

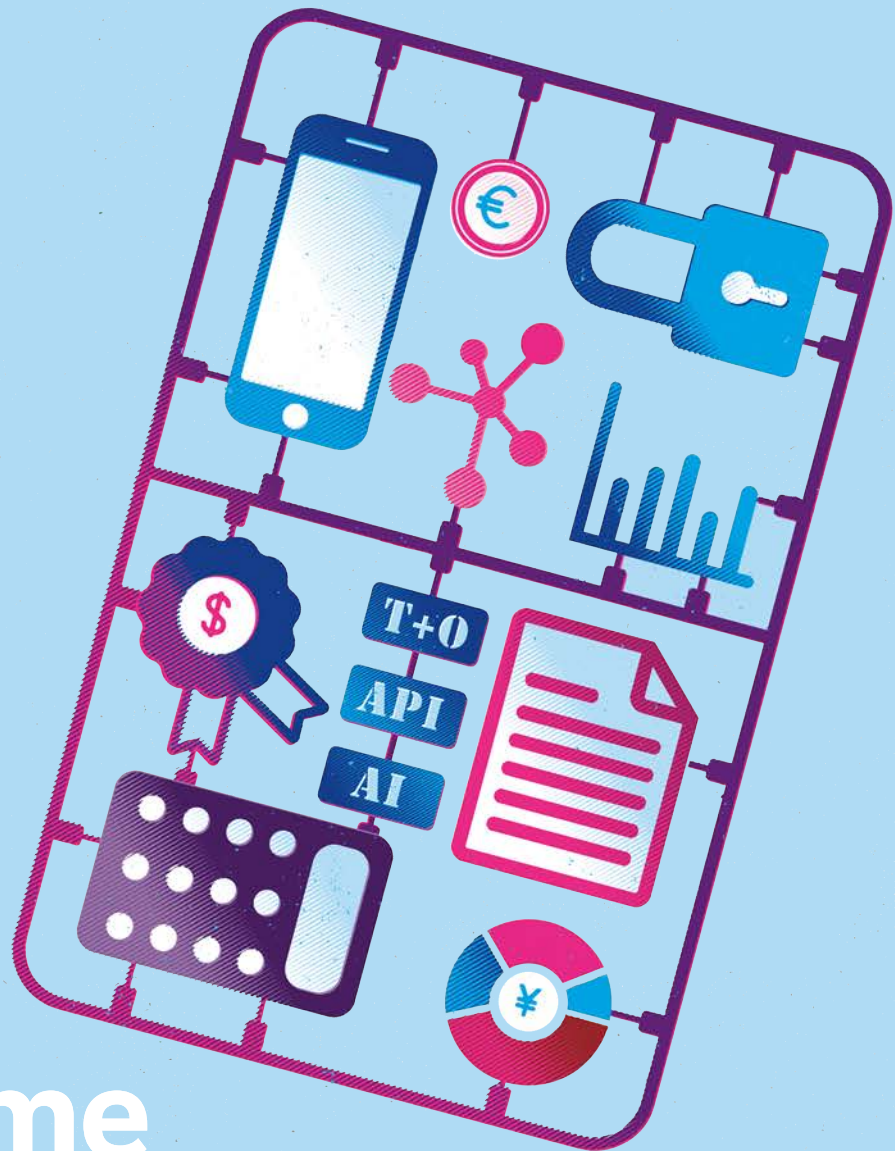
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Inside **Boehringer**
Ingelheim's treasury

Financing clean water
in **Tashkent**

Future of custody in
new **T+1** normal

Pattern Energy's
renewables megaprojects



Real-time finance

Big debate: what instant means
for tomorrow's treasury



Corporate Bank

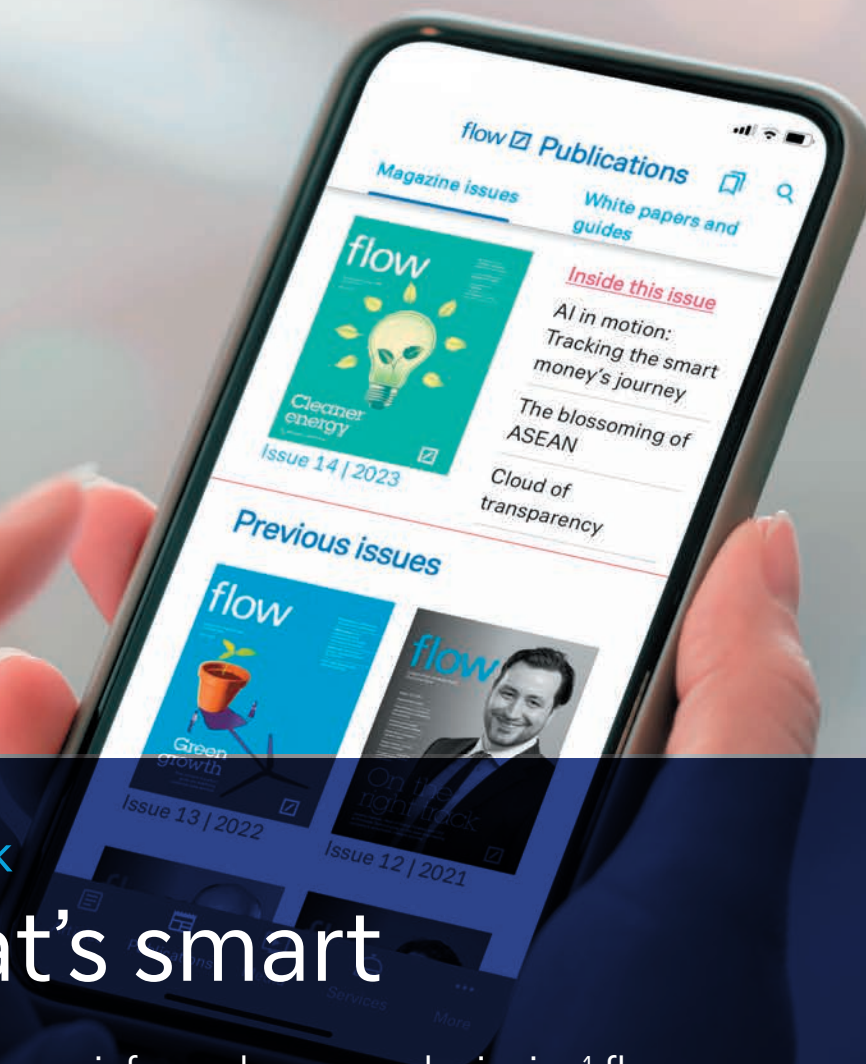
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² You can track cross-border payments that are processed through the Deutsche Bank branch network, utilising the Unique End-to-End Transaction Reference (UETR) identifier

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flow

Real-time flow

As *flow* celebrates its ninth birthday with the publication of this 2024–2025 edition, all of us here in the *flow* team are delighted with the ongoing positive feedback from readers and the level of engagement on our website, together with the steady development of our flow app downloads.

None of this would be possible without the support of our clients, whose lasting success and financial security, at home and abroad, is what we are here for.

This edition places the sharing of clients' experiences at the centre of this 100-page read, as we look at corporates doing business in the US, Middle East, Italy and Germany. We also share a variety of insights, ranging from the pharmaceutical industry, examples of sanitation, projects in action, as well as reflections from global custodians responsible for trillions of the world's financial assets.

We also look at the latest trends in technology, making it possible to see transactions go through in real time – quite literally following the money. Digitalisation progress is also making it possible to manage risk in more frontier economies, getting finance through to those that most need it.

During the coming 12 months, we hope that this edition will be a handy 'go-to' reference document as we continue to navigate a turbulent geopolitical and economic landscape together.

Wishing you an enjoyable read and do keep up your emails with ideas and feedback – these are very gratefully received. Please contact us at corporate.bank@db.com.

The *flow* team

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A different level of athlete



Deutsche Bank's David Lynne shares his perspective on how corporates are evolving their businesses and how this is reshaping bank/corporate relationships as they navigate new trade corridors, reroute supply chains and empower direct access consumers

Our job in corporate banking is dedication to our clients' lasting success and financial security – wherever they are located. Megatrends such as deglobalisation, navigating a global pandemic and rerouted supply chains have reshaped capex needs, triggering working capital supply requirements in new geographies and industries. Technology has empowered the direct consumer and this, along with the micropayments generated, has reshaped client operations and treasury flows, and intensified the demand for increased operational efficiency and partner bank agility. This article reviews this changed landscape through three distinct lenses: globalisation and new trade corridors; direct access distributions and the impact on payments; and deploying artificial intelligence (AI) and machine learning to optimise operational expenditure.

'Glocalisation' and new trade corridors

Increased geopolitical tensions and the long tail of Covid-19 continue to

impact the global trade environment. Supply chains with dependencies on a handful of countries' manufacturers or components became very stressed during the pandemic. All of this, together with concerns around tariffs, resource nationalism and sanctions, has altered trade corridors to the point where manufacturing around the world has shifted into three main geographic supply chain routes; one for Europe, one for Asia and another for the Americas.

A move towards 'glocalisation' has therefore emerged, whereby companies aim to replace or augment their global supply chains with those closer to home or in economies with a more favourable country risk profile, to avoid or mitigate disruptions. A big focus of both the European and US governments is on attracting industries of the future – but the way they are doing this is slightly different in each region. With the Inflation Reduction Act, the US is going for direct financing, with tax incentives thrown in, while Europe has gone down the

more traditional route of export credit agency (ECA) financing. Look how Samsung Electronics' new semiconductor manufacturing facility in Texas has resulted in around US\$6.4bn of direct government funding as part of the CHIPS and Science Act.

But, taking a leaf out of the US support strategy book, the EU, with its European CHIPS Act and €40bn subsidy plan, aims to double chip manufacturing by 2030. This has seen a large Asian chip manufacturer announce plans last year for a €10bn plant in Germany. Once operational, this will help shore up supply chains for the European automotive industry.

In support, at Deutsche Bank we are leveraging our global trade finance and cash management capabilities, as well as our in-country expertise, relationships with German automotive companies and ongoing dialogues at government level. A corporate like this needs in their partner bank the capability to make payments on time and in the required



currencies, which requires a nimbleness and flexibility in processing FX, as well as speed and accuracy in performing all the requisite compliance checks. We are also helping with the on-the-ground practicalities of setting up a factory in Germany and moving employees from Asia. This includes opening retail accounts for employees, securing insurance and finding schools for 2,000 people.

Having traditionally supported exporters with financing and guarantees to attract



Companies aim to replace or augment their global supply chains with those closer to home

David Lynne

commercial banking lending, ECAs are increasingly becoming 'ICAs' and providing similar support for importers. I am seeing this as a growing trend in Europe and beyond – particularly when it comes to the procurement of energy supplies and critical raw materials. With our global network, we are combining the available ECA appetite in different geographies and supporting importers.

With a traditional ECA you would see a big infrastructure construction project and the country's finance ministry would provide support with insurance cover to make the long-term finance cheaper. Now we are financing the materials needed for that project somewhere else in the world, and the ECA supports those imports coming into the country when, in the past, this support was just for goods going out. For example, we are working on a couple of deals where the manufacturing equipment for a project in, say, Germany, may come from China – where we have a relationship with Sinosure (China's ECA).

Supporting direct distribution

The next big theme is around technology and the move to online selling. Most of us are familiar with business to consumer (B2C) sales, but the rapid growth now is in business-to-business (B2B) and B2B2C sales. More and more companies are running distribution models that relate to selling online – look at how BMW is rolling out direct sales of the MINI in Italy, Poland and Sweden. Your distribution models for both B2B and B2C could be in your own marketplace or those of a partner marketplace – but they occur as efficiency and connection models. This has been the build of our 'Merchant Solutions' business. For example, the Lufthansa 'Miles & More with Mastercard' is a significant 10-year mandate and another way of thinking about what a distribution model is in terms of loyalty points and processes.

Consumption of services follows a similar pattern. Look at entertainment packages. In the past, film and sports coverage production companies would sell these to a cable company who would then charge its customers for a package of services. But now you can just subscribe to the app and stream directly. Providers don't need a treasury in the country of operation, but do need to collect the cash and process micropayments. We use virtual accounts here where clients can subdivide their

physical bank accounts into multiple virtual ones. They pay advertisers and content producers all over the world.

In short, the rapidly increasing demand from clients as their digital business models continue their growth trajectories is met with our capability via a global network to make micropayments and automated FX conversions in more than 100 countries around the world. We have recently set this up for a large global North Asian social media platform and marketplace.

Operational efficiencies

Turning from front of house to the engine room, how do you make your treasury and financial processing more efficient? How do you ensure that not only your capex is optimised, but also your operational expenditure (opex)? The more you sell online, the more information you generate around customers, inventory, payments and preferences. That data shows how your treasury runs, in terms of cash payment and conversion, and is fed into our workflow solutions with our data-driven forecasting.

Here, a treasurer does not have to perform repeat processes each day, such as checking account balances, payments due and FX hedging, but gets this automated via a set of parameters tailored to their requirements. We set up a limit structure so that if there is more than the agreed amount in the account at the end of the day, that gets swept and converted. In other words, we have harnessed AI and ML (machine learning) to optimise efficiencies in financial systems.

One house

With our combined lenses trained on client needs around the world, all the pieces of our Corporate Bank come together – not just with solutions across different banking disciplines, but with how technology is leveraged. A multinational CFO is staring at market volatility, huge country risk management concerns, changes in business models and distribution channels, alongside technology changes. In short, the world is as complicated as it has ever been in 40 years. Marry that with a partner with a very strong presence on the ground in 43 countries and I like to think we compete as a rather different level of athlete.

David Lynne is Head of the Corporate Bank at Deutsche Bank

60-second takeaway

The GCC countries are using their huge sovereign wealth funds and natural resources to invest in infrastructure and clean energy initiatives

- Large infrastructure projects are driving demand for transaction banking services
- Saudi Arabia and the UAE are positioning themselves as fintech hubs
- The total capitalisation of Middle Eastern stock markets is more than US\$4.5trn

King Abdullah Financial District, Riyadh, Kingdom of Saudi Arabia

After the oil in the Middle East

Growing non-oil revenues and deploying oil wealth for infrastructure investment around the world has been part of the Gulf Cooperation Council countries' strategy in the Middle East for some years. *flow* reports on the new opportunities for investors and lenders

Image: iStock

"To reimagine the future, we must be open to new possibilities. Join us on a journey to 2071.

Pioneer new worlds and ways of living and return to shape today's world for the better." This is the invitation from Dubai's Museum of the Future, where visitors can "explore near-future technologies from the world's leading innovators".

This tourist attraction is a good example of how the wider Gulf Cooperation Council (GCC) region is no longer content to sit on its hydrocarbon laurels. The region is blessed with deep natural resources and some of the largest sovereign wealth funds in the world, and its sights are firmly set on the future. This means growing non-oil revenues and

deploying oil wealth to invest in huge infrastructure projects such as Saudia Arabia's US\$500bn NEOM (a special

"

Saudi Arabia has a lot of money going into diversified interests outside of oil

Kees Hoving, Head of Corporate Bank
Coverage MEA at Deutsche Bank

economic zone in Saudi Arabia that aims to create a zero-carbon, circular economy and a living laboratory for entrepreneurship), and in fintech.

The Middle East Institute pointed out in 2021, "almost half of the 400 million people in the region are under the age of 25, we believe the push for digital-first solutions across sectors like payments, banking and lending will continue to surge."

Given the backdrop of diversification from oil revenues, huge sovereign wealth funds, clean energy initiatives and ongoing geopolitical tensions, this article examines what this means for trade and supply chain flows, and for the region's continued attractiveness to investors.

Growth of the GCC

Headquartered in Riyadh, the GCC trade bloc comprises Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE). Decades of petroleum revenues, combined with a boom in oil and natural gas revenues, underpin the region's building and investment surge – and it now comprises some of the fastest-growing economies in the world. Figure 1 sets out the region's gross domestic product (GDP) growth compared with those of advanced economies, emerging markets and low-income countries. (Note the negative areas of the chart related to the Covid-19 pandemic.)

"The UAE and Saudi banking systems are poised to continue their growth above the rest of the region, with strong credit demand led by a dynamic non-oil sector and economic diversification programs. We also expect credit growth in Oman to remain robust," reflected S&P Global in January 2024.

GCC countries, as the IMF Country Report No 23/413 points out, have set out ambitious reform agendas – as shown in the government initiatives Saudi Vision 2030, We the UAE 2031, Oman Vision 2040 and Qatar National Vision 2030. Implementation has been progressing well and has accelerated since the pandemic. The main areas of progress are social and business-friendly reforms, efforts to enhance fiscal sustainability and resilience, and investments in strategic industries and digital and green infrastructure. Going forward, stepped-up implementation of these reforms will be critical to enhance productivity, diversify economies and prepare for the energy transition.

Deutsche Bank Research anticipates Saudi Arabia's growth to rebound to 2.4% in 2024. Although the carry-over effect of oil production cuts announced in mid-2023 will likely continue to weigh on growth in 2024, economic activity will continue to be supported by sizeable investments aimed at diversifying the economy. Non-oil economic activity "should continue to benefit from large-scale investments under the Vision 2030 agenda," said economist Samira Kalla in her report, *Saudi Arabia: an economic renaissance amid global challenges*.

Saudi Arabia's moderate level of debt (26% of GDP in 2023), and other positive factors such as fiscal prudence and a favourable oil environment have, added Kalla, "helped improve the country's credit

Figure 1: Relative GDP growth (%) of GCC countries

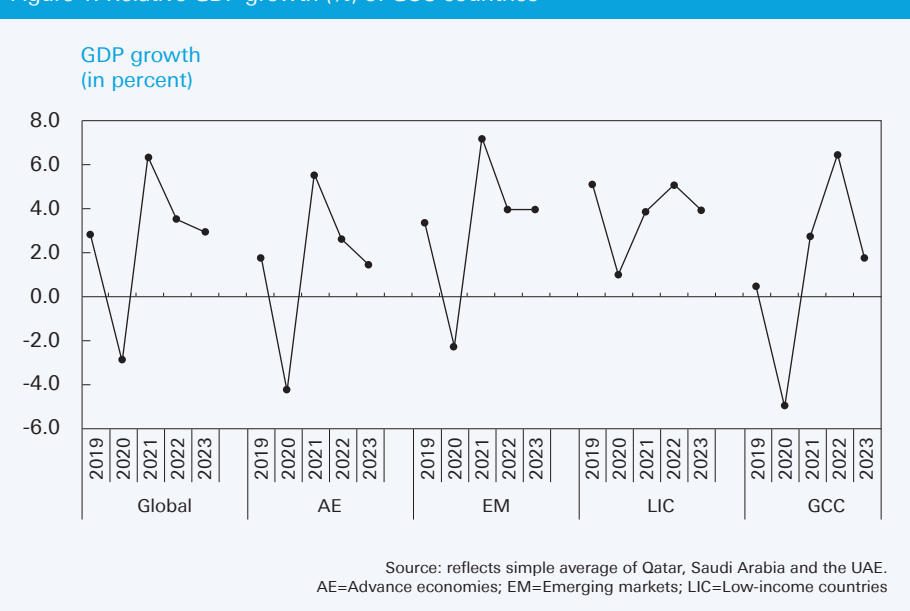
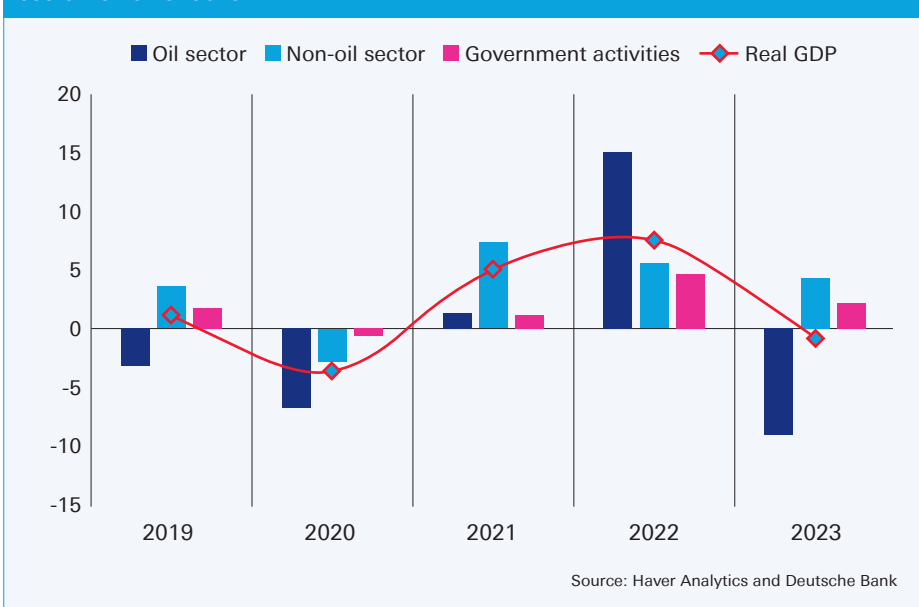


Figure 2: Saudi Arabia's 2023 growth is affected by lower oil activity, but the non-oil sector remains robust



rating and wider investor sentiment" – evidenced by successful bond issuances in 2024.

The wider GCC region is rich in liquidity, with sovereign wealth funds investing their oil money in businesses offshore. "Look at Saudi Arabia – now it is hosting the World Cup 2034, it will be building stadiums, more hotels and the infrastructure around this. They are

investing in the core franchise and have bought football clubs – so, this is a lot of money going into diversified interests outside of oil," says Kees Hoving, Head of Corporate Bank Coverage MEA at Deutsche Bank.

Energy transition and infrastructure

As the region implements policies to increase non-oil revenues, it is putting

in place large projects designed to boost the wholesale, retail trade, construction, utilities (e.g. water purification and renewable energy) and transportation sectors. These are attracting private investment as well as lending.

Vikas Arora, Head of RTM, UAE and Saudi Arabia Corporate Coverage at Deutsche Bank, works with global corporate clients that have subsidiaries in the region. “As the region seeks to generate more non-oil-related revenues, we are seeing large projects in the renewable energy space, in addition to the massive infrastructure build-out in Saudi Arabia to attract more tourists to the country,” he explains. “As an outcome, key engineering, procurement and construction (EPC) companies are winning large projects and needing banking services.” These include not only project finance but also transactional requirements around trade finance, FX and cash management/payments.

Responsible development is a key focus of GCC member governments, and the wider ESG impact of infrastructure development and energy transition is a key theme of the Future Investment Initiative (FII) Institute, with its Riyadh 2023 summit dubbed ‘Davos in the Desert’. Established in October 2019, its agenda is: “Impact on Humanity. Global, inclusive and committed to



Key EPC companies are winning large projects in Saudi Arabia and need banking services

Vikas Arora, Head of RTM, UAE and Saudi Arabia Corporate Coverage, Deutsche Bank

environmental, social and governance principles.” For Deutsche Bank’s Kees Hoving, the FII (which has more than 5,000 participants) “is an excellent conference to meet many clients and other stakeholders and to learn about the latest developments in, for example, technology, energy and healthcare”.

Diversifying supply chains

The UAE has functioned as a regional hub for subsidiary businesses of large corporates – an advantage that positions them well for the entire Middle East and the African continent. GCC countries have, by deploying local content policies, upgraded to logistics and technology infrastructure along with investment promotion reforms to encourage foreign

direct investment (FDI) and keep supply chains localised where possible.

One example of how diversification away from hydrocarbons has spawned a new industry is Saudi Arabia’s burgeoning coffee exports. In 2022, the Kingdom launched the Saudi Coffee Company as part of a US\$320m investment to develop its national coffee industry and boost production from 300 to 2,500 tons per year.

GCC trade and openness indicators improved in 2022 (see Figure 3), supported by the negotiation of free trade agreements and regional initiatives. On 1 January 2024, the UAE, Saudi Arabia, Egypt, Iran and Ethiopia joined the BRICS bloc, doubling the original membership of Brazil, Russia, India, China and South Africa and prompting the renaming of the bloc to BRICS+. “With two top oil producers — UAE and Saudi Arabia, the bloc gained power and influence in the world for multilateral trade developments,” noted a UAE newswire.

