are the ways of Field Marshal Montgomery, the Spartan General, who wrote the British Infantry Training Manual and who was second to none in imparting warfighting

skills to his subordinates and taught Britain's Tommie's to fight World War II.

Britain and its efficient industries in the Second World War produced more planes than the massive USSR. We won because industry had been honed by the requirements of a competitive market. The same cannot be said today.

The balance of global power is shifting. Our security cannot be taken for granted. We need to improve the business of war and bring back the notion of professionalism. In the next war, we may not be so lucky. ■



# **Comprehensive and unique Aircraft Registry and Transition solutions in the Cayman Islands**



# The CIAR outline the benefits of the Cayman Islands



**T**he Cayman Islands, located 90 miles south of Cuba and 190 miles northwest of Jamaica, attribute its success to its main industries of financial services and tourism. The Government's primary source of income is derived from fees charged for corporate services, the licensing and regulation of various entities domiciled in the Cayman Islands as well as import duties levied on goods.

The Cayman Islands is an English speaking Overseas Territory of the United Kingdom and is therefore obligated to the Chicago Convention to which the United Kingdom is a signatory.

The Civil Aviation Authority of the Cayman Islands (CAACI) is the regulatory body with responsibility for safety regulatory oversight of the Cayman Islands' aviation industry. The CAACI regulates industry in accordance with UK statutory instruments established for its Overseas Territories, namely the Air Navigation (Overseas Territories) Order 2013, (AN(OT)O) and the Overseas Territories Aviation Requirements (OTAR).

These legislative provisions and requirements govern the operational and airworthiness requirements of Cayman Islands registered aircraft.

The Cayman Islands Aircraft Register (CIAR) is globally recognized as a reputable registry of choice for many aircraft owners, financiers, management companies, attorneys and other discerning decision-makers in the competitive aviation industry.

Stringent standards and a mandate for absolute safety compliance have guided the oversight of the Cayman registered aircraft since the inception of the Registry over 50 years ago.

The Cayman Islands provides a politically stable flag of registration as well as a tax neutral jurisdiction with a well-regulated financial and legal industry. As a signatory of the Cape Town Convention via the UK's ratification, the CAACI provides a straightforward registration procedure with certainty of security for lessors.

Adding to the benefits, the Cayman Islands is a FAA Category 1 rated jurisdiction and has been granted TSA airspace waiver to all aircraft operating on the CIAR.

While the CAACI team is headquartered in Grand Cayman, Cayman Islands, the team is supplemented by qualified surveyors and inspectors located strategically around the world to accommodate easy access to aircraft and aircraft maintenance organisations for required inspections.

Aircraft registration staff are familiar with Cayman Islands industry experts in the legal, financial and company registration sectors and work to ensure secure and timely transactions in the initial registration phase.

The technical team in the Air Safety Regulation (ASR) Division are highly qualified and experienced in safety regulatory oversight, and are also proficient in working with aircraft

management and maintenance organisations to ensure that each aircraft meets the necessary requirements to comply with safety standards.

As a register of mainly corporate and privately-operated aircraft, the CIAR attracts fleets of medium to large aircraft types comprised of manufacturers such as Airbus and Boeing business Jets, Cessna Citation, Gulfstream, Bombardier and Embraer on the register.

The CIAR also has a growing fleet of aircraft operated for commercial air transport through Article 83 bis agreement or operators established in the Cayman Islands Special Economic Zone (SEZ).

For commercial operations, the CAACI has partnered with Cayman Enterprise City to facilitate the establishment of businesses within the SEZ's Maritime & Aviation City, which enables maritime and aviation interests to efficiently and cost-effectively set up a genuine physical presence in the Cayman Islands.

In particular, the aviation aspect is designed to assist aviation services businesses, such as those involved in commercial air transport operations [air operator certificate (AOC) holders]; aerospace-related activities; manufacturing, logistics planning and aircraft management; management consulting and other specialized services to the aviation and aerospace development sector to set up businesses in the Cayman Islands and operate commercially offshore.

Aircraft owners and financiers can be assured of attention to detail provided by a hands-on approach which is key to the CAACI's unique full-service aircraft register.

In-person, interactive methods for surveyors provide the personal touch that puts clients at ease and allows the CIAR to address safety issues that in many cases would not come to light.

Taking a more personalized management approach with all the stakeholders in an aircraft, results in proactive relationships and reporting before they become major issues. While the CIAR is a full-service aircraft register, it should be noted that it is not a register for parking aircraft indefinitely or at the end of a useful life.