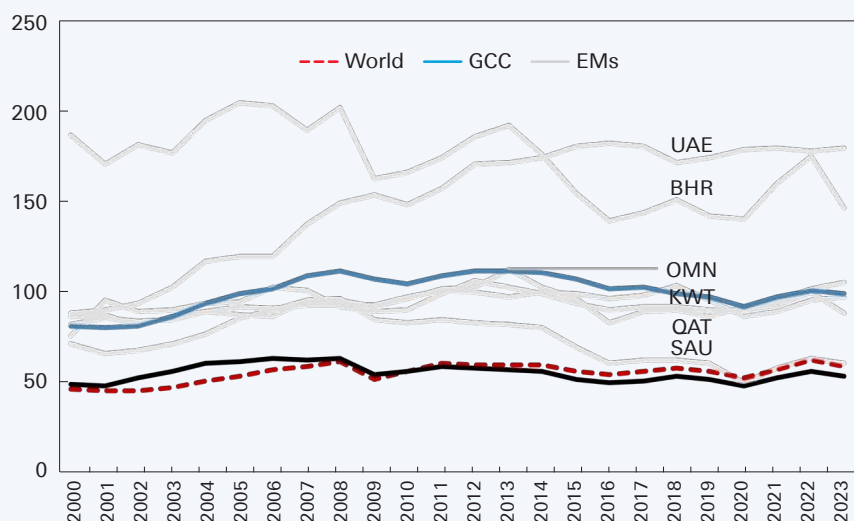
Digitalisation and fintech centres

Fintech Saudi was launched in 2018 by the Saudi Central Bank and the Capital Market Authority to promote fintech industry growth in the Kingdom. As explained in Saudi Vision 2030, this is to position it as “a leading fintech hub by building a strong and responsible ecosystem that includes banks, investors, companies and government institutions”. Initiatives have included workshops and training for students, investors, corporates and banks – as well as support for SMEs.

“The UAE’s drive to develop its financial capital markets extends beyond the traditional asset classes and into the new economies that are underpinned by financial technologies – the region has taken strides to position itself as a hub for an end-to-end ecosystem for digital and virtual assets,” says Hammad Izz-Hamid, Head of Securities Services, Middle East at Deutsche Bank. He cites the establishment of the Abu Dhabi Global Market regulatory framework in 2018 and Dubai’s Virtual Assets Regulatory Authority (VARA) in February 2022. “By establishing a legal framework for businesses related to virtual assets including crypto assets and non-fungible tokens, this landmark law reflects Dubai’s vision to become one of the leading jurisdictions for entrepreneurs and investors in blockchain technology,” noted US legal journal the *National Law Review* on 7 April 2022. In addition, VARA has

Figure 3: Trade openness 2000–2023

Trade openness 2000–2023
(Sum of exports and imports as percentage of GDP)



Source: World Economic Outlook, UNCTAD, IMF staff calculations

Museum of the Future, Dubai



Image: iStock

also pioneered its MetavHQ, becoming the world's first regulator to venture into the metaverse.

Capital markets and investor behaviour

"The countries in the GCC region are making tangible efforts to ensure their targeted economic and financial reforms happen," continues Deutsche Bank's Izz-Hamid, "and they are achieving the goals in their respective visions – this is leading to diversification in various economies on varied fronts, be it Saudi Arabia and UAE that make the headline news or in the likes of Oman that is also taking meaningful steps." Together with the focused strategy of governments and regulators to pivot growth on the back

of economic diversification and fiscal discipline with significant regulatory reform, the approach has "eased access to financial markets, upgraded market infrastructure and paved the way to attract capital portfolio flows", he adds. The collective stock market capitalisation of Middle Eastern markets surged past US\$4.5trn in March 2024.

In March 2022, the Saudi Tadawul Group announced several modifications to its post-trade infrastructure to help attract further international investment into the Kingdom – summarised in *flow 2022*.

Multiple areas of investment are opening up, whether it be in hospitality, tourism, travel or infrastructure, and different workstreams are being created. There are new trading hubs (for example, the Dubai International Financial Centre is positioning Dubai as a future global hub for hedge funds) and a focus on privatisation. Such privatisation means that government entities, and even smaller private enterprises, are launching initial public offerings (IPOs) not only in Saudi Arabia and the UAE but also in Oman and Qatar, evidenced by lower values per offering; in 2023, the GCC region raised US\$10.6bn in IPO proceeds through 47 offerings, compared with US\$22.9bn through 48 offerings in 2022.

Capital is flowing two ways with these IPOs, explains Izz-Hamid; generating interest from international investors in

GCC growth on the one hand and, on the other, presenting selective investment opportunities for state-owned enterprises as part of their broader economic diversification agenda, increasingly looking towards Asian markets.

"This is really interesting for Deutsche Bank, both as a service provider and as an adviser, being well positioned to bridge the portfolio and investment flow corridors between the Middle East and international markets, supported by its wide network and significant market expertise," he reflects. For example, the bank was the sole financial adviser to China's Dalian Wanda on a US\$8.3bn investment for a 60% stake in Newland Commercial Management from a group of investors led by private equity firm PAG – most of the consortium being from the Middle East.

The investor profile and investment interest traffic is progressively broad-based and diverse in the Middle East, with asset managers such as institutional mutual and hedge funds, as well as sovereign wealth funds, private banks and family offices, reflecting well on the region as a capital source and an avenue for capital deployment.

In turn, wealthy families and conglomerates have set up in the Gulf, bringing with them their wealth management needs. Assets under management in 2022 grew more rapidly in the UAE than in any other booking centre, reported the Boston Consulting Group in *Global Wealth Report 2023: Resetting the Course*. "The UAE has gained respect in recent years here as a booking centre that provides an attractive playing field for banks and investors alike," it added.

Regional outlook

GCC countries are not only well on their way towards their goals of diversification from hydrocarbons and fintech hub status, but are also well placed to use the same vision and capital that metamorphosed Dubai from a small trading centre almost five decades ago to what is now a US\$60bn economy. "This economic expansion is consistent with the goals of the Dubai Economic Agenda D33 to double GDP growth over the next decade and consolidate the emirate's position as one of the world's top three urban economies," Sheikh Hamdan bin Mohammed, Crown Prince of Dubai, commented in 2023.

And it is not going to stop there.

“

The countries in the GCC region are making tangible efforts to ensure their targeted economic and financial reforms happen

Hammad Izz-Hamid, Head of Securities Services, Middle East, Deutsche Bank

Re-enter the dragon

As China's Year of the Dragon progresses, its bounce-back following overseas investor nervousness is creating opportunities for corporate banking services. *flow* examines trade corridors, the turning of the tide in foreign direct investment and an agile FX solution as Western economies' monetary policy gives the renminbi a chance to shine

For the first time ever, Sibos – the annual conference, exhibition and networking event organised by Swift for the financial services industry – is being held in China. “Home to most of China’s biggest companies, Beijing houses the largest number of Fortune Global 500 companies in the world, as well as the world’s four biggest financial institutions by total assets. Beijing attracts talent and investment from around the globe and is a driving force in shaping the future of the global economy,” explains Swift.

Deutsche Bank has long appreciated the business needs of those trading in and with China. In 2022, the bank celebrated its 150th anniversary in Asia Pacific (Shanghai was the bank’s first foreign branch). Fast-forward two years and this article provides an update on the country’s economy and markets. It also provides further details on the bank’s role in supporting its clients in key sectors such as renewable energy and personal transport and, overall, in supporting China’s stronger integration with global markets in the 21st century.

Economic update

Although economic growth has slowed in recent years, China remains the world’s second largest economy with gross domestic product (GDP) of US\$17.7trn in 2023 (according to the World Bank) and it is recovering well from the pandemic – despite some fears at the time about its zero-Covid policies and reduced consumer spending. China made a strong start to 2024, with the government setting a 5% growth target at the National People’s Congress held on 5 March that was “higher than the market consensus growth forecast of 4.6% growth this year,” according to Deutsche Bank Research’s

Chief Economist for Asia, Yi Xiong.

Reporting on Premier Li Qiang’s first Government Work Report, presented at the 5 March Congress, Yi highlighted the fiscal policy change with the confirmation of RMB 1trn of ultra-long-term special China Government Bonds in 2024 to fund key investment projects, along with the intention to “continuously issue ultra-long-term bonds for the next few years. An acceleration in the fiscal spending in the upcoming months,” largely of receipts from such government bond issuances, “will be crucial for achieving the aforementioned growth target of 5%,” he added.

Monetary policy is also important. China’s central bank, the People’s Bank of China (PBOC), kept its policy rate unchanged in March amid “an upward surprise in CPI inflation and the PBOC’s efforts to resist depreciation pressures on the currency,” Yi noted. He added that Deutsche Bank still expects the PBOC to cut the medium-term lending facility rate by 20bps in 2024, with the first 10bps rate cut likely in June.

Ben Li, Deutsche Bank’s China Head of Securities Services, points out that in a world where central banks have been increasing interest rates to inhibit inflation, the PBOC’s efforts to reduce rates stand out. This also drives demand for RMB-denominated cross-border financing (given the cheaper cost of it).

Importantly for foreign banks operating in the region, Li adds, “The government has reiterated a set of measures to attract foreign investment, including removing entry barriers to the manufacturing, telecom and healthcare sectors, and resolving issues with cross-border data flows. The government also aims to increase the share of private companies’ financing obtained from banks and the

60-second takeaway

Despite slowing economic growth in recent years, China’s economy remains strong and is attracting foreign investment (FDI)

- China remains the world’s second largest economy, boosted by its central bank’s rates policy
- New trade corridors connect more than 400 ports, building on the Belt and Road Initiative
- Green technologies are driving an influx of FDI

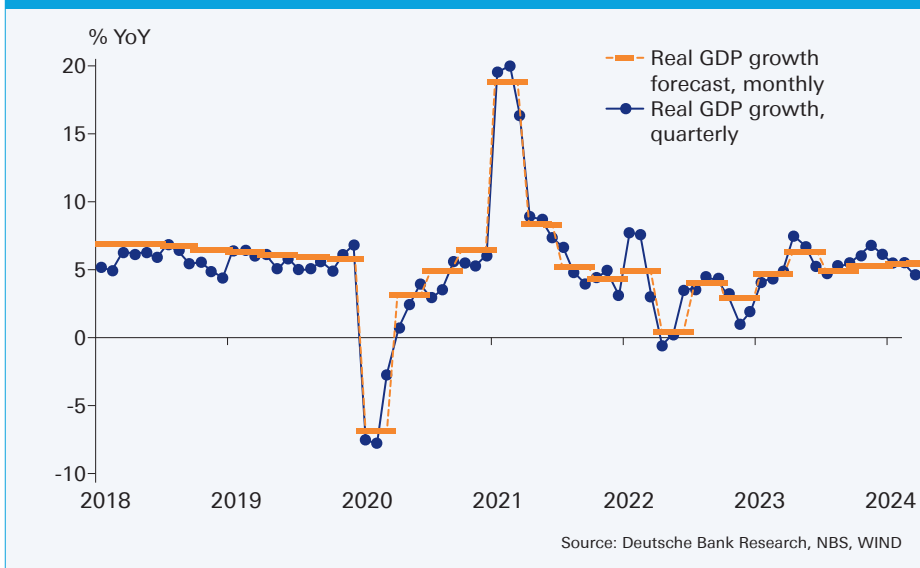
Image: Unsplash / Annie Spratt

In figures

GDP 2023: US\$17.7trn
(World Bank)

FDI 2023: US\$23bn
(SAFE)

Figure 1: China's GDP growth rates



bond market.” This interest rate disparity certainly also helps bolster this RMB-denominated financing.

The size and importance of the real estate sector has grown exponentially in recent years, assisted by – among many other factors – the attractiveness of the real estate investment trust (REIT) structure (including H-REITS) and of deploying investor funds through these structures throughout China, but especially in the Greater Bay Area (GBA). As our earlier analysis explained, on 2018 figures the GBA alone would have comprised the world's 12th largest economy, with a total population of more than 70 million. But while high debt levels have caused cash flow challenges for some high-profile players in the sector, this has still produced some high-yielding investment opportunities for investors with the appropriate risk profile. Overall, however, “the property sector will likely continue to recover,” a Deutsche Bank report found, although Yi noted that the sector is still weak.

Trade and supply chains

Key corridors

Trade flows can be analysed and named in a variety of ways. An examination of, for example, China's key trading partners (the US, Germany, Japan, India, ASEAN countries and the Middle East) is a helpful indicator of the region's extensive supply chains and overseas investment priorities. Deutsche Bank's trade and investment transaction pipelines are growing as Middle Eastern investors increasingly view China as a strong economy.

Turning to the wider concept of a ‘trade corridor’ adds a useful macro

dimension, as it shines a light not only on those trading partners and the routes between them, but also the investment in intermodality and step-change in strategy that was displayed initially when China began its Belt and Road Initiative in 2013. Examples of these trade corridors highlight developments that underscore China's position as a global trade hub.

1. New International Land-Sea Trade

Corridor – a trade and logistics passage with an operational hub at Chongqing, connecting more than 490 ports in 120 countries and regions. Established by China and ASEAN countries and now part of the Global Shipping Business Network, it connects the Silk Road Economic Belt, the 21st Century Maritime Silk Road and the Yangtze River Economic Belt. Launched in 2017, it continues to grow in use, aided by its intermodal technologies. For example, recent figures show it experienced year-on-year growth of nearly 15% in terms of TEU (containers) transported.



The government has reiterated a set of measures to attract foreign investment

Ben Li, China Head of Securities Services,
Deutsche Bank China

2. EU Middle Corridor Trade Route – the Trans-Caspian International Transport Route (TITR), better known as the Middle Corridor, is a network of transport routes that replicates the ancient Silk Road, extending from China to Europe across Kazakhstan, the Caspian Sea and the Caucasus into Turkey. Operational since 2017, the Middle Corridor is a multimodal transport system relying mostly on existing basic rail and port infrastructure. The EU has already allocated €10bn for infrastructure-related investments in China, through its Global Gateway initiative – and is considering deepening its engagement.

Energy transition investment

China's investments in decarbonisation have predominated along these trade corridors, and from electric vehicles (EVs) to infrastructure and renewables, China has provided beneficial foreign direct investment to trading partners around the world. Two examples from Central Europe are:

- Chinese battery and component manufacturers have announced more than €10bn of investments in Hungarian factories in the past 18 months. In August 2023, for example, Contemporary Amperex Technology Co., Limited (CATL) announced an investment of €7.34bn to build a 100GWh battery plant in Debrecen, eastern Hungary, which is also its second battery plant in Europe following its investment in a site in Thuringia in central Germany. Construction of the first production facilities is under way. EV maker BYD also announced in December 2023 a raft of new factory projects in the country – such as a car factory to be built in Szeged in southern Hungary.
- Chinese EV investments are also being made in neighbouring Slovakia. China's Gotion High-Tech has created a joint venture with local Bratislava-headquartered InoBat to produce EV batteries at a plant with annual output of 20GWh, to be built in Šurany in the west of the country.

Edward Hui, Head of Structured Trade and Export Finance (STEF) for APAC at Deutsche Bank, points out that the bank has worked with Sinosure (the China Export & Credit Insurance Corporation) on export finance solutions that support the work of clients since 2007. These range

from “medium and long-term export credit insurance, investment insurance, [to] domestic trade credit insurance and beyond” in what Hui calls a “series of firsts” for an international bank. Sinasure’s risk coverage – of up to 95% of an investment – has increased Deutsche Bank’s appetite for funding such projects. This can be seen in sustainable finance the bank has structured and arranged, from wind farms in Australia, hybrid solar projects in Africa, to green methanol-powered container ships.

Capital flows and investor behaviour

Inbound flows of capital

A country’s direct investment liabilities are a gauge of foreign capital flowing into it. Data released by China’s State Administration of Foreign Exchange (SAFE) indicated that China’s totalled around US\$23bn in 2023 – or an 82% decline on the previous year and the lowest annual figure since 1993.

However, by Q2 of 2023, the tide seemed to be turning. According to market data, foreign investments in the China Interbank Bond Market (CIBM) had increased for seven consecutive months. In short, reflects Deutsche Bank’s Li, “inbound investment is more positive than last year” and flows from ‘corridor clients’ in ASEAN countries and the Middle East have increased. The following two transactions serve as powerful illustrations of this:

- **Dalian Wanda.** Middle Eastern investors ADIA and Mudabala featured in a consortium investing in China recently, specifically in Dalian Wanda, one of China’s largest privately owned conglomerates. The transaction saw the consortium acquire 60% of Newland Commercial, the new holding company of Dalian Wanda’s commercial management business. Newland Commercial is the world’s largest operator of shopping malls by square footage. It currently manages around 500 malls across 227 cities in China with gross floor area under management of 65.6 million m² and an average occupancy rate of 98.7%. In 2023, it generated revenues and net profit of US\$4.0bn and US\$1.1bn, respectively. The transaction was valued at US\$8.3bn, implying an enterprise value of US\$13.9bn. Deutsche Bank was the sole financial adviser to Wanda Commercial on the transaction.
- Saudi Arabia’s **Saudi Aramco** has invested in the construction of oil refineries in the eastern Zhejiang



There is a huge demand for cross-border RMB financing

Kok-Leong Lee, Head of Trade Finance, Lending and Corporate Cash Management Greater China at Deutsche Bank

province, valued at RMB83.7bn (US\$11.83bn). The transaction involves Saudi Aramco finalising and upgrading a planned joint venture and acquiring an expanded stake in a privately controlled petrochemical group.

For further details on the background and framework to China’s inbound investment landscape, see the online *flow* article ‘China’s post-zero investment boom’.

Cash management/treasury/payments RMB internationalisation

Since 2009, the PBOC has permitted cross-border settlement in the RMB, initially in selected provinces, and then expanded nationwide. Despite a slow start, RMB usage has expanded significantly in recent years. The Swift monthly RMB tracker noted that as at April 2024 in terms of international payments excluding payments within the Eurozone, the RMB ranked fourth in the world by volume with a market share of 4.7%.

By August 2023, it was becoming clear that the global rate hike cycle was picking up momentum resulting in clearer separation of trajectory vis-à-vis the lower

rates of RMB counterparts. “Cross-border RMB financing makes sense in the current macro environment considering the interest rate differential between RMB and other major currencies of the rest of the world. We are also able to leverage on our global liquidity support and pricing advantages to meet clients’ needs for exchange rate risk management and we are the first bank to complete the first yuan-oriented loan offering in the Latin America market,” Kok-Leong Lee, Head of Trade Finance, Lending and Corporate Cash Management Greater China at Deutsche Bank explains. “With deepened application of the yuan globally and the sustained interest rate environment, we expect to see meaningful demand for cross-border RMB financing,” he adds. The Deutsche Bank team put together a solution that allows clients based outside of mainland China to access cost-competitive funding for bank loans and Panda bonds for as long as the interest rate differential lasts.

In addition to growing inbound investment there are many PRC-based Chinese corporates who are expanding their operations overseas. This stimulates demand for additional banking support beyond that relating to cross-border RMB financing and ranges across varying sectors and geographies such as e-commerce platforms, EVs and garment manufacturers.

Outlook

The region’s growth, flexibility and attention to decarbonisation reflect the elements of the Year of the Wood Dragon, according to the Chinese Zodiac and five-element theory. With its stringent pandemic-era restrictions now behind it, Sibos Beijing 2024 indeed looks set to “connect the future of finance”.

Beijing city skyline at sunset



Image: iStock



US-German trade ramps up

As the US overtakes China to become Germany's top non-European FDI destination, financial journalist Ivan Castano Freeman provides a deep dive into these burgeoning corridors, drawing on insights from Deutsche Bank experts and the German American Chamber of Commerce, Inc. (GACC New York)

Image: iStock

Trade and investment flows between the US and Germany are entering a new, and much accelerated, phase. So much so that analysts examining data from the German Federal Statistical Office expect the US to eclipse China as the top trading partner of European nations by 2025.

German companies are rushing to boost capital investments in the US, much more so than in recent years. In 2023, they announced a record US\$15.7bn of capital commitments in US projects (total FDI having also risen (see Figure 1), up from US\$8.2bn in 2022, drawn by Washington's generous tax incentives and a robust and stable economic outlook, according to consultancy fDi Markets (reported by the *Financial Times* in February 2024). In contrast, Germany pledged just US\$5.9bn to China.

German and European companies have been drawn to the Biden administration's huge stimulus programmes, notably the Inflation Reduction Act (IRA) and the CHIPS and Science Act (CHIPS), which were enacted nearly two years ago and offer more than US\$400bn in tax credits, loans and other aid to bolster manufacturing while tackling climate change. Although the subsidies are mainly geared toward US entities, subsidiaries of German and European companies can also benefit.

As a result, German firms announced 185 capital projects in the US during 2023, of which 73 were in the manufacturing sector, fDi said. The data also highlighted how Volkswagen's Scout Motors electric vehicle (EV) subsidiary led the pack with a US\$2bn commitment to build a factory in South Carolina. Mercedes-Benz followed suit with a US\$1.9bn pledge while e-VAC Magnetics and ZF Friedrichshafen earmarked US\$500m each and Merck KGaA US\$300m.

"When you look at the last quarter, the trade relationship between Germany and the US has surpassed China for the first time over the past few years," says Volker Baer, Chairman of the German American Chamber of Commerce, Inc. (GACC New York), adding that America-bound exports reached US\$70bn compared to US\$62bn to China. US stimulus aside, a desire by German firms to de-risk from China amid supply-chain risks, while remaining close to key American markets, has also fuelled the trend, according to Baer. He highlights the *2024 Germany American Business Outlook* (GABO), which reported how 96%



It was always our intention to grow the rail business in North America

Kai Gloystein, Vice President Corporate Finance & Treasury, Knorr-Bremse

of German companies plan to boost US investments by 2026.

The US's low energy prices – at least compared to Europe, where the Russia-Ukraine war has raised costs – is also helping lure a wide range of German and European industrial and machinery firms such as cranes and hydraulics supplier Palfinger, which plans to double its US footprint in coming years.

"The US has had its own inflation issues, but levels are not nearly as high as what we've had in Europe," confirms Paul Maley, Deutsche Bank's Global Head of Securities Services and Regional Head of Corporate Bank Americas, adding, "This differential has a strong influence in German companies' investment decisions."

Transportation and energy leaders

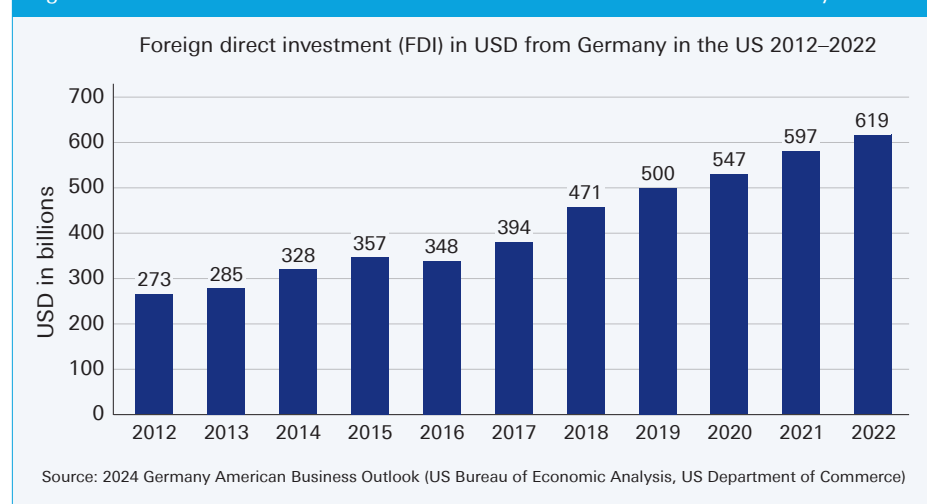
German automakers are top beneficiaries of the burgeoning US-German flows. "EV makers are building gigafactories in the US as they seek to electrify their fleet," says Maley, adding that the push is also fuelling semiconductor investments. "The average US car price is higher than in

China (the biggest automotive buyer) and that benefits the type of automaker that comes from Germany, such as our BMWs, Audis and Mercedes. They are already making cars here. The question is, will they build more in coming years? The answer is, probably, yes."

"We have been present in the US for decades with our rail and truck division," explains Kai Gloystein, Vice President Corporate Finance & Treasury at Munich-headquartered Knorr-Bremse. In 2002, the German manufacturer of braking systems for rail and commercial vehicles acquired Bendix Commercial Vehicle Systems from Honeywell. "But it was always our intention to grow the rail business in North America as well," he continues. The company announced its acquisition of the rail signalling technology business of Alstom Signaling North America in April 2024, a move that takes the company into the attractive control, command and signalling (CCS) segment of the rail market. "This was an opportunity to transform the existing US business, and Deutsche Bank has been a longstanding partner for us – from cash management and trade finance solutions to financing and hedging FX risk."

Germany's leading power firms, such as RWE, also plan to continue the country's expansion in the US as the IRA rewards sustainable and green manufacturing, a practice in which many of them have built strong credentials. Following RWE's acquisition of Con Edison Clean Energy Businesses, Inc two years ago, RWE has its sights firmly set on being "one of the top leading renewable energy companies in the United States".

Figure 1: German investment in the US has more than doubled in the last 10 years



Burgeoning opportunities

The US Department of State points out that “Germany is consistently ranked as one of the most attractive investment destinations based on its stable legal environment, reliable infrastructure, highly skilled workforce and world-class research and development,” noting that US investment continues to account for the third-largest share of Germany’s foreign direct investment (FDI) after Luxembourg and the Netherlands.

As ties between the two economic giants strengthen, financing opportunities are expected to surge.

Maley expects demand for structured finance with an import and/or export component to rise significantly, in addition to corporate banking, working capital and trade finance products.

The US-to-Germany corridor is also projected to see a growth in opportunities. Sal Vitale, Head of US Corporate Coverage at Deutsche Bank, sees a growing number of American firms targeting Germany for further investment. He notes that government incentives and the size and scale of existing German infrastructure are attractive to companies looking to structure investments in a way that diversifies supply chains.

Microsoft, for instance, has announced a €3.2bn investment in Germany to double its artificial intelligence and cloud data centre capacity by late 2025. Meanwhile, Alphabet and IBM are pouring roughly US\$3bn into similar high-tech investments while pharma major Eli Lilly is writing a US\$2.5bn cheque to build an injectables



We are looking at the US positively because of its growth outlook

Paul Maley, Global Head of Securities
Services and Regional Head of Corporate
Bank Americas, Deutsche Bank

drug-making site in Alzey, near Frankfurt. GlobalFoundries, meanwhile, intends to spend US\$8bn to double production at its chip-making plant in Dresden.

This comes on top of Intel’s plans to build a massive, €30bn chip factory in Magdeburg – billed as Europe’s biggest single FDI project in history – to benefit from €10bn in expected government subsidies. And not to be forgotten is the US\$3.8bn undertaking by Taiwan’s TSMC in Dresden. Vitale says these investments are a response to America’s IRA and CHIPS acts as EU countries continue to hone policies to attract large-scale investments from US entities, with a keen focus on technology investment which enables local companies to simplify sourcing of required components from within the EU.

Bridging the gap

Meanwhile, the German American Chambers of Commerce in the US (GACCs) support German companies by finding investment opportunities through

offices in major cities such as Atlanta, Chicago, New York, San Francisco and Washington, DC. According to Baer, “Companies are seeing increased business and higher profit margins from the US stimulus,” that is also generating jobs across the pond. Both small and large German firms are also showing a keen interest in participating in clean energy projects.

However, the GABO research noted that attracting the necessary skilled workers remains a challenge. This is why the GACC New York is ramping up its apprenticeship programme, with which it partners with American businesses and community colleges to train US students in high-tech fields. The companies pay both a scaling wage over the course of the training period and the educational costs for the related technical instruction. Based on the German dual-training model, this provides a training pathway that is directly tailored to industry needs, according to Susanne Gellert, President & CEO of the GACC New York. An example of this support in action is the iTEC initiative in the Lehigh Valley, Pennsylvania.

Gravitational pull

Many German firms expanding in the US are in it for the long haul, planning projects for the next 10 to 20 years, Maley says. Therefore, the November 2024 presidential elections or when the Federal Reserve begins cutting interest rates have little bearing on their strategy. Also, even if the next government winds back the current stimulus programmes, most of them are being earmarked in Republican states, so even a new Republican administration would be less likely to want to scrap them immediately, he adds. What matters more is the perception that the US economy is expected to remain strong and stable in the face of global recessionary and geopolitical pressures.

“Even if rates stay higher for longer, we are still looking at the US positively because of its growth outlook,” Maley notes. “It makes dollar financings more expensive, which is definitely a headwind. But if you are a CEO or CFO in the German heartland and you want to decide where you will put your next investment to work, are you going to pick the economy that’s still growing strongly or the one that’s likely to shrink?”

Ivan Castano Freeman is a freelance financial journalist



Invested

- There are 5,800 German companies in the US
- Creating 923,600 jobs
- German investment in the US was US\$619bn in 2022

Source: germanbusinessusa.com

Milan Stock
Exchange

Italy's mighty mid-caps

Thanks to the European policy response to Covid-19, Italy moved from economic headwinds to tailwinds. But can it stand on its own feet? *flow* shares some perspectives on Italy's prospects for growth and its thriving corporate sector

As the world's eighth largest economy by gross domestic product (GDP) and sixth largest manufacturer, Italy enjoys a trade surplus thanks to its exports of medicines, machinery and consumer goods, and its popularity as a tourist destination.

However, before the pandemic the country was, as Clemente De Lucia, Senior European Economist at Deutsche Bank Research, puts it, "trapped in a self-reinforcing equilibrium of low growth, high debt and high interest rates". It was underperforming the rest of the eurozone (EZ) and in 2013–2019, its average GDP growth rate was more than a percentage point below the EZ average. This meant that Italy had to run primary surpluses well above the euro area average "to keep the debt ratio on a sustainable path," De Lucia says. But, post-pandemic, Italy's growth has exceeded its euro area peers.

Accelerants of this cyclical outperformance include:

- The superbonus – a tax incentive for energy-efficient home renovations

that boosted investment spending and construction activity. It cost the country more than anticipated, but access is now tightening, with its effect fading during 2024.

- Italy's share of the EU's Next Generation EU (NGEU) funds – so far, notes De Lucia, only €45bn of Italy's €100bn allocation has been spent. If funds were spent quickly and well, GDP

“German and Italian companies think very highly of each other and in many areas work together

Roberto Parazzini, Chief Country Officer for Italy, Deutsche Bank

“could rise,” but if Italy's capacity to spend and absorb the NGEU funds lags, “the market could become more concerned about growth,” he adds.

The July 2023 *IMF Country Report No. 23/273* commended the Italian economy's resilience to sequential adverse shocks, noting the strong recovery in output and employment. The report noted that the fiscal deficit has “widened sharply, the public debt ratio is very high, and core inflation remains elevated”. As a declining working-age population could lower economic growth over the longer term, the country needs to “focus on fiscal adjustment and ambitious structural reforms to raise productivity and potential growth,” according to the International Monetary Fund (IMF).

Italian-German cooperation

Roberto Parazzini, Deutsche Bank's Chief Country Officer for Italy, is bullish about Italy's prospects. “We have a very positive view of the country, not only

on the banking sector, but also on the competitiveness of the system and its growth, especially regarding its role in the EU. After Germany, which plays in a different league, for us Italy is the second country of reference in the EU and we have a great desire to continue on this path," he told Class CNBC (the Italian arm of CNBC) on 27 March 2024.

In Berlin on 22 November 2023, German Chancellor Olaf Scholz and Italian Prime Minister Giorgia Meloni signed a bilateral 'Action Plan' to deepen Italian-German cooperation. The plan, noted Reuters at the time, "also pledged to enhance regular dialogue".

"Cooperation between the two countries at the business level is very good," reflected Parazzini, in an interview with *Milano Finanza's* Luca Gualtieri 10 days later. "German and Italian companies think very highly of each other and in many areas they work together. This agreement has further strengthened relations, bringing the two countries even closer together."

Paolo Maestri, Country Head for Corporate Bank, sees this in how Deutsche Bank defines its Italian presence, saying, "In essence we are a truly global bank and a truly local bank at the same time." He adds that Italian subsidiaries of European, US and Japanese multinationals plug in to Deutsche Bank Italy to collect and pay



A peculiarity of the Italian economy are the well-known mid-caps, similar to the German 'Mittelstand'

Paolo Maestri, Head of Corporate Bank Italy, Deutsche Bank

locally with highly domestic instruments, while Italian corporates and financial institutions ask for the bank's support to go global.

"A peculiarity of the Italian economy," he continues, "are the well-known mid-caps. Similar to the German 'Mittelstand', these companies are very well run, super innovative and are often global leaders in their respective niches." In 2001 the benchmark index Euronext STAR Milan Segment was created by the Borsa Italiana to "promote excellent SMEs and to increase their visibility towards Italian and foreign investors".

"Deutsche Bank's long heritage of working with the 'Mittelstand' in Germany allows us to credibly cover them alongside the Italian blue chips," says

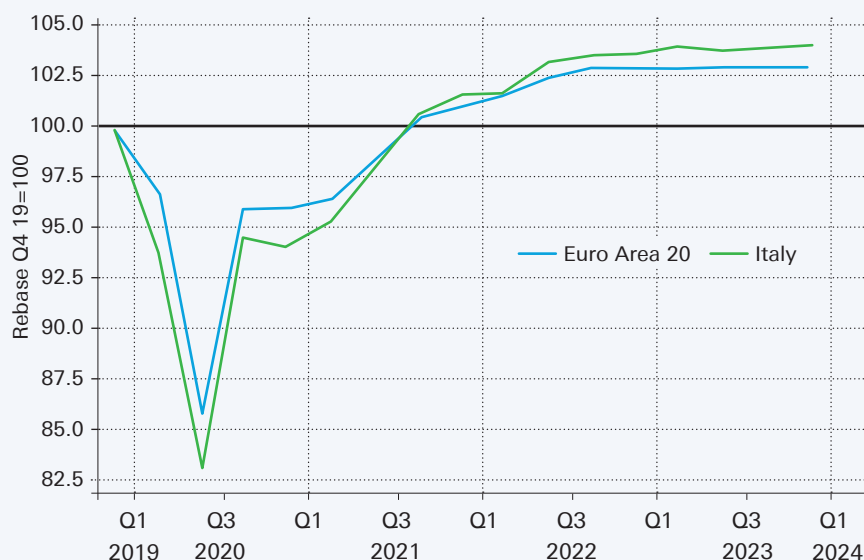
Maestri. The segment has needed a lot of nurturing during the recent climate of higher interest rates and tackling high inflation. In a market such as the European one, where banks still provide around 70% of the total resources to support businesses, refinancing with such high rates has become a key area of discussion with Corporate Bank clients, as Corporate Bank and Investment Bank Head Fabrizio Campelli explained to *Milano Finanza* on 27 April 2024.

Recent transactions

A recent example of German-Italian cooperation is the sustainability-linked supply chain finance (SCF) programme Deutsche Bank developed with Epta Group, an Italian-based commercial refrigeration multinational, which has a very strong presence in Germany. In March 2024, the company announced the programme, explaining, "The finance programme developed with Deutsche Bank is an additional milestone in our mission of being the green transition enabler in the commercial refrigeration sector". The SCF programme makes it possible for Epta's suppliers to get paid immediately after an invoice has been approved by Epta, with the financing costs for the suppliers being based on Epta's creditworthiness. An added benefit of this sustainability-linked SCF is that suppliers can further reduce financing costs in the supply chain if they improve their ESG rating – in this case an ESG rating by the global sustainability rating platform EcoVadis. The more sustainably a supplier operates, the greater the pricing benefit. Simone Salani, Epta's Group Purchasing & Procurement Director, said, "We are proud to take a further step in this direction and we believe the decision to support our sustainable partners is a strong message to the market and our stakeholders."

Another example of the cross-country collaboration, as well as of the strength of the relationship between Deutsche Bank and Italian Export Credit Agency SACE, is the signing by Germany's Salzgitter AG of a SACE/SIMEST-covered green loan financing totalling €500m, in connection with the direct reduced iron plant supplied by Italian companies Tenova and Danieli to support the decarbonisation of its steel manufacturing operations. Deutsche Bank acted as joint-mandated lead arranger and lender, and sole sustainability coordinator, in which capacity the bank ran the green loan classification process.

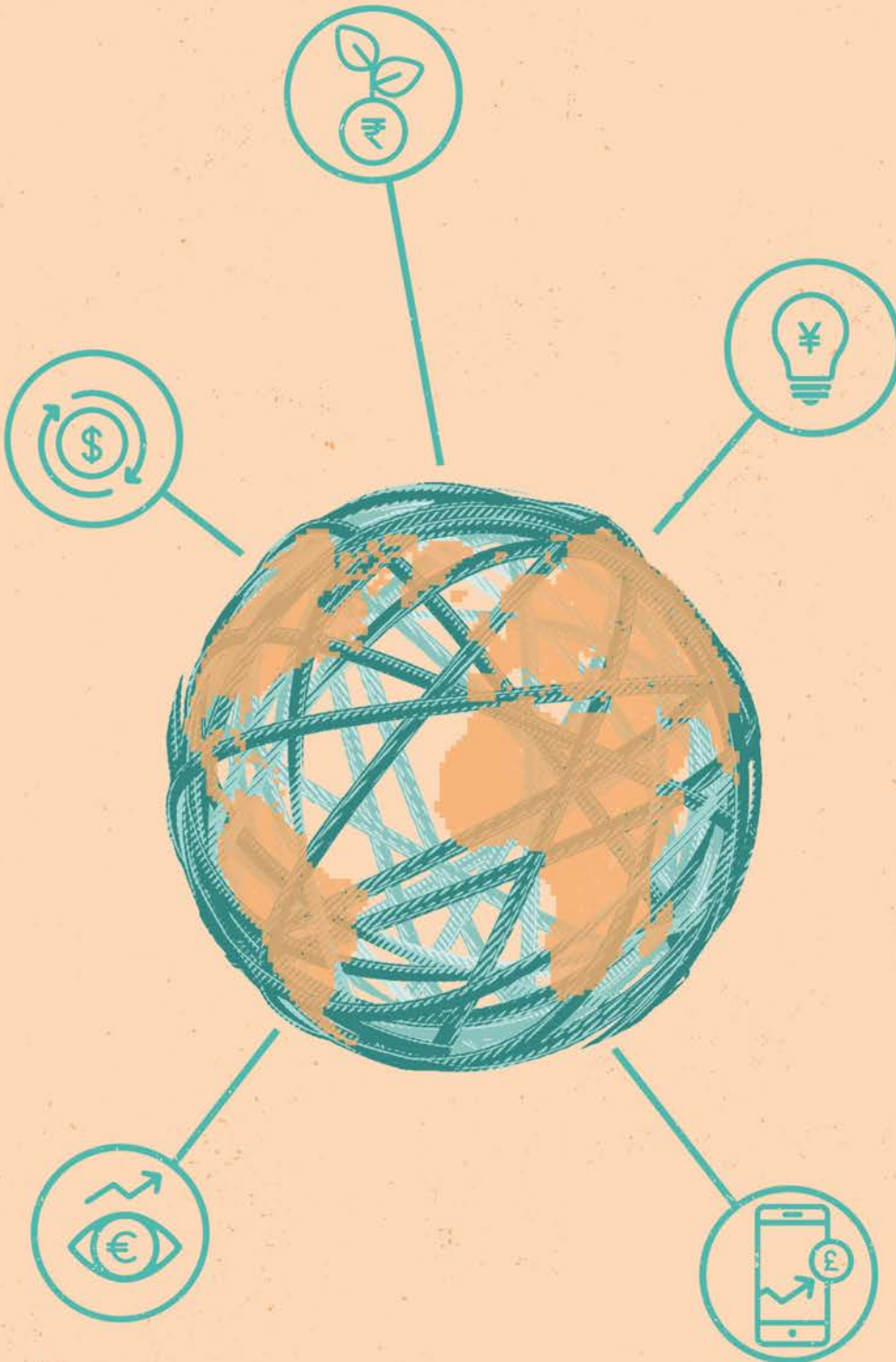
Figure 1: GDP levels: Italy vs Euro Area



Source: Deutsche Bank, Eurostat, European Commission, Macrobond

Cash Management

A closer look at real-time finance, cross-border payments, treasury's role in B2B marketplaces and financial inclusion



Big debate

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The vision of a 'real-time treasury' has been around for several years now. But how do instant payments and access to real-time information really change the way treasury is managed? *flow's* Desirée Buchholz hosts a debate on the role of real-time in the future of treasury

Tomorrow's treasury: what's the role of real-time?



Desirée: *We are living in difficult times: There are wars in Ukraine and the Middle East, geopolitical tensions between the US and China and economic slowdown in big markets like Germany. But what does that mean for you as corporate treasurers?*

Can: From my point of view, uncertainty impacts corporate treasurers in three ways. First, we as treasurers need to ensure that critical processes around cash and liquidity management, FX and regulatory compliance can take place without interruption in a crisis situation. Business continuity plans and cross-training of staff must be in place before a crisis occurs.

Second, treasurers need to invest in the right people, processes and systems so that they can understand and monitor exposures around market, counterparty and liquidity risks in times of stress. Taking the latter as an example, this means 100% real-time cash visibility and a strong scenario analysis and stress testing framework, in addition to a set of tools including credit lines and repo access to be able to source liquidity quickly when needed.

And, last, the volatile environment requires a heightened focus on risk management. At PayPal, we invested heavily in our counterparty risk management framework last year and brought the duration of our investment portfolio down significantly to reduce interest rate risk. So, in volatile times like these, we believe it's important to maintain a conservative posture and a strong balance sheet.

Jörg: To add to Can's insights, I would frame the tasks as 'business as usual'. If you have presence in 70 countries and sell your goods to almost the whole of the rest of the world, as Merck does, there is always a crisis somewhere. Today it's Ukraine/Russia, tomorrow it could be China; or it's hyperinflation in Argentina and Turkey – not to mention political conflicts in some parts of Africa. So yes, unfortunately there are multiple crises, but it's our job to deal with a changing environment.

Setting up robust processes is a prerequisite to being prepared for the unexpected. At the same time, our set-up needs to be flexible – especially when it comes to unexpected market distortions for financing and payment methods. Flexibility and adaptability need to be part of a treasurer's DNA.

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Desirée: *Apart from flexibility, what are other elements that could support corporate treasurers to do their jobs? Do you believe that accessing treasury-relevant data in real-time is helpful – to then react quickly to changing conditions?*

Christof: Merck and PayPal have two very advanced treasury set-ups. What Jörg and Can talk about is probably not the level every company is operating at. Many companies still need to get the foundation right before thinking about real-time. This means achieving centralisation and automation: setting up an effective inhouse bank structure, leveraging virtual accounts to reduce the number of physical bank accounts and so on.

Centralisation not only caters for efficiency and cost reduction, but it also enhances control: the more centralised you are in your set-up, the more you are in control of your cash – which in turn helps you to deal with a crisis.

In addition, you need to ensure automation. Most treasury departments are very lean, which means it's essential to focus the resources you have on the most critical risks and automate others.

Desirée: Let's talk definitions. The vision of a 'real-time treasury' has been around for several years now. In Europe, it appeared with the introduction of SEPA instant payments in 2018, which made it possible to transfer money from one bank account to another 24/7 with finality of payment in less than 10 seconds. Obviously, the term has evolved since then, so what's your view on this buzzword now?

Christof: For me real-time treasury means having access to the right information at the right time to take decisions quickly. It is not necessarily about instant payments, which are only critical for some companies, depending on their business model. In essence, real-time treasury means moving away from end of day/MT940-based processes to a more intraday management of cash and risk. That's clearly a trend we are seeing.

Parvathy: With volatility, uncertainty, complexity and ambiguity (VUCA) the need for speed is increasing across corporates. A new survey by the European Association of Corporate Treasurers (EACT) shows that real-time reporting has top priority for

“
Real-time treasury means having access to the right information at the right time to take decisions quickly

Christof Hofmann, Deutsche Bank

corporate treasurers in the next 12 to 24 months (see Figure 1). Many companies, however, face the challenge of processing the information they receive in real-time. To do so, your enterprise resource planning (ERP) and treasury management systems (TMS) must consume the information instantaneously, and you must have the processes in place to make decisions on funding, hedging or investing quickly based on this information.

Desirée: Fast and convenient payments sit at the heart of PayPal's business model. What does that mean for the treasury function? And how are instant payments changing the equation?

Can: As payment transactions are moving to 24/7 and 365 days a year, our liquidity management practices need to change

accordingly. Our business model requires receiving payments from our banking or processing partners, and then settling with our customers. Therefore, the difference in settlement timelines of inflows and outflows is a key factor that drives our liquidity management.

Instant payments change this equation meaningfully. As they become more prevalent globally, we don't need to accommodate the traditional constraints of the legacy financial infrastructure, where banks process payments in blocks and only during workdays. However, in practice, we are still seeing those constraints today, and this impacts our work in treasury.

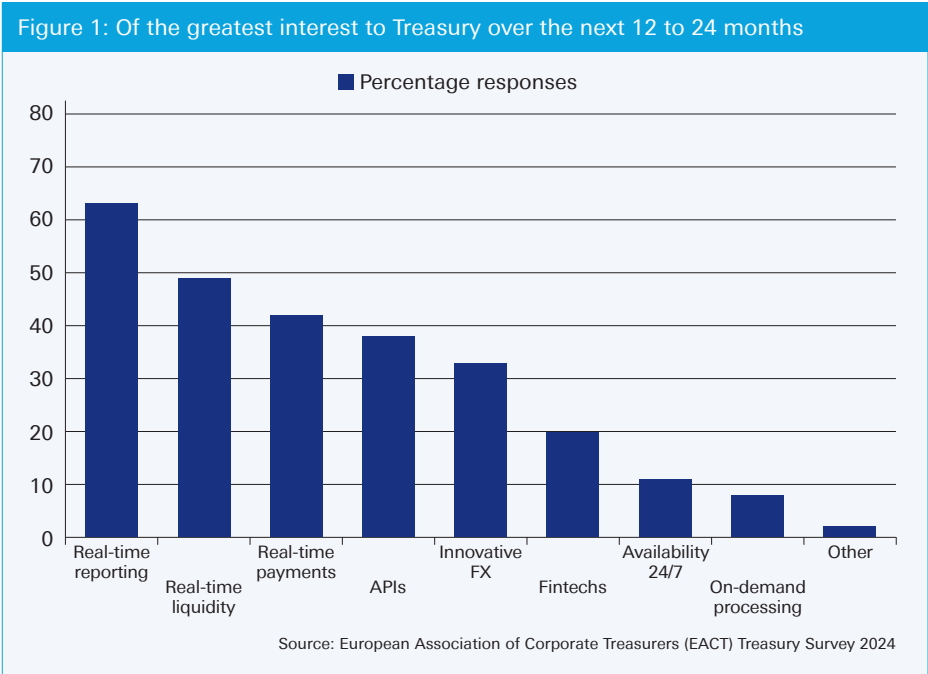
As an example, we see our customers requesting more real-time access to their funds – which increases our liquidity outflows. So, to the extent that there is no corresponding change in settlement timelines for inflows into our platform, our liquidity needs may actually increase.

Desirée: How do you ensure there is sufficient liquidity on the accounts to enable real-time payouts to your customers?

Can: In corporate treasury, we need to evaluate and design new processes to ensure our accounts are always funded properly. The first step for us was to implement changes in our liquidity forecasting models to ensure we account for the increased velocity of real-time payments. Second, as we connect with domestic instant payment rails, we may in some cases need to pre-fund the bank accounts enabling payouts. Third, we are working with our banking partners to ensure that the accounts used for instant payments get access to appropriate credit lines.

Desirée: On the back of what you just described: what's your view on guidelines like the G20 Roadmap (see 'G20 Roadmap: moving from guidance to action' on p.32–33) which aims to speed up cross-border payments?

Can: The G20 Roadmap on cross-border payments sets targets, but it doesn't describe how to get there. There are a number of different models evolving. For example, I am currently based in Singapore and there is bilateral instant payment connectivity between Singapore with Thailand and India. Apart from these bilateral agreements, there is a project driven by the Bank of International Settlements (BIS) to create a single



Real-time

In Q1 2024, 17.34%
of all SEPA credit transfers
were conducted instantaneously

Source: European
Payments Council

Image: iStock

platform for clearing and settling cross-border transactions. It's good to see that the will is there to make cross-border payments faster, easier and cheaper – but it's hard to say yet which model will become ubiquitous.