Recognising the gap in the industry for aircraft requiring safety oversight between leases, sales or having been repossessed by a mortgagee, the CAACI provides an innovative solution for lessors/financiers requiring a register to facilitate temporary registration of aircraft, which are transitioning to other leases or jurisdictions.

The transition registry preserves the value of the aircraft by working proactively with the lessor and financier to ensure that the aircraft is maintained to the highest standard and its approval certificates kept current.

The CAACI transition team are highly experienced with handling many transitioning aircraft over the past several

years and is poised to assist with a smooth deregistration and export of the aircraft when the time comes.

The strong relationships built on trust over the years with lessors, owners, financiers, management companies and airline attorneys have been led by the dedicated and experienced personnel who value safety first.

When an aircraft is financed and there is a mortgage attached, the mortgage can be registered on the Cayman Islands Register of Aircraft Mortgages under The Mortgaging of Aircraft Regulations, 2015. Additionally, the Cape Town Convention was ratified by the UK in July 2015, and enacted in the Cayman Islands on 1 November 2015.

The Cayman Islands government passed enabling legislation entitling the Cayman Islands to international recognition as a territorial unit of a contracting state to the Cape Town Convention.

Financiers can opt for the protections available under the dual mortgage registration regime and make filings relating to mortgages under the Cape Town Convention as well as register the mortgages in the mortgage register maintained by the CAACI.

In circumstances where the Convention does not apply, a party taking a mortgage over an aircraft registered or to be registered on the Aircraft Register is able to register that mortgage with the CAACI on its mortgage register.

The AN(OT)O provides that the registered mortgagee must provide its consent to removal of the relevant aircraft from the Aircraft Register before such removal can take place.

It further provides that the registered mortgage will continue to exist despite removal of the aircraft from the Aircraft Register. Some financiers find this as an additional assurance as the mortgage transitions to a new register with the aircraft.

In addition to quality service and attention to owners, operator, lessors and lenders, the CAACI works closely with CIAR stakeholders to identify and address their needs supported by a bespoke interactive software, VP-C Online. The electronic data management system provides a secure way to manage aircraft documents online '24-7-365'.

Applications for registration and all aircraft flight operation and continuing airworthiness approvals are submitted online. Applicants can check the status of the approval when they are given access to the system.

The system is continuously updated and enhanced to provide a streamlined and user-friendly interface for clients as well as staff, increasing efficiency. VP-C Online makes it easier for clients to apply for initial aircraft registration as well as continuing airworthiness and other required approvals.

The platform allows you to review documents, submit urgent requests, check status of the approval process, stay informed

*“The Cayman Island Aircraft Register is globally recognized as a reputable registry of choice for many aircraft owners, financiers, management companies, attorneys and other discerning decision-makers in the competitive aviation industry”*

and receive reminders for renewals, as well as print copies of your certificates.

The data management portal also functions in the following areas: availability and reservation of registration marks, submission of the initial registration application and renewals, submission of the finance and legal due diligence/owner compliance documentations as well as pilot license validations.

The development of the latest phase of VP-C Online will introduce increased efficiency and scope specific to the management of Maintenance Organisations.

This next phase expected to be released in the Fall of 2023, will encompass the submission of applications and supporting documentation from Approved Maintenance Organisations (AMOs) and Continued Airworthiness Management Organisations (CAMOs).

In summary, there are many benefits to registering an aircraft on the Cayman Islands Aircraft Register as detailed previously but the hallmarks that sets the CIAR apart are the efficiencies, professionalism, personalised approach and the cohesiveness of the team involved in the registration and safety oversight of your aircraft. ■

*For any type of registration enquiries or quotes on aircraft registration, aircraft mortgage registration, aircraft certifications and transition project costs please email:*

*registration.enquiries@caacayman.com*



**CAYMAN ISLANDS  
AIRCRAFT REGISTRY**



# When artificial intelligence becomes a central banker

Jon Danielsson is the Director of the Systemic Risk Centre at the London School of Economics and Political Science

**A**rtificial intelligence is expected to be widely used by central banks as it brings considerable cost saving and efficiency benefits. However, as this column argues, it also raises difficult questions around which tasks can safely be outsourced to AI and what needs to stay in the hands of human decision makers.

Senior decision makers will need to appreciate how AI advice differs from that produced by human specialists, and shape their human resource policies and organisational structure to allow for the most efficient use of AI without it threatening the mission of the organisation.