Desirée: Jörg, as a science company operating across healthcare, life science and electronics, Merck has a very different business model to PayPal. You manage a highly centralised treasury set-up, and you have received several awards for implementing automated, straight-through processes. What role do real-time applications play for you?

Jörg: If we look at real-time payments, those are hardly relevant for us as a business-to-business (B2B) company. We have payment terms of 60 to 90 days, so it's not necessary to pay within seconds. For us, real-time payments may play a role for certain type of transactions such as M&A deals, royalty or tax payments.

Christof: That's what we hear from many clients in B2B industries. Let me add another use case where real-time payments could become interesting: to avoid the early cut-off times of most automated

clearing house (ACH) systems. Instant payments allow treasury to pay later in the day, move liquidity quicker and reduce the effort for short-term forecasting. But that clearly requires the amount threshold to exceed what we typically have in instant payment schemes at the moment. In Europe, for example, the threshold is currently still at €100,000 for single euro payments area (SEPA) instant payments. This is why we offer instant payments between our branches for up to €250m, to help clients avoid the early cut-off times.

Jörg: That's a very valid point. Based on intraday bank statement files such as MT942 and the respective CAMT formats, we already withdraw liquidity in some Asian markets prior to day-end

“ Instant payments change our liquidity management equation meaningfully

Can Balcioglu, PayPal

to ensure efficient and centralised liquidity management.

For me, real-time treasury is all about transparency and having access to the data whenever it's needed. Some treasury processes should be managed in close to real-time, in particular FX or interest rate risk. The problem, however, is what Parvathy has pointed out: a real-time solution provided by banks or market infrastructures doesn't help if your ERP only has a night batch run. It's nice to have a Formula 1 engine, but if your car has the wheels of a Beetle you can't achieve the speed.

Desirée: How do you replace the wheels to turn your treasury IT into a Formula 1 car?

Jörg: As a treasury function, we must deal with the circumstances and make the most of them. We have several ERP systems at Merck globally, some are capable of real-time processing and some aren't. For core treasury tasks such as FX and cash management, we can adjust our inhouse bank to fit our purposes. But for most treasury processes, close to real-time is sufficient anyway and getting any faster than 15 minutes wouldn't be a game-changer for us.



Christof: That's a very important point. For consumer experience purposes, settlement needs to happen within seconds. For treasury purposes, 15 minutes is enough to better manage your counterparty limits, improve cash velocity and react later and faster in the day.

Jörg: Definitely, and in the end it's not so much about optimising the last cent in the euro or dollar, but about centralising the cash in Vietnam or in other restricted markets – this is usually where millions in trapped cash is lying.

Desirée: But how can cash concentration be achieved in restricted markets with capital controls, tax requirements and other measures hampering cross-border flows?

Parvathy: Cash pooling as we know it in the Eurozone/unrestricted markets

“Getting any faster than 15 minutes wouldn't be a game-changer for us

Jörg Bermüller, Merck

cannot be implemented in most of these restricted markets due to exchange controls, central bank approvals and all the paperwork these bring. But, as we leverage our knowledge of local regulation and central bank processes, we can help corporates automate processes and seamlessly combine cash management transactions with hedging to better move liquidity. Increasingly, we hear that dealing with trapped cash is a key priority for treasurers – and Merck has been a pioneer here.

Desirée: Let's come back to real-time. Can, you mentioned that PayPal is changing its processes to improve cashflow forecasting. Can you share a few more insights on what you are doing exactly?

Can: Sure, this is a project we undertook to improve our short-term cash positioning on bank accounts that hold our customer cash. The legacy process was based on using historical cash inflow and outflow data to drive our forecast. We saw an opportunity to use customer activity data to inform our cashflow forecast. Therefore, we set up a team of treasury, product and engineering specialists to build a new forecasting

tool which essentially uses data from our payment files as the primary input to our forecasting process.

The team built a proof-of-concept which showed that the new process improves forecasting accuracy from around 85% to 98%. This will help us to reduce liquidity buffers; in addition, we'll be able to better manage risk as the new methodology allows us to detect any settlement delays from our processing or banking partners on a more real-time basis. We are now rolling out this new tool to cover most of our bank accounts.

Parvathy: There is a lot of buzz around artificial intelligence (AI) in forecasting these days. Did you leverage AI as well for this new tool?

Can: Our engineering team built the forecasting methodology using certain AI techniques. The term AI is used pretty freely these days, but if we are speaking about machine learning, which essentially means using statistical techniques to analyse structured data, we at PayPal have been doing that for a long time – for example, when it comes to fraud detection in our payments platform. This institutional knowledge helped us here as well.

Case study: real-time API

Why are APIs key to achieve the goal of real-time treasury? In this flow case study, Dirk Schreiber, Head of Treasury at German biotech company BioNTech, explains why he believes that APIs are the future for corporate treasury and how he has teamed up with Deutsche Bank and SAP to implement real-time account balances and push notifications for credits and debits via API



Desirée: *We have heard where real-time information could be of value, and we have talked about legacy systems and lean treasury teams holding treasury back from making use of these opportunities. What does that mean for us as a bank?*

Parvathy: Treasury tech budgets are always a constraint, so we see a lot of clients facing the challenge of creating an internal business case to embark on those transformational journeys – especially if you have a very complex treasury infrastructure. That's where we try to support our clients by offering technology solutions which reduce the investment required on the corporate side. For example, we enable our clients to automate FX, payment and liquidity workflows in complex markets, or we offer technologies such as virtual ledgers to handle virtual accounts and implement an inhouse bank.

Christof: We also work with the traditional ERP and TMS providers for them to integrate application programming interfaces (APIs) into their standard set-up as much as possible to ensure it's not a bespoke, and therefore more costly and time-consuming, setup



Increasingly, we hear that dealing with trapped cash is a key priority for treasurers

Parvathy Ramachandran, Deutsche Bank

for the individual company. We want to offer APIs as a standardised connectivity option to get access to real-time bank account information and instant payments (see QR link to real-time API case study on p.26).

Desirée: *Let's look ahead: how will treasury be managed differently in five to ten years?*

Can: Payment rails have been static for a very long period of time. But this is changing now with the rise of instant payments schemes, cryptocurrencies and stablecoins (for which we have our own offering with PayPal USD). I believe that

the dynamic we see in this space will accelerate even more. There are a lot of unknowns, but it's for sure that things will look quite different in five to ten years.

Jörg: It will be the same but different. I have been in treasury for several years now and it's always about liquidity, risk and transparency. What will be different in five to ten years are the tools, the technology and maybe the partners you are working with – maybe there will be more fintechs. That's what I am telling my people: it will be the same but different.

Christof: There will never be a revolution in treasury, only an evolution. Stability is key when you are managing risks, but the outside world changes. I believe that in five to ten years, ACH systems in selected markets will start to be decommissioned and only instant payments will be available. Moreover, new technology will have emerged, APIs will be a standard integration in treasury and certain elements of AI will have found their way in, allowing for more automation. But, in the end, treasury departments will be at different maturity levels just as they are today.



5–10 years

Future trends in treasury:

- APIs will be a standard integration
- AI will allow for more automation
- Instant payments as new normal
- Growing importance of cryptocurrencies and stablecoins
- More fintech partnerships

Tackling payment fraud and friction

Frictionless payments and fraud prevention remain top of mind for corporate treasurers. *flow* explores how account pre-validation is being used to drive efficiencies – and why these services are a prerequisite for real-time treasury



Online payment fraud is likely to have hit around US\$48bn in 2023, after rising from US\$41bn the previous year. So, what is going on and how can it be reduced or, even better, prevented?

Here is a typical example of how fraud happens. A vendor that a company regularly works with sends an invoice with updated payment details. Without checking, the corporate changes the static data it holds for that vendor, as it believes the request comes directly from the account's primary contact, and pays the invoice. Yet a couple of weeks later, the company learns that the money – as well as subsequent invoice payments – never reached the vendor. Following an investigation, it turns out that the email with updated payment details was sent by a fraudster via a compromised email and the money was remitted to them instead of the company.

This scenario – known as business email compromise (BEC) or payment diversion fraud – is one of the most common digital crimes. According to data from the FBI's Internet Crime Complaint Center (IC3), Americans alone lost US\$2.9bn via BEC in 2023. As Europol pointed out in a December 2023 report, these fraud techniques are now often accompanied by deepfakes, i.e., artificial intelligence (AI)

software that makes synthetic duplicates of real people's voices, images and videos.

However, avoiding fraud is not the only challenge when it comes to handling payment data. Corporates also frequently experience payments returns caused by the inability to verify account information prior to their supplier onboarding process, or while the payment is being processed. This results in additional fees, payment delays, lost funds and an overall poor customer experience. In 2021, Swift estimated that "friction in the payments system costs the industry more than

US\$2bn every year, affecting over 700 million transactions. But much of this friction is the result of avoidable errors, such as typos and formatting errors." Other estimates are much higher.

"Resolving inaccurate payment details is often time-consuming and labour-intensive. Minimising the number of payment returns and thwarting increasingly sophisticated fraud attempts is an effort that allows for no respite," says Kerstin Montiegel, Global Head of Client Access & Services and Head of Relationship and Transaction Management GAS, Deutsche Bank.

EU Instant Payments Regulation

The need to confirm before a payment is sent that the instructed payee is indeed the intended recipient becomes even more pressing for instant payments. Given that the money is immediately available to the payee, there is no room for mistakes.

As the EU wants to make instant payments the new norm across the continent (the new Instant Payments Regulation came into force on 9 April 2024), it will mandate banks to offer a new service which is named Verification of Payee (VoP) by October 2025. Under VoP, banks and other payment service providers (PSP) will be required to check that the IBAN and beneficiary name match before a payment is sent. This is not only supposed

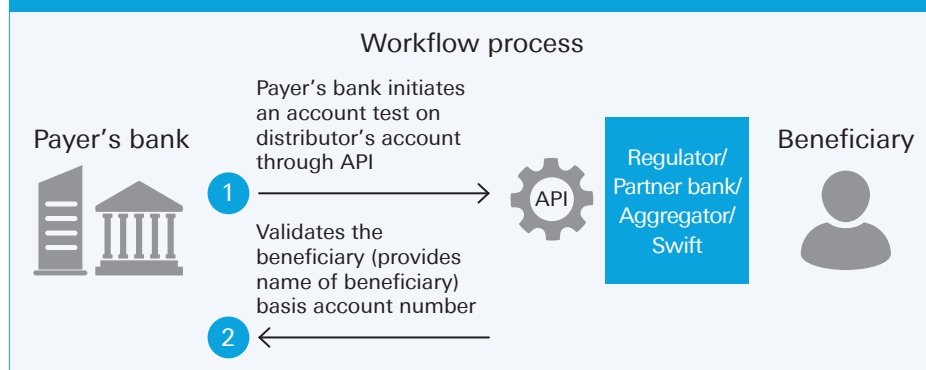


Minimising the number of payment returns and thwarting increasingly sophisticated fraud attempts is an effort that allows for no respite

Kerstin Montiegel, Global Head of Client Access & Services and Head of Relationship and Transaction Management GAS at Deutsche Bank

Image: iStock

Figure 1: Account pre-validation workflow process



to bring a widespread reduction in fraud, but also to drive down the high numbers of manual interventions and keep funds safe and moving – reducing costs and driving efficiencies for corporates.

But how exactly does this work? So-called pre-validation solutions can be made available through an application programming interface (API) plugged into the vendor's master data portal. Corporates can check the existence of their payment's beneficiary in real-time, using key account details such as IBAN, name and account number. Before corporates send their transaction, they can confirm that the beneficiary is who they say they are, and ensure that the account details they have on record are correct (see Figure 1, above).

The ability to validate account information has benefits for many use cases. For instance, when paying an account for the first time, pre-validation can help to reduce the risk of it going to the wrong recipient. Additionally, the solution applies to direct debt mandates and one-off rebates/refunds. Treasurers can reduce the risk of direct debit mandates being returned due to wrong account details and authenticate account information when a rebate or refund is needed. Finally, when it comes to actioning payroll payments, it can confirm that bank accounts of employees are still active.

Industry initiatives

For pre-validation to have the greatest efficiency, it requires two things:

1. A robust data pool from which to draw, to ensure comprehensive coverage for corporates. In other words, companies need to be able to validate supplier master data in several countries around the world – irrespective of the bank at which the supplier holds its account.

2. An API-based connectivity which enables the validation request to be sent to the data source or ultimate beneficiary bank directly in real-time, ascertaining accuracy in the response received.

So, what does a robust data pool look like? Figure 2 (below) highlights four data sources that Deutsche Bank taps into for global coverage.

For a start, industry initiatives play a big role as they allow the leveraging of data from strong correspondent banking relationships. Swift's beneficiary account verification (BAV) solution aims to do exactly this by enabling all the banks on the Swift network to both send and respond to verification requests, leveraging APIs to cross-reference the account details with the identity of the beneficiaries. In November 2021, Deutsche Bank was the first bank to roll out Swift BAV on a global basis – both as data provider and consumer of the Swift BAV services – establishing itself as a front-runner.

At the same time, banks are also coming up with other innovative and collaborative ways to pool their resources to further

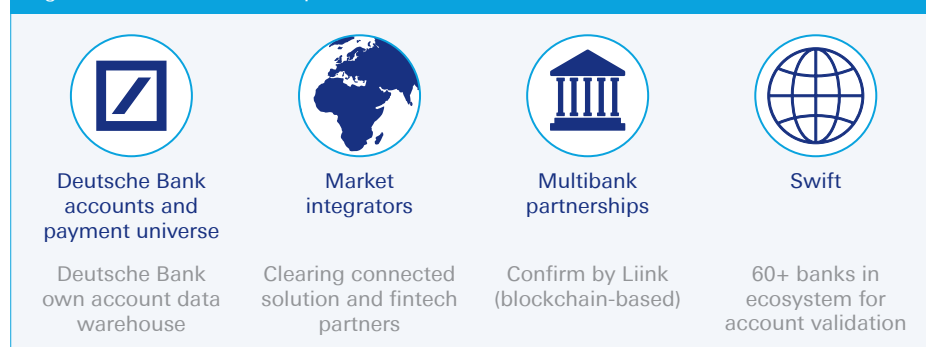
bolster their data pools and validate more account details. For example, Deutsche Bank is a founding member of the Confirm service, powered by the Link network from Onyx by J.P. Morgan – a blockchain-based bank initiative where participants on the peer-to-peer network can exchange information privately and securely.

Moreover, the bank also hooks into Deutsche Bank's in-house private banking data network, adding a few million private and business client accounts. This can be helpful for corporate clients with B2C businesses, such as insurance or telecommunication companies.

The final piece of the puzzle is adding any third-party data where available. Some local markets – such as Indonesia, India and the Netherlands – have regulatory-driven, clearing-based account validation solutions, and some fintech is emerging to add additional resources in others. Also, institutions like EBA Clearing are launching new API data validation services (known as fraud pattern and anomaly detection, or FPAD) that will help participant banks to significantly extend the range of available data coming from historical payment transactions and improve their overall anti-fraud capabilities.

"Our vision is that pre-validation is possible in every country around the world, which is why we don't want to rely on one single network but partner with several initiatives," says Jose-M Buey, Global Head of Core Banking Transformation and Accounts Solutions, Deutsche Bank Corporate Bank. "We have integrated a range of sources and are now reaching more than 20 countries globally and validating from a pool of more than one billion accounts. There are plans to increase the coverage to more than three billion accounts over time through additional engagements."

Figure 2: Data sources for pre-validation service



An ecosystem approach to limit de-risking

While important progress is being made worldwide on financial inclusion, de-risking may act as a brake on that progress. Joy Macknight explores what can be done to address banks terminating or restricting activities with clients

Financial inclusion is a key enabler to reduce extreme poverty and boost shared prosperity, and contributes to seven of the 17 UN Sustainable Development Goals. Having access to useful, reliable and affordable products and services is vital for all types of customers, from micro, small and medium-sized enterprises through to large corporates and financial institutions.

For the latter, correspondent banking services, such as cross-border payments and trade finance, allow them to participate in the global economy. Individuals, small businesses and charities also require access to cross-border cash services to

send remittances to their home country, pay bills and salaries, and purchase goods.

“Whether it is supporting large infrastructure projects or facilitating aid flows to distressed areas, providing financial services dramatically impacts people’s livelihoods and their ability to survive, as well as driving economic growth and a country’s ability to attract investment,” says Patricia Sullivan, Global Head of Institutional Cash Management, Deutsche Bank.

The threat of de-risking

Significant progress has been made in access to financial services over the

past decade. For example, 76% of adults today have access to a bank account globally, a 50% increase compared to 2011, according to the Global Findex 2021 report. As Marion Laboure, Deutsche Bank Research Senior Strategist, points out in her book, *Democratizing Finance: The Radical Promise of Fintech*, digital technology has significantly improved financial inclusion (see *flow* 2022/2023).

On the other hand, de-risking – which is defined as financial institutions terminating or restricting activities with clients or categories of clients to avoid risk – threatens to increase financial exclusion. De-risking can happen at the individual or business level, but also at the financial institution or country level, where correspondent banks have pulled out of countries deemed too risky – or too costly – from a financial crime or compliance perspective.

The surge in financial crime, and the regulatory response of increased supervision and significant fines, has led to an intensification in de-risking over the past two decades. Geopolitical conflicts such as the Russia-Ukraine war have also contributed as banks are faced with implementing a growing number of sanctions across multiple jurisdictions and are also liable for secondary sanctions.

“The financial sector has become even more conservative in its risk appetite in light of the potential for severe penalties in a rules-based regulatory environment,” says Sullivan. “Therefore, it becomes easier to cut some of the clients or countries with high-risk indicia than to potentially withstand that scrutiny.”

Some regions have been hit harder than others, with many correspondent banks withdrawing from high-risk jurisdictions. For example, according to Committee on Payments and Market Infrastructures data, the Caribbean has seen the number of correspondent banking relationships more than halve between 2011 and 2022. Likewise, the number of banks providing US dollar clearing services to the Americas has declined from 100 to 50 over the same period.

Intense scrutiny

Regulators are actively working to stem de-risking to promote financial inclusion and financial stability. For example, the European Banking Authority (EBA) released its report on tackling unwarranted de-risking in January 2022; and in April 2023,

the US Department of the Treasury launched its de-risking strategy.

Sullivan believes that the first step in addressing de-risking is for regulators to implement risk-based supervision, as recommended by the Financial Action Task Force (FATF), rather than taking a rules-based approach. Both the EBA and US Treasury have embraced a risk-based approach in their recent guidelines, but other jurisdictions are lagging.

A risk-based approach allows banks to have flexibility when assessing and managing risk, explains Sullivan. "It's possible to have strong financial institutions that are present in a country with high inherent risk for money laundering, bribery, sanctions, etc," she says. "Banks need to perform assessments, understand the risk and control it adequately; taking more of a black-and-white approach to risk management is not helpful."

The true cost

Due to the increased cost associated with providing services in a heightened-risk environment, many banks have gone down the de-risking route. However, if banks are pulling back because they cannot effectively manage risk, then they are effectively shifting the



A black-and-white approach to risk management is not helpful

Patricia Sullivan, Global Head of Institutional Cash Management, Deutsche Bank

problem to another institution. Such a move can also compel individuals and businesses to use channels that are not as safe or secure, and much more expensive.

"What isn't included in the individual bank's financial equation is the socio-economic impact that de-risking has, the risk inherent in moving to another provider, and the stability and protection of the financial system, which is the regulators' ultimate aim," says Matthew Probershteyn, Head of ICM Non-Financial Risk and Controls, Deutsche Bank.

Probershteyn highlights the inverse correlation between de-risking and transparency in risk management, particularly in jurisdictions lacking the

infrastructure or resources to have good oversight and control.

"When a correspondent bank is providing products and services to a country, it is also promoting best practice in risk management and the regulatory landscape," he explains. "The unintended consequence of de-risking is that it will impact a country's ability to enable law enforcement, and, for example, to develop the anti-bribery or anti-corruption environment that would have been there if the bank was present and fighting that fight. This will impact generations to come, yet it remains unseen and unmeasured."

An ecosystem of risk management

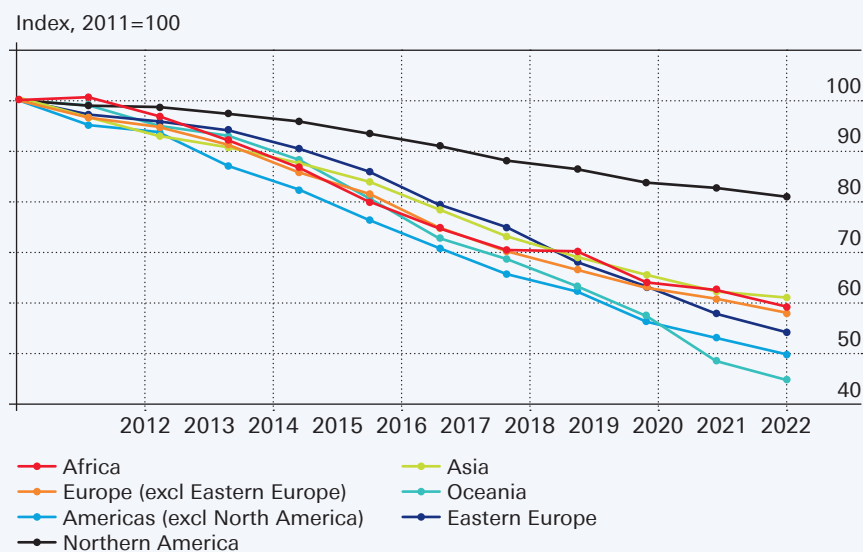
Therefore, partnering with a customer or country to ensure high standards is an important part of financial inclusion. And commercial banks such as Deutsche Bank have a critical role to play, according to Probershteyn: "We can provide our experience as to what good looks like and how to put in place the right guiderails, with the ultimate goal of providing access, equality and inclusion."

At a macro level, Deutsche Bank provides expert guidance to clients operating in countries where work is required to address the FATF recommendations. The bank now regularly hosts seminars relating to sanctions evasion risk for clients, with the most recent taking place in Spain and Italy. Additionally, the bank has created a framework to help financial institution clients in challenging markets, including:

- Educating clients in know-your-customer (KYC) and transaction-monitoring strategies to identify shell companies.
- Advising clients on the sanctions evasion risks presented by commodity traders and brokers.
- Sharing best practices on transaction monitoring, adverse media screening and filtering new technologies.
- Sharing the latest geopolitical trends and hotspots where enhanced due diligence may be required.
- Informing on new client risk rating methodology and risk assessment approaches that Deutsche Bank is deploying.

Joy Macknight is a freelance financial journalist and former editor at The Banker, part of the Financial Times group

Figure 1: Number of active USD correspondents by region (count of counterparties abroad)¹



¹Correspondents are counted multiple times across corridors, but not across message types and months

Source: Swift BI Watch and National Bank of Belgium

G20 Roadmap: moving from guidance to action

As expectations grow for faster and cheaper cross-border payments, banks and corporates have their work cut out to meet demand. Marc Recker, Global Head of Product, Institutional Cash Management, Deutsche Bank, looks at how the G20 Roadmap contributes to these goals – and what its shortcomings are



The cross-border payments space is at an inflection point, as changing client needs adjust priorities for the industry. At the front end, the driving force is remarkably simple: retail customers, consciously or not, are demanding more from the companies they transact with and from the institutions they bank with. This was first evident in the domestic payments space, where new, increasingly real-time-enabled business models, combined with a growing e-commerce market, necessitated the introduction of faster and more convenient payment methods.

A similar trend has extended to the cross-border payments space, with transparency, speed, security and lower costs the goals. Take a typical German consumer: when purchasing goods or paying for services in another European nation, they do not want to pay additional

fees or endure lengthy payment delays. Instead, they expect their cross-border experience to be in line with what they experience in their domestic transactions. For them, consistency is a no-brainer and is fast becoming a 'must-have'.

At the back end, meeting these needs presents challenges, including misaligned payment messaging standards and divergent regulations between jurisdictions. Add to this equation the absence of any silver bullet solution to address these challenges and you arrive at today's cross-border payment situation, where the question on everyone's lips is the same: where do we go from here?

The road to the G20 Roadmap

Getting a payment from A to B in a domestic setting is facilitated by the fact that the payment is, for the most part,

governed by the same regulations and requirements end to end. By comparison, cross-border payments must contend with complex jurisdictional regulations and differing compliance burdens. The goalposts change as the payment moves from country to country, adding unwanted complexity to the transaction. This is further compounded by fragmented standards and differing levels of data granularity, as well as diverse payment systems that lack technological alignment or standardised protocols.

In 2020, seeking to modernise the payments infrastructure by addressing these challenges, G20 members endorsed the Roadmap for Enhancing Cross-border Payments, which sets quantitative targets to lower costs and increase the speed, accessibility and transparency of international payments by the end of 2027.

Image: iStock

These goals have been organised under three priority themes: payment system interoperability and extension; legal, regulatory and supervisory frameworks; and data exchange and message standards (see Figure 1).

As banks look to navigate the various initiatives at play, the Roadmap is often viewed as a much-needed guiding light for the industry. Yet, while the Roadmap is a step in the right direction, there will be no 'big bang', transformative moment for the industry in 2027. Ultimately, what it has achieved so far is to organise a series of disparate cross-border payment initiatives under a distinct set of goals – making it, in theory, easier for the industry to sing from the same hymn sheet.

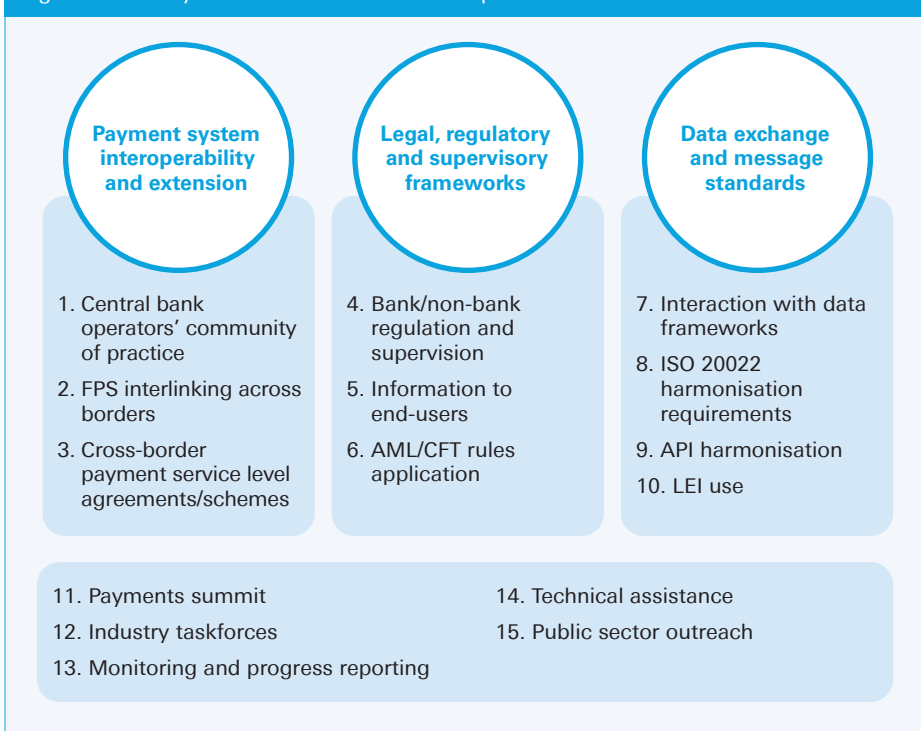
Under the hood

Under the umbrella of the Roadmap, there has already been major progress. The ISO 20022 migration is under way around the world. Introducing this common, interoperable standard for payment message exchange means that interoperability can be achieved regardless of jurisdiction. This will, in turn, help to lay the foundation for further efficiencies and improved client service.

In tandem, efforts are under way to create service level agreements that foster greater transparency in international payments. Two industry initiatives, led by Swift and supported by banks, are having a transformative effect in creating fast, predictable, cost-effective and secure cross-border payments; Swift GPI, which provides end-to-end tracking for high-value cross-border payments, and Swift Go, a comparable service focused on lower-value payments.

Efforts are also being made to interlink domestic payment systems to enable instant cross-border flows. So far, such schemes have found success in Singapore, India and other countries across South-East Asia, where connections have been established to solve specific cross-border instant payment use cases. Additional initiatives remain in development, such as the Immediate Cross-Border Payments pilot devised by EBA Clearing, The Clearing House and Swift, to interconnect systems in the US and Europe, as well as the European Payments Council's new One-Leg-Out Instant Credit Transfer, which aims to use the existing single euro payments area payment rails for international instant credit transfers.

Figure 1: Priority themes of the G20 roadmap



As the instant cross-border payment systems are explored and expanded, one criticism of the Roadmap is its lack of recommendations around the increased risk of fraud, and the associated potential for money laundering. If you are increasing the speed, these risk elements should be a focus – and this is an area that we, as an industry, will need to address.

A reality check

The goals of the Roadmap are not yet backed by regulatory or legal mandates.

“While the Roadmap is a step in the right direction, there will be no ‘big bang’, transformative moment for the industry in 2027

Marc Recker, Deutsche Bank

So, rather like the speed limits on certain parts of the German autobahn, adherence to the Roadmap is only advisory. Sceptics would suggest that this makes it toothless – and, though this is not an entirely fair assessment, the approach of the G20 Roadmap does raise several concerns.

Take the ISO 20022 migration as an example. Where central banks are mandating the use of ISO 20022, every single participant is working on the initiative. Where it is not mandated, we are finding that the opposite is often true, making progress much slower. The worry, therefore, is that without clear consequences resulting from not meeting the KPIs, and if local regulators and lawmakers do not incorporate the Roadmap's essentials, banks could deprioritise the goals in favour of more urgent activities.

This is where global transaction banks have an important role to play, both in driving progress and in bringing their FI and corporate clients along for the ride. It is our job to fill the lack of formal mandates with consistent and well-resourced market action. In this way, the Roadmap should form part of the action plan of every large transaction bank – and together, we can make its aim a reality.



Scientists working at Boehringer Ingelheim's headquarters, Ingelheim

Treasury forward

Boehringer Ingelheim has grown into Germany's biggest pharma company. *flow's* Desirée Buchholz reports on how its treasury function supports business expansion by taking a deep-dive into an innovative workflow automation project in Asia-Pacific

It's a bit tricky to find your way to the headquarters of Boehringer Ingelheim, located in the small German town of Ingelheim, around 50km west of Frankfurt. When entering the factory, you pass by excavators, trucks and temporary gravel roads. "Every other week, the traffic routing changes," explains Eric Humbert, Head of Corporate Cash Management at Boehringer Ingelheim, when welcoming visitors at the entrance gate.

These construction sites are proof points of the company's success: it is currently building a new chemical innovation plant which – starting in 2026 – will develop manufacturing processes for pharmaceutical ingredients and produce drugs for use in clinical trial phases. During the foundation stone ceremony for this €285m investment in May 2023, German Federal Chancellor Olaf Scholz praised the company's innovation centre as "excellent news" for Germany and

Europe and said it will "enhance their resilience by establishing local value chains for life-saving medications".

Indeed, with net sales of €25.6bn in 2023, Boehringer Ingelheim has grown into the country's biggest pharma company – an evolution that founder Albert Boehringer most likely wouldn't have dreamed of when he purchased a small chemical factory to produce tartaric acid for pharmacies in Ingelheim in 1885. Today, the company remains independent but now develops treatments for cancer, diabetes and heart, lung, skin and eye diseases, as well as mental disorders such as schizophrenia and Alzheimer's. One-hundred and forty years after its founding, Boehringer ranks among the 20 largest pharma providers globally, employing 53,500 people and serving patients in 130 countries worldwide.

And this journey is set to continue. To lay the foundation for future growth and take

Image: Boehringer Ingelheim

'Life forward' (to use the company's brand claim), Boehringer invested 25.1% of its net sales into Research & Development in 2023. By 2030, the company plans to launch 25 new treatments in its Human Pharma segment alone.

A transformative deal

While the company sticks to its roots, it has also undergone a transformation: in 2017, Boehringer acquired Merial, the animal health business of French pharma company Sanofi, and in exchange sold its consumer healthcare business to Sanofi – a business swap worth €23bn which catapulted Boehringer to be the world's

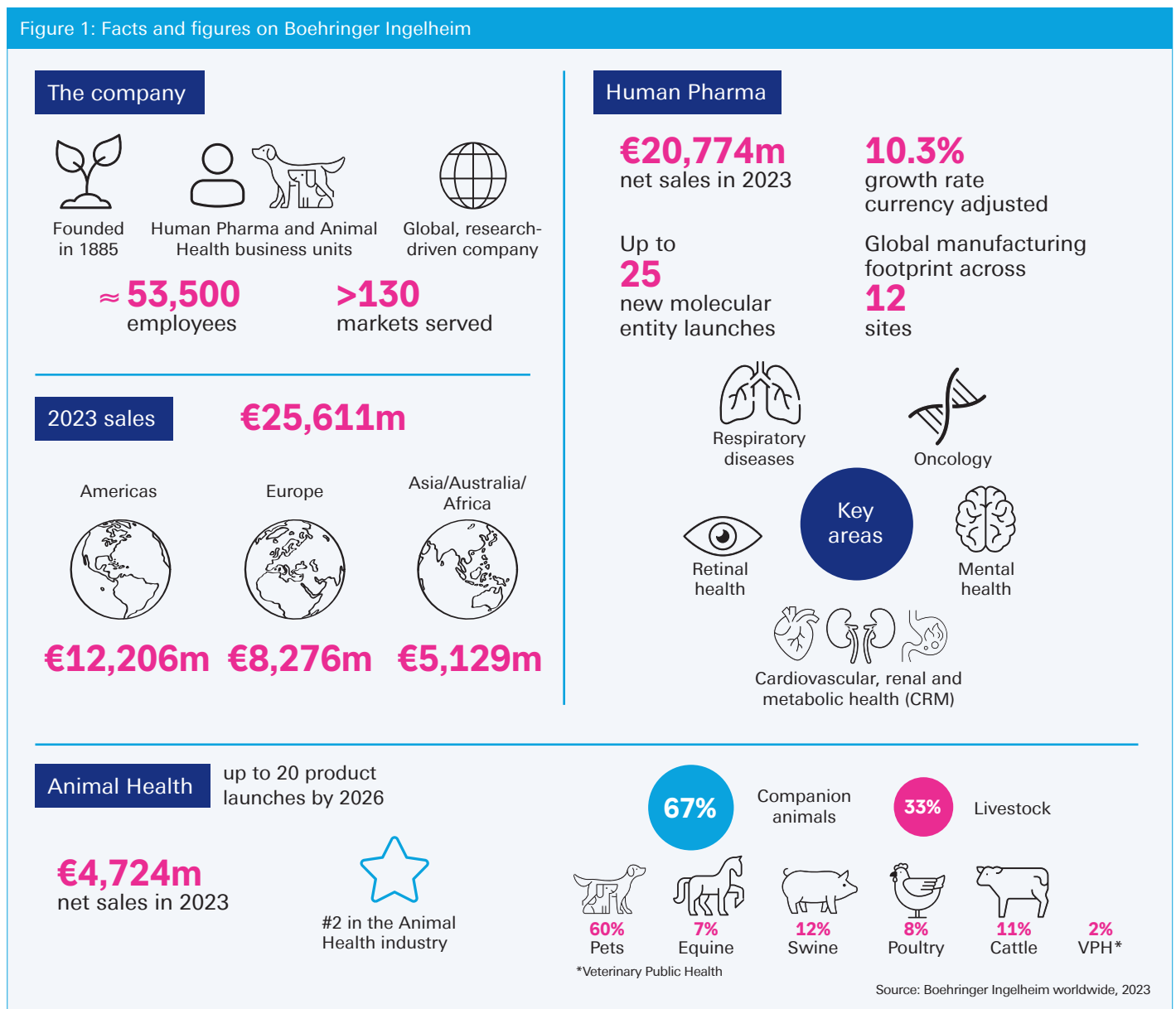
“
140 years after its founding, Boehringer ranks among the 20 largest pharma providers globally

second largest provider for animal health. Vaccines, parasiticides and therapeutics for pets and livestock now account for 20% of the company's revenue.

“We never had to onboard that many new entities at once,” recalls Humbert, now sitting in a conference room with his colleague Stefan Eckart, who is also responsible for Strategic Cash Management. “Given that Merial was fully integrated within Sanofi, it had no people, no processes and no systems in treasury.”

Following the “severe incision” of this M&A deal, Humbert and his colleagues decided to revamp the company's cash management setup to be able to

Figure 1: Facts and figures on Boehringer Ingelheim



absorb new acquisitions more quickly in the future – and to support the ambitious business growth plans. “Nothing would be more painful than losing business due to inefficient processes in cash management,” he adds.

Building a future-proof treasury

Therefore, in 2019, the team from Corporate Cash Management and Global Business Services (GBS) kicked off a cash management transformation project to enhance process efficiency, cut costs and lower risks. The project – which is planned to be completed by mid-2025 – consists of three elements:

1. Implementing a central entity to initiate and concentrate all financial flows.
2. Modernising the existing in-house bank by streamlining the cash pool and introducing an accounting, payment and collection factory to automate and centralise intercompany flows.
3. Harmonising the global payment IT landscape by implementing the payment platform of Treasury Intelligence Solutions (TIS).

To understand the challenges for Boehringer’s cash management, it is important to know that the production entities of the two divisions – Human Pharma and Animal Health – usually don’t sell drugs directly to customers, such as pharma wholesalers or veterinarians. Instead, they sell to the group’s local distribution entities who then trade with the customers. “This means that intercompany (IC) payments are extremely important for us as they represent almost the entire business volume,” explains Eckart.

In such highly regulated markets, these IC transactions required additional steps to normal processes in GBS with their regional shared service centres (SSCs). Under the new structure, the payment factory pays on behalf of most of the company’s international entities, which means that – once fully implemented – the central treasury team will have full control over the process and be independent of the bank account structure of the respective entities. “The transformation of the in-house banking coupled with the introduction of TIS and the implementation of the payment and collection factory now provides



We are constantly looking for opportunities to bring efficiency into our processes

Eric Humbert, Head of Corporate Cash Management, Boehringer Ingelheim

the basis for a future-proof treasury,” adds Humbert. Currently, 95% of global payments are initiated via TIS; only Japan and Indonesia still need to be onboarded.

Automating workflows in APAC

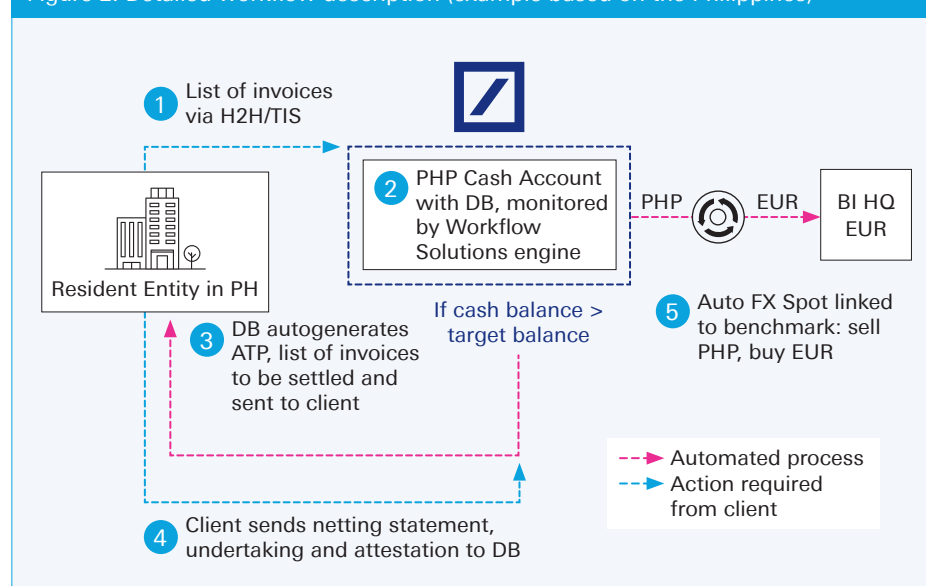
Yet there is still room for improvement when it comes to process efficiency – and again, this circles back to the Merial transaction in 2017. To quickly take over administrative tasks from Sanofi, it helped that Boehringer had already planned to establish an SSC in Manila, Philippines. The centre now handles processes for the HR, finance and treasury divisions in the Asia-Pacific (APAC) region and parts of the Americas. However, as many processes were implemented on an ‘as is’ basis, Humbert said the company is “constantly looking for new opportunities to bring efficiency into our processes”.

The pressure to do so is particularly high in regulated markets in APAC, where

capital controls, central bank approvals and tax considerations complicate cross-border intercompany payments and liquidity management. In the past, it took Boehringer several steps to get an IC payment from countries with non-convertible currencies to its headquarters in Germany, including collecting, aligning and submitting supporting paper-based documents to the bank (e.g. invoices). “This is why we were looking for an end-to-end automated solution which frees up time for our local treasury team to work on more value-adding projects,” Humbert says.

This is where Deutsche Bank came into play and suggested an innovative workflow solution which allows for automated intercompany payments based on target balance and automated FX conversions (see Figure 2). “Through our decades-long relationship with Boehringer we have developed a good understanding of the company structure and processes,” explains Uta Dewitz, Head of Corporate Coverage Central Germany at Deutsche Bank. “Following several discussions and in-person meetings in Ingelheim, where the Boehringer team explained its pain points to us in whiteboard sessions, we came up with a solution that is now tailored to the company’s needs.” She adds, “This also required close collaboration between local and regional Boehringer and Deutsche Bank teams. Generally, our goal is to support our clients’ financial security and lasting success at home and abroad.”

Figure 2: Detailed workflow description (example based on the Philippines)



Under the new approach, Boehringer only needs to send a file with the details of invoices to be settled to Deutsche Bank, which will then take care of all the remaining steps in the background. Today, Boehringer conducts cross-border intercompany payments only once a month because of the regulation in these markets, particularly in adhering to all regulatory requirements. Going forward, this solution allows for more frequent settlements to optimise group-wide liquidity management.

“The solution reduced the process for IC cross-border payments to just one step and replaces a paper-based process with a digital solution,” explains Eckart. To enable automation, Boehringer negotiated fixed margins on third-party benchmark rates used for the FX deals. “We decided that the efficiency we gain by automating the process trumps the best execution policy for non-convertible currencies – which would have required us to bid out the hedges,” he continues.

Moreover, the team also assigned certain bank accounts to which the money can be transferred – thereby removing the step of payments approval and reducing the risk of payment diversion due to human error.

Going forward, Boehringer plans to do this via the TIS platform to further increase security. This goes hand-in-hand with the treasury team switching off local bank portals and handling all bank communication out of TIS via a central connection, i.e. the Electronic Banking Internet Communication Standard (EBICS), Host-to-Host or – if neither of these two is available – via Swift.

“Deutsche Bank has been a trusted partner for us for more than 70 years – supporting us as a core bank in more than 20 countries across Europe and Asia-Pacific,” says Eric Humbert, Head of Corporate Cash Management at Boehringer Ingelheim. “The provision of innovative and intelligent solutions is a key differentiator when we choose our banking partners – and Deutsche Bank really delivered a state-of-the-art solution that helps us to better manage payments in APAC.”

“Solutions such as the one we have delivered for Boehringer are designed for scale, enabling clients to replicate across their country footprint, supporting rapid digital transformation of treasury processes with zero additional client tech spend,” adds David Cooper, Head of Workflow Solutions, APAC at Deutsche Bank.

Boehringer Ingelheim headquarters, Ingelheim



Looking ahead

As of August 2024, when this magazine went to press, the solution was already rolled out in South Korea and the Philippines – with Vietnam, Malaysia, Indonesia and Taiwan set to follow within the next couple of months. “We started in countries with non-convertible currencies, as those are most complicated, but we are keen to broaden the perspective to other countries in APAC, for example China, or South America as well to reap further efficiency gains,” says Humbert.

Adding to the benefits mentioned above – higher efficiency, better security and more control by central treasury and GBS – another advantage was that the solution did not require any technical implementation work by the Boehringer treasury team. “Apart from explaining our existing processes and negotiating the contract, there were no tasks to be done on our side,” says Humbert. “On the contrary, the time freed up by

the automation allows our colleagues to spend more time on other treasury optimisation projects.”

And Boehringer’s treasury roadmap is packed. Apart from completing the roll-out of the workflow solution in several APAC countries, the treasury team also needs to complete the roll-out of its new in-house bank – including the payment factory – for all national entities. Moreover, it plans to reorganise its cash management in China and further leverage the benefits of the TIS platform, by using fraud prevention tools (for master data changes and transactional checks), an advanced and deeper sanction screening and the roll-out of an automated bank fee analyser and eBAM (electronic bank account management) functions.

Strategy for growth

In the longer term – and on a more strategic note – the Boehringer treasury is also working on projects which will directly support future business growth. Among others, the team is looking into supplier and client requirements: “As we are growing faster than the market, we need to support our suppliers and customers. Therefore supplier financing and e-commerce may be a future topic,” explains Humbert.

As Boehringer is moving ‘Life forward’ through medical innovation, treasury needs to embrace technical innovation to enable business growth. Treasury forward – that’s what Humbert, Eckart and their colleagues from GBS are working on, together with strong partners like Deutsche Bank.

“Deutsche Bank really delivered a state-of-the-art solution that helps us to better manage payments in APAC”

Eric Humbert, Head of Corporate Cash Management

How treasury can support B2B marketplaces



B2B marketplace sales are growing quickly, and so is the number of companies implementing platform-based business models. How can treasury support marketplaces and ensure efficient cash management? A white paper by TMI and Deutsche Bank provides answers

As more people purchase goods and services online, the business-to-business (B2B) sector is increasingly adopting digital sales channels. It is no longer only consumers, but also B2B buyers, who want to buy anywhere, any time. It is no surprise, therefore, that digital marketplaces, which have altered purchasing behaviour in the business-to-consumer (B2C) space – see Amazon, Alibaba or Tencent – are also advancing in the B2B arena. In the US, more than one in four B2B buyers do at least half of their purchasing on these marketplaces, according to a survey by Digital Commerce 360 and Forrester Research. The survey estimates that US B2B marketplace sales in 2023 more than doubled to US\$260bn, from US\$112bn in 2022.

While the US and China lead the pack, the growth of digital B2B marketplaces is a global trend. In India, for example, B2B marketplaces are expected to become a US\$200bn market by 2030, and data provider Dealroom.co counts more than 250 B2B marketplaces in Europe – with the figure still growing.

Benefits of a marketplace

Central to digital marketplaces is utilising advanced technologies and data-driven algorithms to match supply with demand efficiently. Marketplaces typically offer a wide range of products and services, prioritising user experience, personalisation and convenience – making them the go-to destination for both buyers and sellers (see Figure 1).

“While buyers enjoy greater choice, faster delivery and cost reductions, sellers gain access to a

larger client base with reduced risk,” says Matthaeus Sielecki, Head of Embedded Finance Solutions, Cash Management at Deutsche Bank. He adds that a marketplace helps participating operators increase their share of wallet through third-party reselling commissions. “Additionally, it provides them with deeper market insights, allowing them to monitor platform usage, encompassing search



While buyers enjoy greater choice, faster delivery and cost reductions, sellers gain access to a larger client base with reduced risk

Matthaeus Sielecki, Head of Embedded Finance Solutions, Deutsche Bank

and transaction data. This valuable data can be monetised or leveraged to enhance the platform, creating a more compelling value proposition for both buyers and sellers.”

Sielecki differentiates between four different market types, which overlap and evolve:

- **Digital marketplaces.** Sophisticated online ecosystems that serve as intermediaries connecting multiple stakeholders in a digital economy. These platforms facilitate the exchange of goods, services or information

among a diverse array of participants, including businesses and consumers.