Central banks are rapidly deploying artificial intelligence (AI), driven by the promise of increased efficiency and cost reductions. AI engines are already serving as central bankers. But with most AI applications today low level, and with the conservative nature of central banks, AI adoption is slower than in private sector financial institutions.

Still, the direction of travel seems inevitable, with AI set to take on increasingly important roles in central banking. That raises questions about what we can entrust to AI and where humans need to be in charge.

We might think the economy and especially the financial system – the domain of the central banks – is the ideal application for AI. After all, the economy and the financial system generate almost infinite amounts of data, so plenty for AI to train on.

Every minute financial institutional decision is recorded and trades are stamped to the microsecond. Emails, messages, and phone calls of traders and important decision makers' interactions with clients are recorded, and central banks have access to very granular economic data.

But data do not equal information, and making sense of all these data flows is like drinking from a fire hose. Even worse, the information about the next crisis event or inflationary episode might not even be in observed data.

## What AI can and can't do

At the risk of oversimplifying, it is helpful to think of the benefits and threats of AI on a continuum. On one end, we

have a problem with well-defined objectives, bounded immutable rules, and finite and known action space, like the game of chess. Here, AI excels, making much better decisions than humans. It might not even need data because it can generate its own training datasets.



For central banks, this includes ordinary day-to-day operations, monitoring, and decisions, such as the enforcement of microprudential rules, payment system operation, and the monitoring of economic activity. The abundance of data, clear rules and objectives, and repeated events make it ideal for AI.

We already see this in the private sector, with Blackrock's AI-powered Aladdin serving as the world's top risk management engine. Robo-regulators in charge of 'RegTech' are an ideal AI application. At the moment, such work may be performed by professionals with a bachelor's or master's degree, and central banks employ a large number of these.

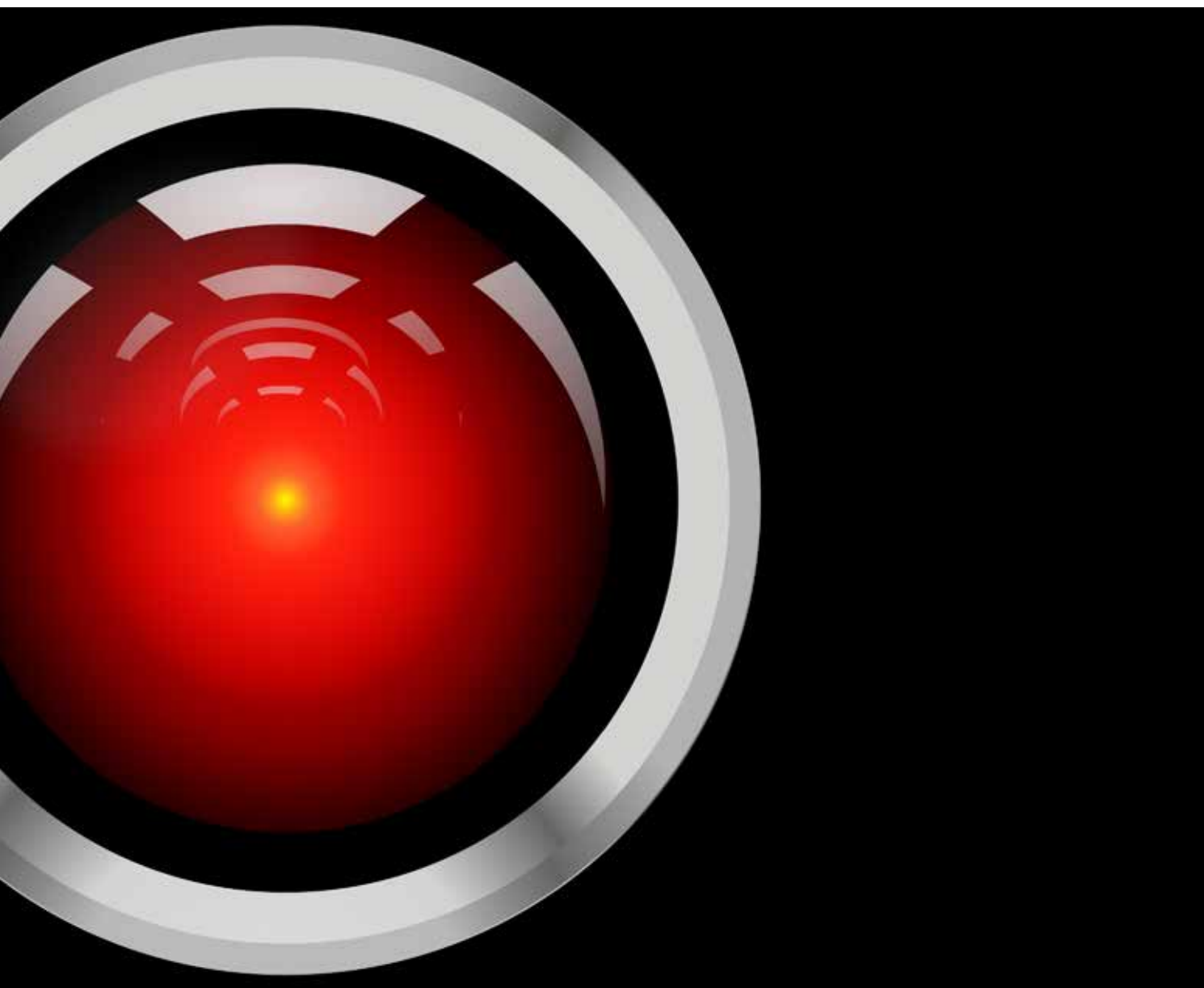
Central banks may first perceive value in having AI collaborate with human staff to tackle some of the many jobs that require attention, while not altering staff levels.

However, as time passes, central banks may grow to embrace the superior decisions and cost savings that come from replacing employees with AI. That is mainly possible with today's AI technology (Noy and Zhang 2023, Ilzetzki and Jain 2023.)

*“Decision makers [...] must both appreciate how AI advice differs from that produced by human specialists and shape their human resource policies and organisational structure to allow for the most efficient use of AI without it threatening the mission of the organisation”*

As the rules blur, objectives become unclear, events infrequent, and the action space fuzzy, AI starts to lose its advantage. It has limited information to train on, and important decisions might draw on domains outside of the AI training dataset.

This includes higher-level economic activity analysis, which may involve PhD-level economists authoring reports and



forecasting risk, inflation, and other economic variables – jobs that require comprehensive understanding of data, statistics, programming, and, most importantly, economics.

Such employees might generate recommendations on typical monetary policy decisions based on some Taylor-type rule, macroprudential tuning of the composition and the amount of liquidity and capital buffers, or market turmoil analysis.

While the skill level for such work is higher than for ordinary activities, a long history of repeated research, coupled with standard analysis frameworks, leaves significant amount of material for AI to train on. And crucially, such work does not involve much abstract analysis.

AI may in the future outperform human personnel in such activities, and senior decision makers might come to appreciate the faster and more accurate reports by AI. This is already happening rapidly, for example, with ChatGPT and AI-overseen forecasting.

In extreme cases, such as deciding how to respond to financial crises or rapidly rising inflation – events that the typical central banker might only face once in their professional lifetime – human decision makers have the advantage since they might have to set their own objectives, while events are essentially unique, information extremely scarce, expert advice is contradictory, and the action space unknown. This is the one area where AI is at a disadvantage and may be outperformed by the human abstract analyst (Danielsson *et al* 2022)

In such situations, mistakes can be catastrophic. In the 1980s, an AI called EURISKO used a cute trick to defeat all of its human competitors in a naval wargame, sinking its own slowest ships to achieve better manoeuvrability than its human competitors. And that is the problem with AI.

How do we know it will do the right thing? Human admirals don't have to be told they can't sink their own ships; they just know. The AI engine has to be told. But the world is complex, and creating rules covering every eventuality is impossible. AI will eventually run into cases where it takes critical decisions no human would find acceptable.

Of course, human decision makers mess up more often than AI. But, there are crucial differences. The former also come with a lifetime of experience and knowledge of relevant fields, like philosophy, history, politics, and ethics, allowing them to react to unforeseen circumstances and make decisions subject to political and ethical standards without it being necessary to spell them out.

While AI may make better decisions than a single human most of the time, it currently has only one representation of the world, whereas each human has their own individual worldview based on past experiences.

Group decisions made by decision makers with diverse points of view can result in more robust decisions than an individual AI. No current, or envisioned, AI technology can make such group consensus decisions (Danielsson *et al* 2020).

Furthermore, before putting humans in charge of the most important domains, we can ask them how they would make decisions in hypothetical scenarios and, crucially, ask them to justify them. They can be held to account and be required to testify to Senate committees.