- **Platform business models.** While digital marketplaces primarily focus on facilitating transactions, platform business models encompass a broader spectrum of activities. Airbnb exemplifies this by connecting individual hosts (B2C) with travellers and extending its offering to Airbnb for Work, facilitating bookings for business travellers (B2B).

- **Subscription-based business models.**

These models involve customers paying periodic fees to access a service or product. For example, a truck manufacturer which leases vehicles on an as-required basis to fleet managers has implemented a marketplace which also offers services including a maintenance and repair package, roadside recovery and navigation aids.

- **Direct-to-customer models.** These models involve brands selling their products or services directly to consumers, bypassing traditional intermediaries. For example, Henkel, a German multinational chemical and consumer goods company, launched its own e-commerce platform – Salonory – which offers salon owners the opportunity to purchase over 1,600 products in a one-stop-shop solution.

Treasury’s role is pivotal in establishing the financial and operational framework for this innovative business model, particularly given the high demand for effective cash management in these fast-paced ecosystems. In response, the white paper *Digital Marketplaces – Treasury’s Role in Creating and Supporting a New Business Model*,

jointly authored by TMI and Deutsche Bank, outlines the steps that corporate treasurers should follow to initiate and sustain digital marketplaces.

The report opens by examining treasury's role in planning once a company has decided to establish a marketplace. Structured according to four different stages – discovery, preparation, implementation and expansion – the paper then describes how treasury can contribute to a marketplace's success.

A critical aspect is understanding the technical and regulatory requirements in target countries, as there are regional variations that shape payment processing, know-your-customer (KYC), anti-money laundering (AML) and data protection regulations, the authors say. This impacts the initial onboarding of merchants to the platform, as well as payment processes once the platform is live.

Despite the significance of these considerations, "treasury is often overlooked in the early stages of marketplace development, as the business prioritises speed to market over initial efficiency," Sielecki observes. This exclusion can result in escalated payment processing costs, high FX fees and redundant internal efforts when a marketplace starts to scale up.

This challenge becomes particularly evident when a multitude of smaller, local payment service providers (PSPs) are employed to establish a presence across various countries, instead of implementing an overarching, optimised cash management system. To prevent frequent restructuring, and to strike a balance between the need for rapid

market entry and the mitigation of financial risks, treasury involvement should begin from the very inception of the marketplace project.

Pitfalls to avoid

The white paper also outlines key considerations from the treasury perspective – in particular when it comes to managing counterparty, credit, liquidity and FX risks. "Establishing a marketplace will necessitate treasury to reassess the business assumptions for monetisation and the financial risk model," Sielecki explains. If, for example, the business model commits to same-day merchant payouts but internal systems cannot match and post related receivables at that pace, credit risk arises.

The paper also stresses the importance of strong connectivity between the different systems – the front end of a marketplace, which is typically designed by the business to match its preferred aesthetics, the enterprise resource planning (ERP) system and the treasury management system (TMS).

"Treasury can contribute to the connectivity discussion in two ways," the report states. "First, it may suggest that a bank or PSP directly connects to the e-commerce platform through an open Application Programming Interface (API). (...) Second, treasury may recommend implementing a central payments gateway," which serves as a technical middleware hub and can aggregate data from various payment methods. This approach usually makes most sense when dealing with multiple jurisdictions.

Finally, the paper examines how banks can assist treasury teams in their

Download the full white paper



Use your smartphone to scan the QR code below and download from treasury-management.com



marketplace journeys. This includes providing bread-and-butter financial services, like payments, reconciliation, clearing and FX for the marketplace business. At the same time, banks can also help corporates to boost marketplace sales by offering a range of financing options, simplifying partner onboarding procedures and providing support for broader geographic expansion.

In addition, when a bank possesses insights into the flow of funds, the payment channels employed in these flows and how FX impacts them, it can collaborate with treasury to bundle services that mutually benefit both parties. "Banks with extensive global reach can offer valuable guidance to treasurers navigating complex regulatory demands in diverse countries," says Sielecki. "They can proficiently handle payment integrations and settlement orchestration, all the while providing robust financial structures."

Figure 1: Benefits of implementing a marketplace

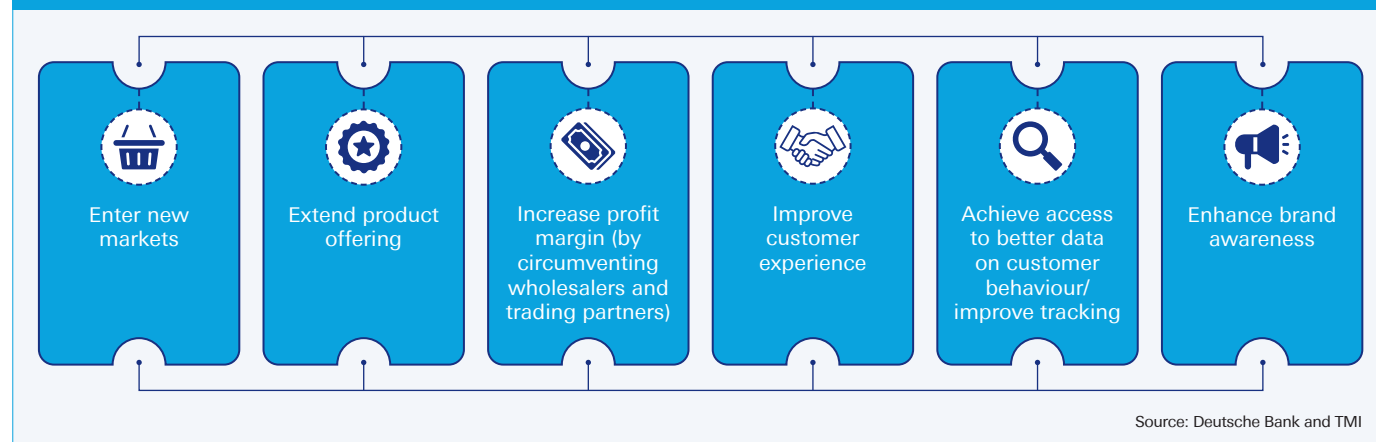




Image: HELM

Bridging growth into APAC

Asia-Pacific (APAC) is a top investment destination for European companies. *flow's* Desirée Buchholz reports on the ambitions of Germany's HELM and REHAU in this region – and how Deutsche Bank's Global Hausbank strategy is supporting the treasury departments of these two 'Mittelstand' firms

Hamburg-based HELM is one of the world's largest chemicals marketing companies. Founded in the early 20th century, the family-owned business provides chemical feedstocks and derivatives, crop protection and fertilisers and pharmaceuticals, as well as energy materials such as lithium products in more than 30 countries globally – with Europe as the company's centrepiece: in

2022, HELM generated half of its €8bn global revenue in Europe, while Asia accounted for no more than 13%.

When it comes to future growth, however, APAC is a core investment destination for the company. HELM plans to invest €500m globally from 2020 to 2026 – a large proportion of which is dedicated to expansion in the APAC region. "We have a clear strategy to grow

our turnover and the share of business in APAC, to benefit from the great potential the region offers," says Frank Clausen, Director Corporate Treasury, HELM AG. Two deals underpin this strategy:

- In May 2022, the company acquired 50% of Malaysian/Singaporean SPCI Group. The partnership includes the manufacturing and distribution of

chemicals such as sulphur, sulphuric acid, aluminium sulphate, sodium silicate and soda ash. “SPCI will contribute its extensive knowledge in the production of inorganic chemicals, while HELM will provide its supply chain know-how and commercial expertise through its global market presence,” HELM said in a press release at the time.

- Just under a year later, HELM took over the majority shareholding in agri-tech start-up Plantix, which has developed a mobile crop advisory app for disease recognition used by farmers and gardeners. The joint German-Indian start-up connects small-scale farmers and 60,000 agricultural suppliers in India via one digital ecosystem.

APAC's opportunities

HELM is just one of many European companies aiming to expand its operations in APAC. The 10 member countries of the Association of South-East Asian Nations (ASEAN) are particularly attractive for European firms, given the region's relatively low wage costs, favourable demographics and proximity to industrial clients. With an aggregate economic size of US\$2.3trn and an average GDP growth rate of 6% p.a. over the past 15 years, ASEAN members by far outpace GDP growth in developed countries.

India's economy is predicted to double in size by the end of the decade, which would make the country a US\$7trn economic powerhouse by 2030, and analysis by Deutsche Bank Research suggests China's economy is set for annual GDP growth in the 4.5–5% range.

To take advantage of these opportunities, European companies investing in Asia need funding, as well as advisory and product capabilities, to deal with local regulations around payments, liquidity management, financing and treasury solutions, explains Divya Soni, Head of Relationship & Transaction Management APAC, Deutsche Bank Corporate Bank.

“Supporting our clients in their home market and abroad has been the *raison d'être* of our business ever since Deutsche Bank opened its first international branches in Shanghai and Yokohama in 1872,” she says. “As part of our Global Hausbank strategy, we continue to support our multinational clients in their growth ambitions in this region, with a particular focus on German ‘Mittelstand’ clients in APAC.”



We continue to invest in onshore teams in key international corridors – in particular in India, China, ASEAN and Japan

Ole Matthiessen, Head of Corporate Bank APAC and Global Head of Cash Management, Deutsche Bank

There is no universally applicable definition of ‘Mittelstand’. Broadly, it encompasses small and medium-sized enterprises, often family-owned, which are deeply rooted in Germany and provide specialist products or services globally.

“At Deutsche Bank, we partner with our clients to deliver holistic treasury solutions across the full breadth of our footprint that solve the core needs of the treasurer both today and tomorrow. Through this, we earn the privilege of being the Global Hausbank for our clients as they navigate the dynamic and evolving international landscape,” says Ole Matthiessen, Head of Corporate Bank APAC and

Global Head of Cash Management, Deutsche Bank.

“As the leading bank in Germany, with strong European roots and a global network, supporting our German ‘Mittelstand’ to grow their business in APAC couldn’t be more aligned to the principles upon which we were founded – an engine for international trade and connectivity between Germany and the rest of the world,” he says.

“With this, we continue to invest in onshore teams in key international corridors – particularly in India, China, ASEAN and Japan.”

Managing risks

How does this benefit companies in practice? To answer this question, one has to understand the challenges they face. Looking at the example of chemical trader HELM, the company's business is exposed to price fluctuations for these chemicals. Hence, working capital needs to change quickly. “As such, we need a bank that understands our business model and has the flexibility to quickly re-allocate credit lines across different countries according to our working capital requirements,” Clausen explains.

HELM India, for example, secured a licence to store methanol which will allow the company to add a new product to its local operations, explains Richard D'souza, Head of Finance, HELM India. “Yet, in order to do so, we need standby letters of credit (SBLCs), and thus limits, to be allocated to us.”

Due to local payment terms, the company has on average 10 to 20 days of working capital exposure in India which need to be covered by SBLCs. These come from Deutsche Bank in coordination with the central treasury in Hamburg.

“Finance is an enabler for the business and Deutsche Bank supports us on fulfilling this promise,” says D'souza.

As a short-term funding, FX and payments provider, Deutsche Bank has been HELM's Global Hausbank for more than 50 years.

“For us, the concept of ‘Global Hausbank’ means that we have a partner in Deutsche Bank that has a truly global footprint and supports us with the full range of services in our headquarters in Hamburg, as well as in the regions,” Clausen explains. “We have a single point of entry with our global relationship manager, who coordinates issues to be discussed with the local experts.”

How the treasurers of REHAU and HELM define the concept of ‘Global Hausbank’

- Global footprint with a full range of services in every region
- Deep knowledge of local requirements impacting funding, FX, cash management and payments
- Single point of entry into the bank
- Speed and flexibility in decision-making
- Supporting standardisation, centralisation and automation of treasury processes

Umbrella facility

While HELM has worked with Deutsche Bank for more than 50 years, REHAU Group – a family-owned business based in the Northern Bavarian town of Rehau – chose to partner with Deutsche Bank in 2008, when it opened its branch in Singapore. However, REHAU has been active in APAC for more than half a century, starting with a facility in Thailand in 1972.

The company manufactures polymer-based solutions for the automotive, construction, furniture, medical and industrial sectors.

Of its turnover of more than €4bn in 2022, only about 5% originated from Asia, but REHAU now plans to grow substantially in the region.

The company has already invested a sum in the double-digit million euros in China and now plans to expand its operations in Thailand, Indonesia and India. “As we continue to onboard new

“

For us, the concept of ‘Global Hausbank’ means that we have a partner in Deutsche Bank that has a truly global footprint

Frank Clausen, Director Corporate Treasury,
HELM AG

countries, we need to deal with new issues every year,” says Antonio Di Leonardo, Head of Group Treasury & Risk at REHAU.

“This is why we need a reliable bank partner with a well-established presence in Asia that can help us fulfil local requirements to make payments, manage cash efficiently and find the

best way to fund local operations. This is what Deutsche Bank delivers.”

In Indonesia, for example, REHAU originally used an intercompany loan to finance its local operations. But this set-up proved inefficient due to the local tax regime’s impact on applicable internal interest rates. Thus, the company decided to include Indonesia in its umbrella credit facility with Deutsche Bank, replacing the intercompany loan.

In this structure, the German parent company provides a corporate guarantee for liabilities of its subsidiaries covered by the umbrella credit facility. This allows the bank to give a local loan to the subsidiary. The umbrella facility not only provides the central treasury with full control over the credit allocation, but also leaves enough flexibility for incorporating local specifications, while absorbing part of the country risk, “which is quite important in Asia as well, given the current geopolitical tensions,” Di Leonardo concludes.



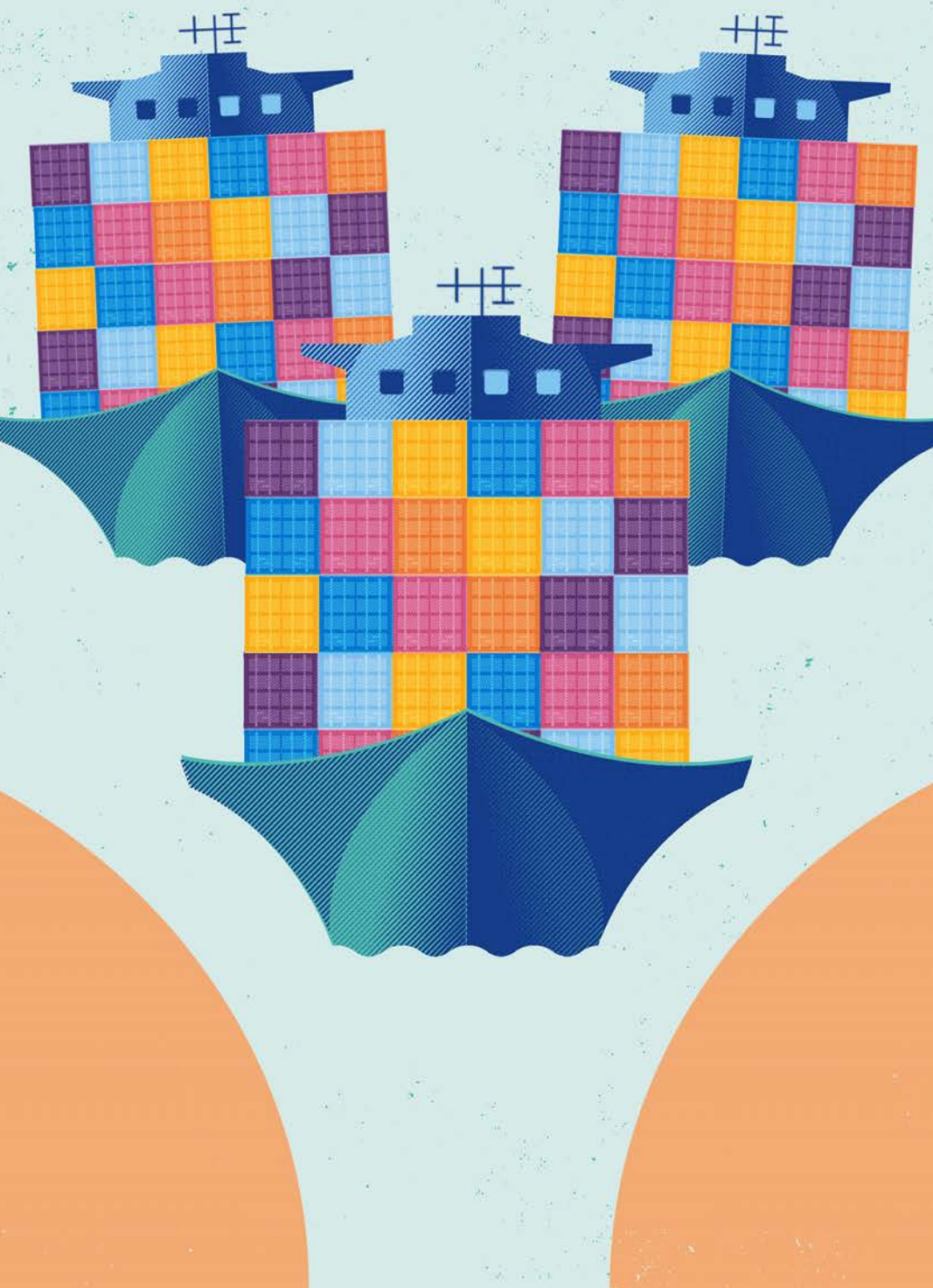
€4bn

REHAU's turnover in 2022 – only 5% of which originated from Asia

REHAU's
facility in China

Trade Finance and Lending

A review of trade choke points, transition metals and mining, trade finance and the post-hydrocarbon economy



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Mining tomorrow's energy infrastructure

The energy transition is suffering from a lack of investment. While an increase from US\$1trn to US\$1.8trn is an improvement, an orderly transition is going to cost US\$4trn a year. With insights from commodities analysts Wood Mackenzie, *flow's* Clarissa Dann explores this collective responsibility and what it means for the metals and mining industry

When the G7 Leaders meeting in Hiroshima (May 2023) invited the International Energy Agency (IEA) "to make recommendations... on options for how to diversify the supplies of energy and critical minerals as well as clean energy supplies," it defined the energy policy trilemma of "meeting sustainability, security and competitive goals".

In other words, how can the world reach net-zero emissions before 2050 to meet the goals of the Paris Agreement, while ensuring ongoing energy security – something that is complicated by geopolitical tensions such as the Russia/Ukraine crisis and the current instability in the Middle East?

The answer is investment – and a lot more of it. "The need for investment is unquestionable, the challenge is convincing stakeholders to deploy capital and time is short," said Julian Kettle, Senior Vice President and Vice Chair, Wood Mackenzie at a Deutsche Bank Natural Resources Finance Investor Day in February 2024 (see Figure 1). "And risk-adjusted internal rates of return (IRR) and net present values (NPV) are challenging." However, original equipment manufacturers (OEMs), sovereign wealth funds, private equity funds and government policy could be part of the solution, he added.

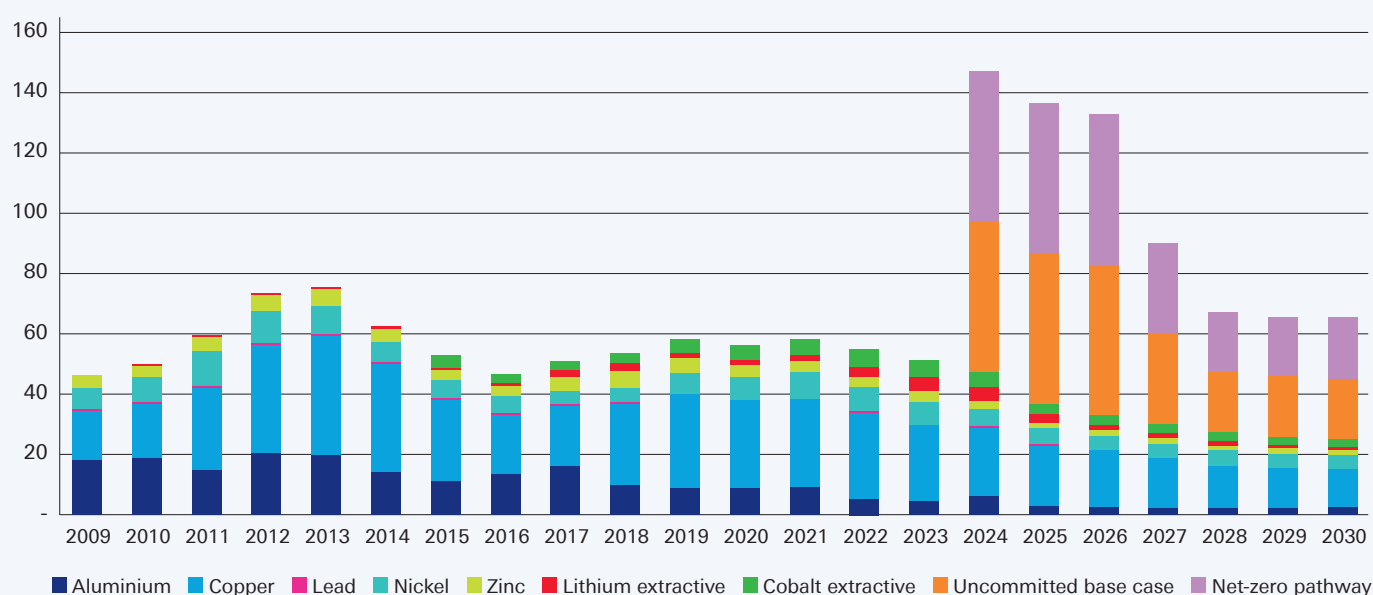
Two months later, on Trade Finance TV, he underlined that, for metals and mining

60-second takeaway

The transition to net-zero energy requires more investment and supply security for key raw materials

- Current level of investment = 2.5°C warming by 2050 (Wood Mackenzie)
- Oil and gas will continue to provide affordable energy throughout the transition period
- Concentration of supply creates potential issues in an unsettled world

Figure 1: Global mine, smelter and refinery investment capex (US\$bn in nominal terms)



Source: Wood Mackenzie



Image: iStock

corporates, there is simply not enough free cash flow to distribute dividends, decarbonise themselves and deliver growth.

Yann Ropers, Head of Natural Resources Finance at Deutsche Bank, sees metals and minerals investment as a collective responsibility where banks and financial institutions can help, despite the complexity of financing metals, and says that those markets are more volatile than those of oil and gas. "Banks need to form an appetite for the industry," he said. And this can mean taking a view on what prices will do in 15 years' time.

Three pathways

In their 2023 *Energy Transition Outlook* (see Figure 2), Wood Mackenzie sets out what would need to happen to achieve net zero by 2050 (in line with the 2015 Paris Agreement). The most likely outcome, the report notes, given the current rate of investment and technology and policy advances, is "consistent with a 2.5 degrees global warming by 2050". Key drivers of what will determine the scenarios are:

- Renewables
- Electrification
- Policy

"The energy transition is, and will continue to be, metals intensive – metals and mining is a key strategic growth driver over the next two decades," explains Deutsche Bank's Ropers. For this reason, he sees constraining factors, including the availability of minerals and metals to support green energy decarbonisation investments (which include increased electrification), as obstacles in the pathway to net zero.

Somewhat controversially, there is no getting away from the fact that a successful transition does mean ongoing investment in oil and gas so that supplies of affordable energy are not interrupted along the way. "Much more investment and accelerated project cycles in critical minerals/metals are primordial to support the decarbonisation of the global economy. The Wood Mackenzie report indicates that oil and gas will still have to play a role in the energy transition," says Ropers.

The Wood Mackenzie estimate of total final energy consumption demonstrates how the share of electricity and low-carbon hydrogen in total final consumptions "rises to 34% in the base case and 61% in our net-zero scenario by 2050" (see Figure 3).