If they mess up, they can be fired, punished, incarcerated, and lose their reputation. You can't do any of that with AI. Nobody knows how it reasons or decides, nor can it explain itself. You can hold the AI engine to account, but it will not care.

### Conclusion

The usage of AI is growing so quickly that decision makers risk being caught off guard and faced with a *fait accompli*. ChatGPT and machine learning overseen by AI are already used by junior central bankers for policy work.

Instead of steering AI adoption before it becomes too widespread, central banks risk being forced to respond to AI that is already in use.

While one may declare that artificial intelligence will never be utilised for certain jobs, history shows that the use of such technology sneaks up on us, and senior decision makers may be the last to know.

AI promises to significantly aid central banks by assisting them with the increasing number of tasks they encounter, allowing them to target limited resources more efficiently and execute their job more robustly. It will change both the organisation and what will be demanded of employees.

While most central bankers may not become AI experts, they likely will need to 'speak' AI – be familiar with it – and be comfortable taking guidance from and managing AI engines.

The most senior decision makers then must both appreciate how AI advice differs from that produced by human specialists and shape their human resource policies and organisational structure to allow for the most efficient use of AI without it threatening the mission of the organisation. ■

#### References

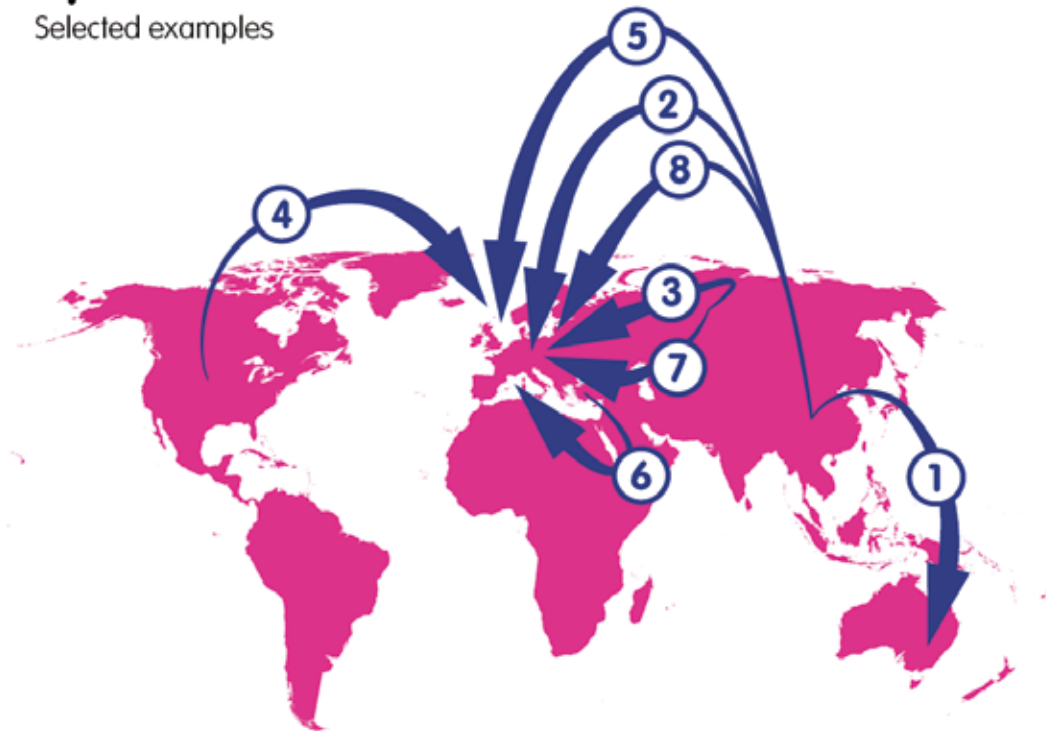
- Danielsson, J, R Macrae and A Uthemann (2020), "Artificial intelligence as a central banker", *VoxEU.org*, 6 Mar.  
Danielsson, J, R Macrae and A Uthemann (2022), "Artificial intelligence and systemic risk", *Journal of Banking and Finance* 140, 106290.  
Noy, S and W Zhang (2023), "The productivity effects of generative artificial intelligence", *VoxEU.org*, 7 June.  
Ilzetzi, E and S Jain (2023), "The impact of artificial intelligence on growth and employment", *VoxEU.org*, 20 June.

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## The EU is increasingly threatened by economic coercion

Selected examples



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

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

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

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

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

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

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

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

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

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