In its response to G7 Leaders in December 2023, the IEA applauded the

Figure 2: Wood Mackenzie 2023 Energy Transition Outlook

Base case 2.5-degree scenario



- Wood Mackenzie's base case view across all commodity and technology business units – our central, most likely outcome
- Our base case incorporates the evolution of current policies and technology advances
- Electricity share of final demand rises from 20% to 22% by 2030
- Oil demand peaks at 108mb/d in 2032 and falls to 92mb/d in 2050
- US\$1.9trn annual average investment required
- Our base case is broadly consistent with 2.5°C global warming view by 2050

Country pledges 2-degree scenario



- Wood Mackenzie's scenario on how country pledges may be implemented in the future. The 2°C trajectory aligns with the upper limit from the Paris Agreement
- The rapid decarbonisation of power and electrification across multiple sectors drives emissions reduction in the scenario
- Electricity share of final demand rises to 30% by 2050
- Oil demand falls to 50mb/d in 2050
- US\$2.2trn annual average investment required
- Developed countries reach net zero by 2050; global net zero by 2070

Net zero 2050 1.5-degree scenario



- Wood Mackenzie's scenario on how a 1.5°C world may play out over the next 30 years. Carbon emissions align with the most ambitious goal of the 2015 Paris Agreement
- Immediate peak energy, low-carbon hydrogen and carbon removal technologies play a major role, while consumer behaviour must change radically
- Electricity share of final demand rises to 50% in 2050
- Oil demand falls to 30mb/d by 2050
- US\$2.7trn annual average investment required
- Global net-zero emissions arrive by 2050

2023 Energy Transition Outlook (Wood Mackenzie)

rise in clean energy investment to US\$1.8trn from US\$1trn five years earlier. But, it adds, “Today’s clean energy investments remain well short of the amounts needed to align with the net-zero emissions by 2050 pathway, which requires spending of well over US\$4trn annually by 2030.” It also expresses concern that “many clean energy supply chains exhibit a high degree of geographical concentration, both for the mining and processing of critical minerals and ultimately in the manufacturing of clean technologies, many of which rely on critical minerals.”

Given that the EU is a net importer of oil, gas and critical minerals, the bloc remains exposed to market volatility and high energy prices – impacting competitiveness. The other issue is the energy/electrification needed in the first place to extract and process metals as well as recycling them – at present, renewables infrastructure is insufficient to meet total primary energy demand.

China’s investments in clean energy supply chains have helped bring down costs around the world for key technologies, explained the IEA in its *Energy Technology Perspectives* report. However, the issue surrounding geographical concentration in global

“
The need for investment is unquestionable, the challenge is convincing stakeholders to deploy capital

Julian Kettle, Senior Vice President
and Vice Chair, Wood Mackenzie

supply chains, it adds, “creates potential challenges that governments need to address”. In short, “for mass-manufactured technologies like wind, batteries, electrolyzers, solar panels and heat pumps, the three largest producer countries account for at least 70% of manufacturing capacity for each technology – with China dominant in all of them.”

The specific dominance of China in electric vehicle (EV) inputs was highlighted in March 2024 by science journal *Nature*. The article, ‘Electric vehicle battery chemistry affects supply chain disruption vulnerabilities’, explains the three segments of the EV battery supply chain:

- Upstream (mining and extraction of raw materials).
- Midstream (processing of raw materials into battery-grade components).
- Downstream (cell and pack manufacturing, as well as end-of-life recycling and reuse).

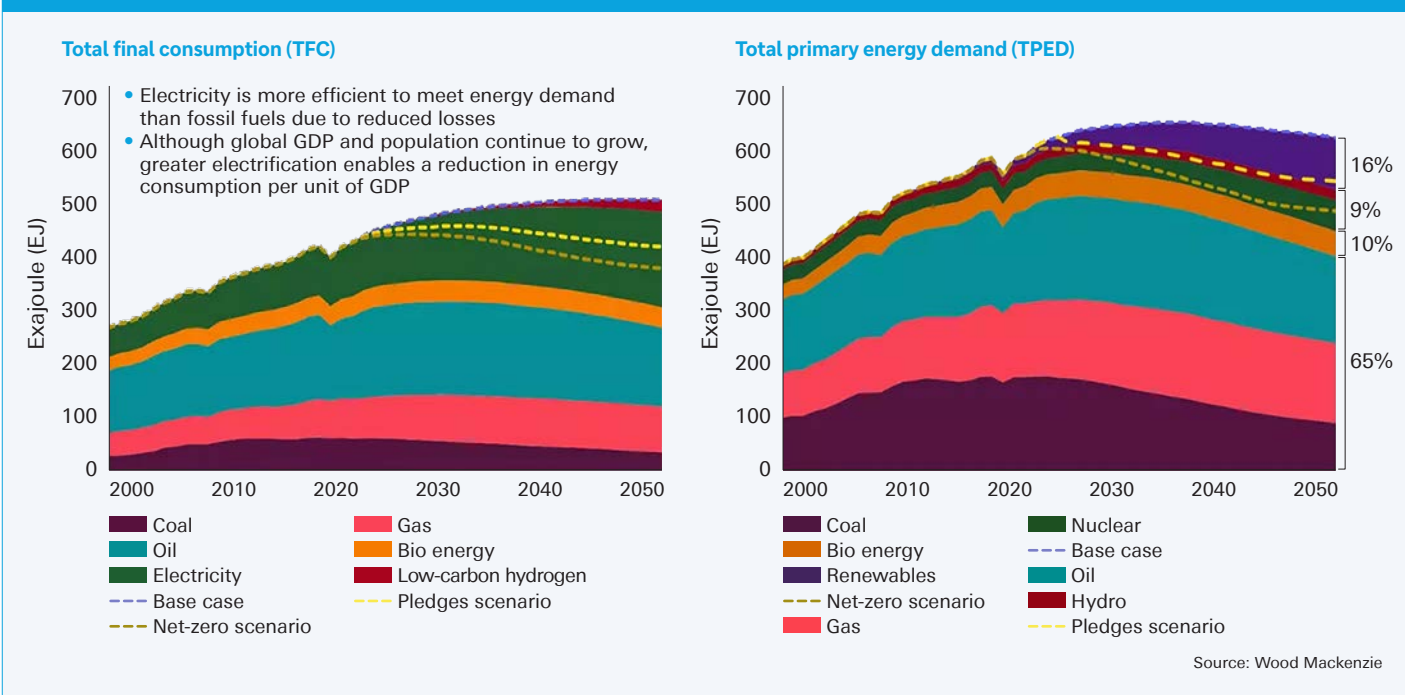
“While upstream mining is geographically distributed by material, China dominates every part of the midstream and downstream supply chains of all materials, from material processing and refining to electric vehicle production,” note authors Cheng, Fuchs, Karplus and Michalek.

Wood Mackenzie’s Kettle believes that China does not care which part of the value chain generates the returns “as long as the total returns are there”. In the West, “We look at each individual part of the value chain. If we are going to wean ourselves off China, there are higher capital costs and higher prices – so the returns might not be there at first.” To summarise, says Kettle, “We are going to have to do more risky things to deliver the transition.”

Ensuring supplies of primary metals

The ongoing power generation mix, energy storage deployment plans together with the impact of EV sales is “a massive

Figure 3: Energy consumption and demand



draw on mine supply,” according to Wood Mackenzie. Current technologies’ intensive use of metals for low-carbon power and transportation “massively increase our exposure to metals and now with an increasing focus on sustainability,” explains Kettle.

Take the move to EVs – strong adoption incentives from governments such as tax cuts and subsidies in the EU, the US and China are driving up the EV proportion of new vehicle sales (see Figure 4).

Having hit 14 million in 2023, EV sales could reach around 17 million in 2024, according to the IEA report *Global EV Outlook 2024*, accounting for more than one in five cars sold worldwide. Electric cars continue to make progress towards becoming a mass-market product in more countries. Tight margins, volatile battery metal prices, high inflation and the phase-out of purchase incentives in some countries, have sparked concerns about the industry’s pace of growth, notes the report. It adds, “The pace at which electric car sales pick up in emerging and developing economies outside China will determine their global success.” The vast majority of electric car sales in 2023 were in China (60%), Europe (25%) and the US (10%). By comparison, these regions accounted for around 65% of total car sales worldwide, showing that sales of electric models remain more geographically concentrated than those of conventional ones.

Given that China dominates most of the EV supply chain, with the accompanying cost advantages, this geographical distribution is hardly a surprise.

This intensifies demand for critical metals, with aluminium, copper and zinc leading the pack for clean energy and copper and aluminium in battery EVs.

Figure 4: EV share of new vehicle sales

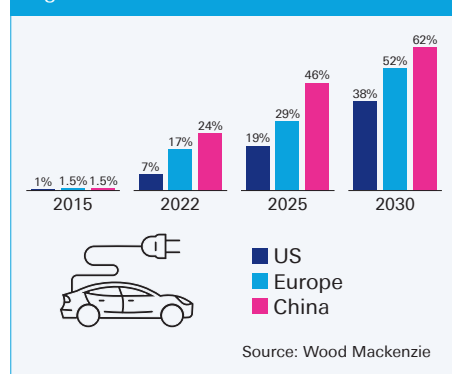


Figure 5: Global aluminium production slowing after a China-led rebound earlier in 2023



“The energy transition is, and will continue to be, metals intensive

Yann Ropers, Head of Natural Resources
Finance at Deutsche Bank

During 2023, Deutsche Bank Research reported, “China copper demand growth was strong (>5%)... driven by EVs, property completions and grid/renewables. For 2024, we forecast growth of 2–3%, although a sharper-than-expected slowdown in completions is a potential downside risk.” They add that there was stronger-than-expected demand for aluminium in China, with supply disruptions having tightened the market towards the end of 2023 (see Figure 5).

There is a real risk that supply shortages of primary metals needed for clean energy technology and transportation could hold back even the ‘base case’ energy transition scenario – i.e. consistent with 2.5°C global warming enabled by steady advancement of current and nascent technologies, reflects Kettle. The other complication is that metals development lead times are long, with raw materials production of, say, copper typically taking up to 12 years from feasibility through to ramp-up.

The most accessible rare earth metals are in geopolitical choke points and situated within the boundaries of non-US allies. China dominates the production of rare earths, producing 72% of the world’s supply in 2023. “Decarbonisation targets drive long-term structural rare earth demand. The EU may need 700–2,600% more neodymium, dysprosium and praseodymium by 2050 to reach climate neutrality,” says Deutsche Bank Research Strategist Marion Laboure. She adds, “Physical, regulatory or geopolitical disruptions have impacted rare earth supply and the average mine takes more than 16 years from discovery to first production.”

Financing transition minerals and metals
Circling back to what financial institutions can do to support investment – structured natural resources finance solutions across the global commodity markets value chain (oil and gas, metals and mining, and soft commodities) are available. These can be used for capital investment and mergers and acquisitions as well as working capital. Supply security and the transition to a ‘low-carbon’ economy are, concludes Deutsche Bank’s Ropers, “Long-term trends that will shape Deutsche Bank’s risk appetite and propel growth in natural resources finance transactions; metals and minerals demand, new supply corridors, alternative metals processing capacity and low-carbon energy.” He is confident this is already under way.



Revitalising Tashkent's water sector

With the damaging effects of climate change and a rapidly rising population putting pressure on Tashkent's ageing infrastructure, *flow's* Clarissa Dann explores how Uzbekistan is modernising its historic capital's water and sanitation systems

Tashkent, the largest city in Central Asia, is tucked away in the north-eastern region of double-landlocked Uzbekistan. It dates back at least 2,000 years and, having been destroyed by Genghis Khan in the 13th century, was successfully rebuilt by the Timurid Dynasty and transformed into a major trading centre on the historic 'Silk Road' – the network of Eurasian trade routes spanning more than 6,400km that first emerged in the second century BC and operated until the mid-15th century.

Fast-forward to the present day and the Uzbek capital represents the economic and cultural heart of Central Asia, experiencing rapid demographic growth. By 1950, there were around 750,000 inhabitants. This has now risen to three million – a figure that is expected to rise to more than four million by 2050. Naturally, this growth has presented significant challenges, particularly in upgrading the city's ageing water infrastructure, which dates back to the 1960s. The systems providing the city's population with clean drinking water and sanitation services are increasingly stretched.

These demands are likely to be further amplified as the population rises.

Recognising this, as the Asian Infrastructure Investment Bank (AIIB) reported in July 2022, the Uzbek government has identified access to water and the need to modernise infrastructure as a key priority for promoting economic development. Deutsche Bank's Structured Export Finance team saw an opportunity to support this with a structured export finance-based package of lending.

Water under the bridge

In 1865, Uzbekistan became part of the Russian Empire and began to experience significant growth. Under Soviet Union control in the 20th century, the country's infrastructure bore the hallmarks of socialist urban planning – stark, functional and monumental. Architecturally, Uzbekistan's urban centres embraced expansive concrete structures and standardised apartment blocks in alignment with the communist ideals of functionality and utility. But, as historian Paul Stronski puts it in his book, *Tashkent: forging a Soviet city 1930–1966*, repeated ideological shifts and ever-changing political priorities hindered long-term planning and were major obstacles to urban renewal.

As part of these developments, and in response to its rapid population growth, the country's water and wastewater systems underwent substantial development during the Soviet era. Modernisation projects were put in place to ensure reliable water supply and sanitation services to the growing Uzbeki urban population, along with the establishment of water treatment plants and the expansion of sewage systems to manage wastewater.

By the time independence came in 1991, many of the water and wastewater facilities built during the Soviet era had aged poorly, and leaks, corrosion and other inefficiencies were becoming a major issue. Added to the need for extensive rehabilitation, the decentralisation of water supply and sanitation to local governments in 1996 proved a failure,

Image: iStock



€142m

Cost of the
Tashkent Water
Transformation Plan

60-second takeaway

Tashkent, the capital of Uzbekistan, has ageing water and sanitation infrastructure that urgently needs upgrading

- French company SUEZ Group has been awarded a seven-year, €142m contract to implement the Tashkent Water Transformation Plan
- Smart digital solutions will be used to improve water management and reduce leaks and consumption
- Deutsche Bank coordinated the €109.5m ECA and €22.34m commercial facilities

with the resulting fragmentation and limited capacity contributing to high levels of pollution and contamination of Uzbekistan's Zaravshan river and surrounding basin.

While the politics, along with the country's water infrastructure, have shifted and evolved over the years, the geographical reality of Uzbekistan as a landlocked country surrounded by five other landlocked countries remains, making access to water a logistical challenge. Virtually all the water resources in Central Asia come from the year-round snow and glaciers in Kyrgyzstan and Tajikistan – and Uzbekistan too relies heavily on cross-boundary water from its upstream neighbours.

Today, Uzbekistan's unique geography – in combination with the heightening impact of climate change – means that the country is among the 25 most water-stressed countries according to the Water Resources Institute (WRI). These countries use more than 80% of their renewable water supply for irrigation, livestock, industry and domestic needs. "Even a short-term drought puts these places in danger of running out of water and sometimes prompts governments to shut off the taps," says the WRI. This combination of factors has made improving the country's water system a key priority for the government since the turn of the century.

For example, as part of the country's ongoing efforts to improve its infrastructure, the government launched the Bukhara and Samarkand Sewerage Project (BSSP) in 2010. This is an 11-year initiative to address a major source of the large-scale environmental pollution in the Zaravshan river basin: the widespread lack of wastewater treatment in two of the country's urban centres, Bukhara and



We are delighted to support the Uzbek authorities in improving access to water services

Sabrina Soussan, Chairman and CEO of SUEZ

Samarkand. The development project, concluded in 2021, benefitted more than half a million Uzbeks with improved water supply and sanitation services.

Plugging the leak in Tashkent

Despite some progress, 41% of Uzbekistan's population still does not have access to safely managed water services and most households do not have access to centralised sewerage systems – not least in the country's capital.

To meet the rising demand for potable water and the need to ensure uninterrupted service around the clock for the city's expanding population, Tashkent's local authority was invited to seek the support of foreign companies to aid with modernisation efforts through the transfer of technology and expertise.

The move represented a concerted effort to introduce more modern and efficient forms of water management and strengthen the financial viability of the city's existing operations. This assisted the aim of making Tashkent a pilot project for the broader modernisation of Uzbekistan's water sector, as well as a showcase for the entire Central Asia region.

As part of these developments, the Municipality of Tashkent sought the support of France's SUEZ Group, a provider of

water and waste services with more than 160 years of experience in maintaining essential services that protect and improve people's quality of life. In 2022, SUEZ provided drinking water to 68 million people, as well as sanitation services to 37 million people, across the world. "We are delighted to support the Uzbek authorities in improving access to water services for their population, and to contribute to local economic development with resilient and innovative solutions," said Sabrina Soussan, Chairman and CEO of SUEZ, when the deal was announced.

In June 2020, SUEZ won a seven-year project worth €142m with the Municipality of Tashkent, the Ministry of Construction, Housing and Communal Services, and the national water company and network owner Tashkent Shahar Suv Tamnoti (TSST), with the operator Uzsuvtaminot, to jointly implement a tailor-made action plan: the Tashkent Water Transformation Plan (TWTP). On 22 November 2022, SUEZ signed landmark agreements with its Uzbekistan partners, and the seven-year action plan finally commenced in August 2023. It consists of three phases:

Baseline phase (15 months). During this time, equipment programmes will be launched and various indicators and targets (including water quality, water losses and collection rates) are monitored.

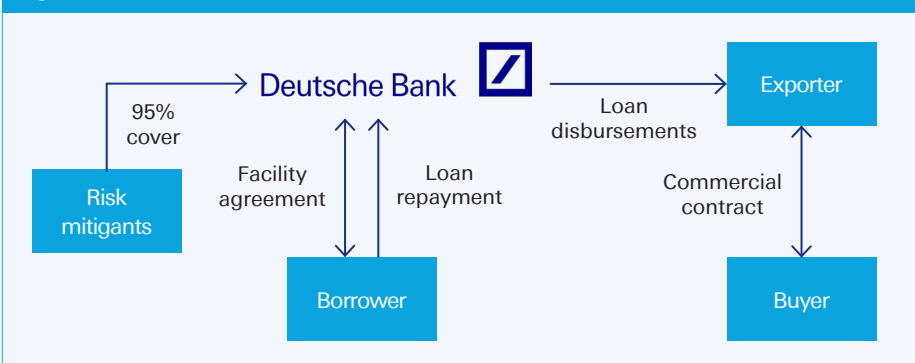
Phase 1 (21 months). This phase will see the deployment of the entire TWTP. KPIs will be monitored throughout.

Phase 2 (48 months). A portion of SUEZ's remuneration (5% per annum) will be conditional on the achievement of operational objectives, measured through the contractual KPIs.

The jointly managed contract relies on the close monitoring of performance and technical excellence, as well as an action plan to improve the quality of drinking water, reduce non-revenue water (such as water that has been produced and is 'lost' before it reaches the customer) by 12% and increase the collection rate in order to achieve financial stability. To achieve these goals, the action plan sets out several key objectives:

- **Improve the day-to-day management of water demand and supply.** This will be achieved through the implementation of an intelligent management tool

Figure 1: Structure of the facilities



Aerial view of the Chorsu market in Tashkent, the capital of Uzbekistan



connected to a real-time supervisory control and data acquisition monitoring system, so that 100% of the network's geographic information systems are digitised and monitored in real-time.

- **A reduction in water losses.** The implementation of the SUEZ diagnostic tool will help maintain the highest international standards. The tool is dedicated to loss analysis and uses advanced leak detection technology and repair techniques to maintain operations. By identifying 30,000 leaks using innovative methods, it will reduce water abstraction by 33 million m³ per year by the end of the project, equivalent to the annual consumption of an Uzbek town of 330,000 inhabitants.
- **Implement the latest digital solutions.** A new Operations Centre will use smart decision-making tools to enable water and energy consumption reductions that will preserve resources and prioritise investments, while the installation of 650,000 smart meters will allow accurate billing. This will also contribute to reducing the city's overall water consumption, thus putting it in a better position to deal with future water shortages.
- **A focus on the future.** By educating thousands of local water professionals,

mostly made up of TSST staff, the SUEZ water academy in Tashkent will train the next generation of Uzbek managers and water specialists; more than 4,000 people will receive a total of 15,000-plus days of training and over 1,500 days of technical assistance. And, through the introduction of both a performance plan and a 20-year master plan that identifies priority investments, the project aims to ensure the long-term sustainability and excellence of water infrastructure, while rapidly improving TSST's financial situation.

Financing the transformation plan

The financing package consisted of a two-tranche Bpifrance Assurance Export

(BPIAE)-covered buyer's credit facility for €109.5m, with 13- and 17-year tenors, financing the eligible portions of the export contract value plus the BPIAE premium. There is also a five-year tied commercial facility totalling approximately €22.34m that will be used to finance the down payment due under the commercial contract, and approximately €1m worth of goods and services not eligible for BPIAE support. The financing package also includes a €30m direct loan from the French Treasury. Together, the three facilities finance 100% of the project costs.

By way of support, Deutsche Bank acted as mandated lead arranger, agent and lender, and signed BPIAE-supported and commercial facilities for the financing of the TWTP (see Figure 1). The loan fits with United Nations Sustainable Development Goal 6 – Clean Water and Sanitation – and has contributed to the bank's ambitious ESG target.

"This modernisation project is strategically important to the infrastructure in Tashkent, as well as its people. We are delighted to have leveraged our experience working on mixed financing structures to play a role in making this ambitious project a reality," reflects Vincent Gabriele, Head of Structured Trade and Export Finance, France at Deutsche Bank.

“This modernisation project is strategically important to the infrastructure in Tashkent

Vincent Gabriele, Head of Structured Trade and Export Finance, France at Deutsche Bank

What happens if cargo ships can't get through ports? Does trade grind to a halt and impact economic growth in surrounding countries? Independent trade economist Rebecca Harding examines supply chain resilience

Choking hazards



Large container ship
passing the Suez Canal

60-second takeaway

The rate of port closures is increasing and its impact is exacerbated by the reliance of supply chains on trade choke points

- Most port closures result from climate-related events, rather than geopolitical tensions
- Less developed countries are typically more impacted by port closures
- Port disruptions are affecting more than 700 million people worldwide

When Baltimore's Francis Scott Key Bridge collapsed in March 2024, the immediate reaction was that there would be a major disruption to supply chains generally in the US, and in the automotive sector in particular. An estimated 5,000 trucks per day, carrying US\$28bn in goods, would be disrupted in the immediate aftermath of the collapse, and for as long as the bridge itself takes to be rebuilt. In 2023 the Port of Baltimore handled nearly 850,000 vehicles (the most of any US port) and 28% of US annual coal exports.

In the end, however, the impact has not been as great as expected. The World Bank's Container Port Performance Index ranked it 300th in the world in 2022 (the latest year for which full data is available) and the US Army Corps of Engineers is working to re-open the Baltimore shipping channel by the end of May 2024. There has undoubtedly been disruption to logistics caused by the collapse, but the port is not regarded as big enough to impact world trade generally; for example, running a simulation through the IMF/Oxford University Port Monitor showed that the impact of supply chain disruption on national gross domestic product (GDP) elsewhere is likely to be less than 1/100th of GDP in Latin American countries closest to Baltimore and only 1/1,000th of GDP in countries further away.

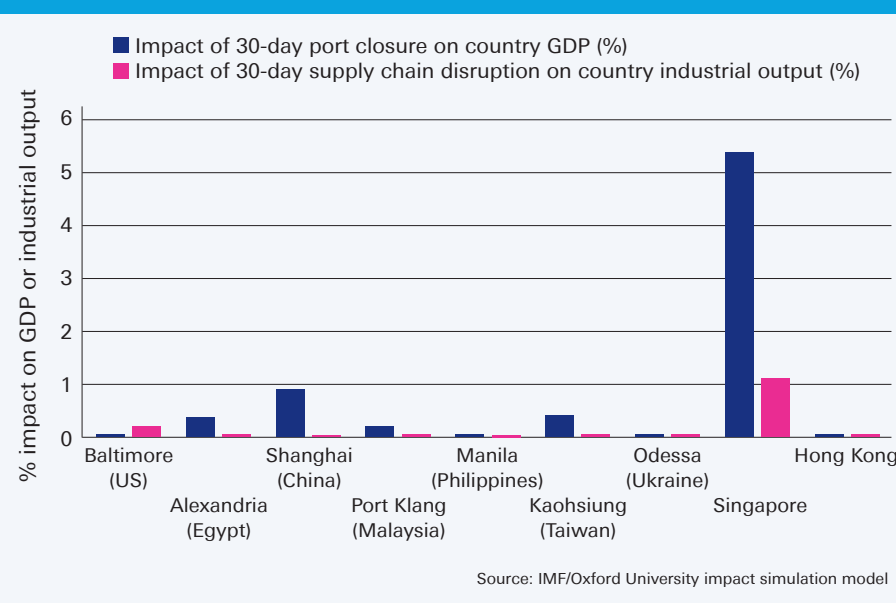
Port disruption impact

Similarly, the impact of port disruption from geopolitical conflict looks not to be particularly severe either from general impact on country-level GDP or from more specific supply chain disruptions (see Figure 1).

This shows the biggest possible impact on GDP and industrial output in any country in the world from the closure of the largest port in that country. Several regions stand out:

1. The biggest impact of any port closure is from a closure of Singapore port. But the impact is not on Singapore's GDP – the model suggests it would be on Liberia's GDP, because of the amount of oil, food and machinery that is exported from Singapore. Singapore would suffer a loss of around 5% of GDP from its port closure. Liberia would also be the country whose industrial output would be most affected.
2. There has been a lot of discussion of the Russia/Ukraine crisis and its impact on Odessa. The closure of Odessa would impact Libya's GDP by around 0.02% only and Kazakhstan's industrial output by a similar amount. Indeed, the impact on GDP would, according to the simulation, be felt most strongly in African countries.

Figure 1: Largest impact on GDP and industrial output of specific port closure for 30 days (%)



3. Alexandria port is clearly impacted by the Red Sea crisis and Egypt's economy is the one that would suffer most from any prolonged closure. It would also be the economy that would be most affected in terms of industrial output. What is surprising is that the effects are less than 1% of both GDP and industrial output.
4. Threats from any conflict in the South China Sea, or between Taiwan and China, would have similarly minimal effects on GDP or industrial output elsewhere. For example, if Kaohsiung Port in Taiwan closed, this would impact Singapore's GDP to the tune of around 0.5%, but its largest impact on industrial output would be in the Philippines, of around 0.01%.
5. Interestingly, the scenario modelling of port closures consistently showed that it was less developed countries that were more impacted by port closures. Many of these impacts were felt most significantly in Africa, adding to a general risk to shipping that comes not just from crises elsewhere but also from the risks of piracy.



A relatively short closure of a port may only cause minimal damage to the global economy

Rebecca Harding, trade economist

This is a stylised description to illustrate a point: are we worrying too much about the risks to shipping from strategically placed ports and canals – in other words, trade choke points? Are the risks perceived ones or actual? The Boston Consulting Group's models of trade identify four key choke points (actual or potential): the Malacca Strait, the Strait of Hormuz, the Suez Canal and the Panama Canal. They argue that these four routes account for nearly half of global trade and therefore pose a threat to the global economy.

However, the IMF model in Figure 1 does not suggest any impact of the current drought in the Panama Canal,

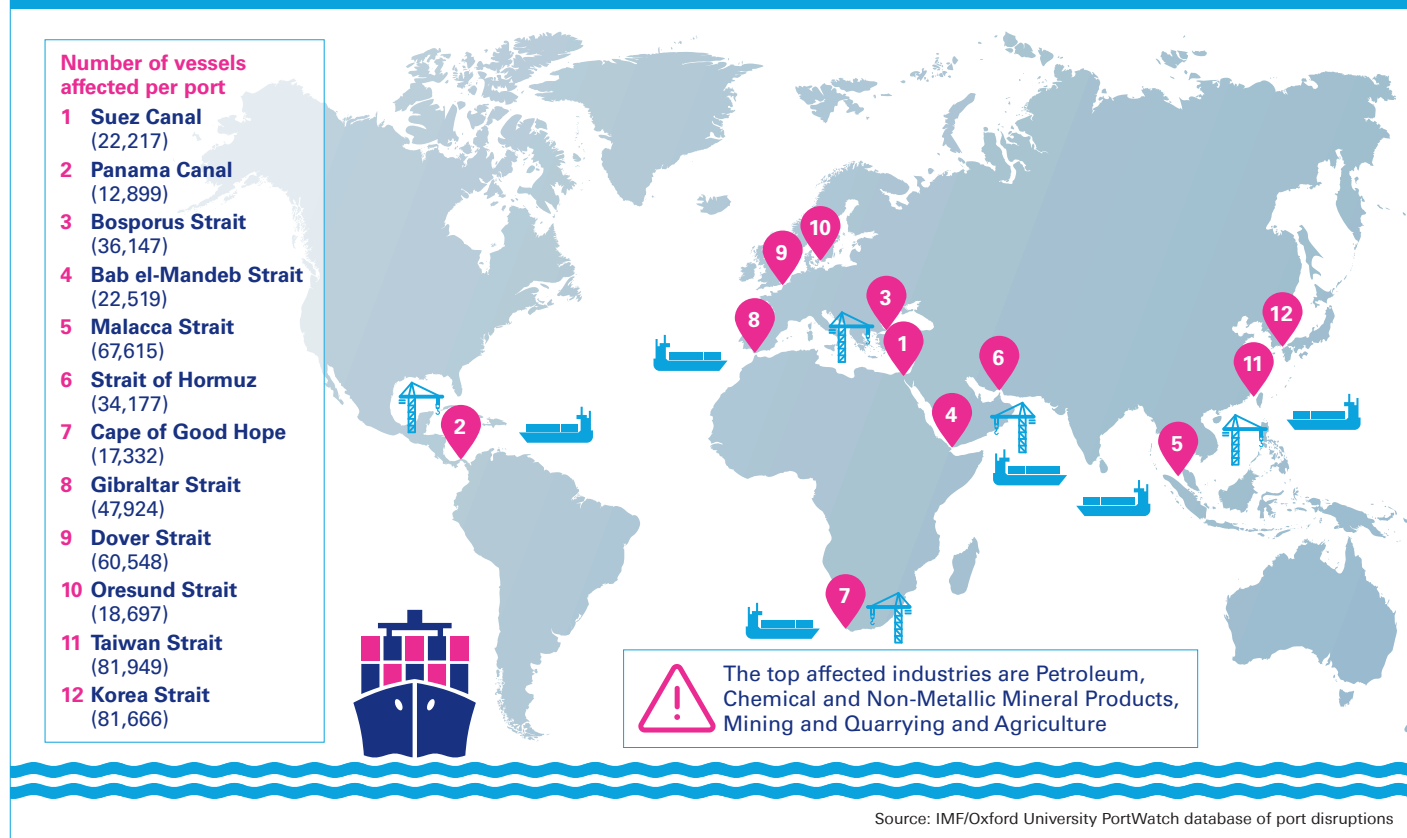
while disruption to Bandar Abbas in Iran would not affect GDP anywhere and the impact on industrial output would be below 0.002% in Iran itself.

Supply chain interdependency

This points to two things. First, since the Covid pandemic and the closure of the Suez Canal in March 2021, when the container ship Ever Given became stuck, commentators have become aware of the interdependency of global supply chains. Perhaps unexpectedly, a relatively short closure of a port may only cause minimal damage to the global economy and its industrial output. However, current disruptions to ports alone are affecting some 708.9 million people worldwide, often in emerging economies; and the longer-term impact of a trade choke point may be bigger simply because of the number of vessels and the types of sectors it affects (see Figure 2).

Second, the impact of disruption in global choke points is likely to be in redistribution and logistics, and any price pressures relatively short-lived as a result. For example, the Red Sea disruption

Figure 2: Twelve ports that experience choke points on global shipping routes



because of Houthi rebel attacks appears to have had a relatively muted impact on trade and inflation. Supply chains have adapted and shown themselves to be relatively resilient. Even if there are costs involved from sending shipping via longer routes, this has been priced in and has merely contributed to the general picture of slow economic growth, dampened consumer demand and over-capacity in shipping as a result. In particular, it seems that because oil prices have not risen to the extent that they could have done given the geopolitics, inflationary pressures have remained low.

Does this mean that trade is less prone to supply chain disruption and political risk than might be expected? Can we discount risk to shipping entirely? The short answer to this is, of course, no, upon examination of the actual evidence.

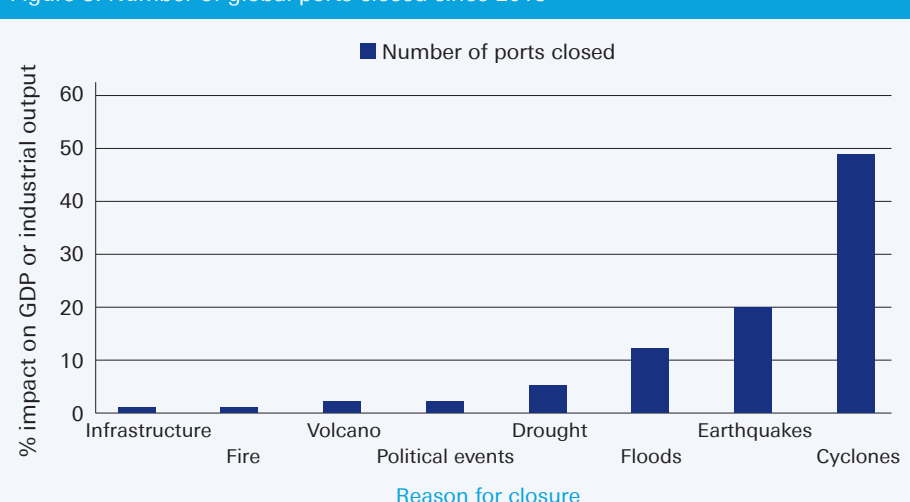
Causes of closure

Of the 93 port closures since 2018 (and excluding Covid), the causes have been largely to do with climate and not political risk (Figure 3).

In other words, as Figure 3 shows, natural causes are far more likely to cause disruption than political events. More worryingly, the number of incidents has increased – there were 16 closures in 2019 and this number remained relatively constant until 2022. However, in 2023 there were 29 closures and, apart from the earthquake in Afghanistan, all were associated with weather events and were distributed across a range of nations.

Economic modelling is beginning to look at the longer-term impacts of climate change on trade and GDP from choke points such as the Panama Canal, the

Figure 3: Number of global ports closed since 2018



Source: IMF/Oxford University PortWatch

“Of the 93 port closures since 2018... the causes have been largely to do with climate

Rebecca Harding

Turkish Straits and the Suez Canal. These channels are particularly important for soft commodities such as agriculture. In terms of agricultural trade, climate change will have a measurable impact

on GDP because of its impact on the capacity of the ports in the regions above to continue to operate if there are more climate-related events.

This means we may be looking at the wrong things. We are distracted by the inter-dependencies of global supply chains on one source, such as China, and by a more general debate on geopolitical conflict and supply chain resilience. This is not to say these are unimportant. They are – because we need to think about energy and food security. Furthermore, there is a bigger risk of uncertainty in emerging economies where the impact of port closures is felt more acutely.

However, a bigger picture is at play and climate change is at the centre of a more permanent and worrying trend in global trade flows. This will affect our food and energy security as well as more immediate access to the goods that we need for our daily lives.

Our current model of trade and supply chain dependency is at risk from trade choke points. These are obviously exacerbated by the impact of political risk, but this risk is relatively short-term and does not seem to impact inflation, prices, or even GDP, significantly, as shipping companies have become more resilient since the Russia/Ukraine conflict started in February 2022.

However, the extent to which climate is affecting, and will increasingly affect, the world's trade flows is an inescapable long-term risk.

Container port in Haydarpasa District, Istanbul, Turkey



Image: iStock

Pillars of frontier economies

Kyiv-Pechersk Lavra
monastery, Kyiv, Ukraine

Multilateral development banks (MDBs) have been working with commercial banks to support crisis-torn economies to get back on their feet for decades. They do this with guarantees and in-country expertise, supporting critical imports and vital GDP-bolstering exports. *flow* shares insights on these transformational partnerships from three leading trade facilitation providers

When Sri Lanka defaulted on its foreign debt – except for its MDB debt – on 12 April 2022, the country was facing the worst economic crisis since its independence in 1948. Amid widespread unrest, President Wickremesinghe was elected the following July and the new government has been working with the International Monetary Fund (IMF) to restructure its debt since.

Kenya managed to avert default when several crises converged: inflation, commodity price volatility and pressure on the exchange rate and FX reserves, not to mention the most severe drought in four decades. Banks pulled their lines in 2022, but now, as Keith Hansen, World Bank Country Director, put it in March 2023, “fiscal consolidation plays a central role in supporting Kenya’s macroeconomic foundations for inclusive and sustained growth.”

For Sri Lanka and Kenya – and many other frontier economies around the world – economic and political uncertainty creates an environment that is often deemed too high risk for financial

institutions, which can negatively affect their ability to access commercial bank money. By reducing the cost of risk weighted capital, MDBs can play a key role in connecting these markets with much-needed additional sources of finance. This is in addition to their vital non-financing activities such as training, policy and advocacy work carried out in support of their trade-development mandates.

Ukraine is another recent example of the critically important role that MDBs play in markets which are all but closed to normal commercial banking facilities. Since the outbreak of the Ukraine-Russia

war, the EBRD (European Bank for Reconstruction and Development) and IFC (International Finance Corporation), together with the World Bank, have demonstrated additionality by providing extensive financial support through risk-sharing guarantees and direct financing. These facilities support the rebuilding and upgrading of industrial infrastructure and the agribusiness, food production, healthcare, construction and energy industries, thereby sustaining the Ukrainian economy and saving the population from the most dire effects of the war.

Beyond country risk

Financial institutions that have had a long history of working with frontier economies tend to see past the spectre of the risk of defaults, especially when it comes to financing the flow of important commodities and cash crops.

This is particularly true of the African continent, home to around 30% of the world’s reserves of critical minerals and metals such as platinum group metals (PGMs), cobalt and manganese, which

“Economic and political uncertainty creates an environment that is often deemed too high risk

Image: iStock

are, explains Pangea-Risk CEO and Founder Robert Besseling, “essential for renewable energy technologies and the broader transition towards a net-zero global economy”.

“Africa has been steeped in the narrative of sovereign defaults and near defaults,” he adds. Credit rating agencies have locked down countries over the past few years since Covid-19, he continues, and while Eurobonds defaulted in some African countries, “there have been very few non-payments in trade finance, export finance and project finance, and the need for food, fuel, infrastructure and mining finance for critical minerals continues regardless.” With this reminder of the relative safety of trade finance compared with other debt instruments, “we need to reassess the way we look at African risk and we should be able to continue to attract financing into the countries that need it most,” he adds.

Defaults have not deterred cash-rich corporates from extracting copper in Zambia or coffee companies sourcing beans from Ethiopia. Part of the recovery story of these economies has been adding processing value in-country, creating jobs and getting more currency flowing in the right direction. This has meant investment in plant and machinery – easier said than done when credit ratings are often too far down the alphabet.

Flowing in the other direction, back into a country recovering from economic and/or political crisis, are essentials such as oil and gas, medicines and agricultural commodities such as corn and wheat. “In stricken countries, we will find that when other repayments have been suspended, governments will find a way of making the payments for these key imports,” says Deutsche Bank’s Anand Jha, Head of Trade Finance, Financial Institutions.

Critical pillars

Facilitating trade in frontier economies and after crises is where MDBs and export credit agencies (ECAs) play such a key role.



Example of an African fishery, supported by the IFC

“
We should be able to attract financing into countries that need it

Robert Besseling, CEO and Founder, Pangea-Risk

Established in the 1940s, MDBs operate with global and regional remits, working with governments and the private sector (enhanced by their strong credit ratings) to secure finance, typically in the form of loans and grants, to encourage social and economic development – but in a way that does not crowd out the private sector.

Trade facilitation programmes were launched and remain, as Shona Tatchell, the new Head of the EBRD’s Trade Facilitation Program, reflects, “The lifeline that bridges from crisis to normality” (see Figure 1).

The Global Financial Crisis of 2008–09 (GFC), adds Steven Beck, Head of Trade and Supply Chain Finance at ADB (Asian

Development Bank), highlighted how “institutions driven by ‘public good’ and development mandates play a critical role in assuring access to adequate levels of timely and affordable trade financing”.

Jha reflects that, “Commercial banks know the requirement of the selling client (for example, a commodities trader) and have a deep understanding of where the goods are coming from – and they also have a relationship with the MDB.” In turn, the MDB has a deep understanding of a country’s financial situation through its relationships with governments and local banks. Once the MDB is comfortable with the country and its economic progress, their guarantees, covering a commercial bank for between 80% and 90% of the risk, make it possible for that bank to provide trade finance.

All three MDBs have clear ESG and sustainability-related finance elements to their programmes. “We believe it is MDBs’ role to standardise the definition of sustainable trade finance. IFC and ADB have published the Sustainable Trade Finance Reference Note to provide guidance for banks in emerging markets on the standardised definition of sustainable trade finance, to help promote more sustainable goods trading in developing countries,” says Nathalie Louat, Global Director of Trade and Supply Chain Finance at IFC. “To achieve this, it is crucial that exporters/importers and banks cooperate closely and ensure that necessary criteria are met,” she adds.

More than 15 years after the GFC, the work goes on – although all three

Figure 1: Key facts about multilateral development banks



- MDBs provide financial assistance to developing countries, typically in the form of loans and grants
- MDBs fund mainly infrastructure but also energy, education and environmental sustainability projects
- MDBs often provide member nations with advisers, auditors and expert assistance in implementing and monitoring bank-funded projects

Source: developmentaid.org

MDBs had been supporting trade well before then. Louat points out how current geopolitical tensions and regional conflicts have greatly hampered affordable trade and supply chain finance in the affected countries, “which, in turn, causes severe stress around health and food security”. This is because the countries cannot import food staples or pharmaceutical products. A key inflection point was the Covid-19 pandemic; it was at this time that the IFC approved a US\$8bn rapid response package to support emerging markets – US\$6bn of which was earmarked for trade finance and short-term working capital finance. ADB’s Beck believes the pandemic has “transformed the global conversation about trade and supply chains” and these are now seen as important elements in solving global challenges such as climate change, social responsibility and resiliency.

Risk substitution

Where commercial banks find risk challenging, the role of the MDB, explains Tatchell, is to act as the support mechanism for countries and their institutions “to transition into functioning as open, market-based economies with access to clean credit lines, longer tenors and affordable pricing”.

It does this, she continues, with credit guarantees, “providing risk substitution through our on-demand 100% coverage guarantees”. Carrying zero-risk weighted assets, these facilitate longer tenor financing and a smoothening of credit pricing. “Our role is also to channel donor funding, both to provide blended finance and grants and subsidies that encourage transition to more sustainable, technologically-enabled economies,” she adds.

In other words, says Beck, “MDBs help reshape the risk profile of a transaction



MDBs help reshape the risk profile of a transaction or trade flow

Steven Beck, Head of Trade and Supply Chain Finance, ADB

or trade flow so that trade that might otherwise not qualify for trade financing can be supported.” This helps them extend their reach into more countries with more clients “on a substantially risk-mitigated basis”. Louat makes the point that this role of taking on trade finance risk mitigation is not just performed in times of crisis, but is an ongoing “key facilitator of trade finance in low-income countries”.

Closing the trade finance gap

Each year, the ADB publishes its survey-based analysis of the unmet demand for trade finance – the difference between requests and approvals for financing to support imports and exports. The gap, as at the close of 2022, sat at US\$2.5trn. From Beck’s perspective, “One measure of success is nothing less than having MDBs become irrelevant in financing international trade, because private sector providers would have fully addressed the global demand.”

Obsolescence is hardly around the corner, and the ADB is looking at ways in which the long tail of supply chains could be reached via a potential Deep Tier Supply Chain Finance programme. The gaps, Louat points out, “tend to be more acute for SMEs trying to establish themselves within local, regional or global value chains”.

Tatchell sees the MDB’s role here as one of “training our issuing banks in global expectations of compliance standards, highlighting technological solutions to know-your-customer (KYC), due diligence (DD), Sanctions and anti-money laundering (AML) screening for our issuing banks and working with confirming banks to demonstrate where our issuing banks should and do meet compliance standards”.

All three MDBs have ongoing dialogues with regulators and standard-setters, with the ICC Trade Register (the only authoritative source of industry data on defaults and losses on trade finance) having done much to help reduce the cost of capital associated with providing trade finance. It was first launched in 2009 by ADB after Beck first came up with the idea.

Partnerships with Deutsche Bank

Deutsche Bank has a long history of working with all three MDBs, says Jha. Key features of the relationships are:

- ADB: Since 2004, the bank has collaborated on trade finance transactions in countries such as Bangladesh, Pakistan and Uzbekistan. Both Beck and Jha have confirmed the relationship is moving to one based on a risk participation agreement “to foster growth in both transaction volumes and the number of countries engaged”. In September 2023, Deutsche Bank signed a risk participation agreement focused on supply chain finance, extending to three programmes across five countries.
- EBRD: “Deutsche Bank is one of EBRD’s most important institutional relationships,” says Tatchell. Since the partnership began after the fall of the Soviet Union in 1999, the EBRD TFP has supported more than 2,100 transactions for Deutsche Bank, amounting to €1.3bn. These lines have been used for the Caucasus region, Eastern Europe, Central Asia and South-Eastern Mediterranean countries, with Tunisia and Greece being the most common destinations in recent years.
- IFC: Having collaborated on more than US\$4.8bn in transactions since 2005, IFC and Deutsche Bank most recently announced a risk-sharing partnership of up to €215m to provide financing to importers and exporters of essential goods in Africa, particularly in small, fragile and conflict-affected states.

Figure 2: Summary of trade/supply chain facilitation programmes

	ADB TSCFP	EBRD TFP	IFC (across all trade programmes)
Founded	2009	1999	2004
No. of transactions supported	45,510	31,000	95,000
Value supported	US\$57bn	US\$31.7bn	US\$200bn
Programme head	Steven Beck	Shona Tatchell	Nathalie Louat

Data as a building block for digital trade finance

How can the trade finance industry create a digital ecosystem? Pamela Mar, Managing Director, Digital Standards Initiative, International Chamber of Commerce (ICC) explores how bridging trade and financial flows could be the key

The integration of the physical and financial information flows that underpin global supply chains is an integral part of a harmonised digital trade ecosystem. For financial institutions, it offers the promise of faster, more secure management of trade finance transactions, allowing more capital to flow to both current and new markets. Recent pilots that, in place of traditional processes, deploy electronic documents of title across secure networks have demonstrated this potential – reducing transaction times from a week or more down to 24 hours or less, in addition to freight cost savings from shipping paper across continents.

A longstanding challenge has been the seeming lack of standardisation of data, electronic documents and forms, and processes used by different trade platforms and networks, which creates barriers to digitalisation when supply chain partners transact across different platforms, networks and jurisdictions. Only recently have some platforms or networks aligned bilaterally on processes, data and documentation through application programming interfaces (APIs) in order

to enable data sharing. But as markets expand, and supply chains become more rather than less complex, the bilateral approach faces its limits.

Comprehensive frameworks

The Digital Standards Initiative (DSI) has begun to address several of these challenges by developing a comprehensive framework to align data and electronic documents along the end-to-end supply chain. Over an 18-month period, its Key Trade Documents and Data Elements (KTDDE) Working Group analysed 36 essential trade documents (see Figure 1 on page 60), with the aim of simplifying the panoply of standards, driving convergence in the use of these standards and creating a pathway towards interoperability of data and documents across networks and platforms. Of these 36 documents, a useful starting point for industry convergence are the 21 that are already fairly harmonised, ready to be scaled and offer the potential for interoperability.

Notably, the standardised set includes three of the four key trade documents facilitating financial processes. The Payment Confirmation benefits from

the adoption of ISO 20022 within the framework of the Swift network, while bills of exchange and promissory notes are transforming under industry-led efforts, including the Digital Negotiable Instruments Initiative of the International Trade and Forfeiting Association and the Digital Ledger Payment Commitment by the Bankers Association for Finance and Trade.

Although significant strides have been made in digital transmission, the process for the fourth key trade document – the letter of credit (LC) – is still largely driven by proprietary processes, unstandardised data and traditional document checking needs. Historically these may have existed due to varying legal, compliance and sanction screening requirements, plus the need to identify counterparties across jurisdictions – but today, solutions exist for various parts of the LC-at-scale puzzle.

Given the dominance of documentary credits internationally, the potential gains from digitalising LCs across players and networks could be high. Although private efforts to digitalise the LC process at scale have been implemented to some extent, it remains to be seen whether the

Figure 1: The 36 essential trade documents

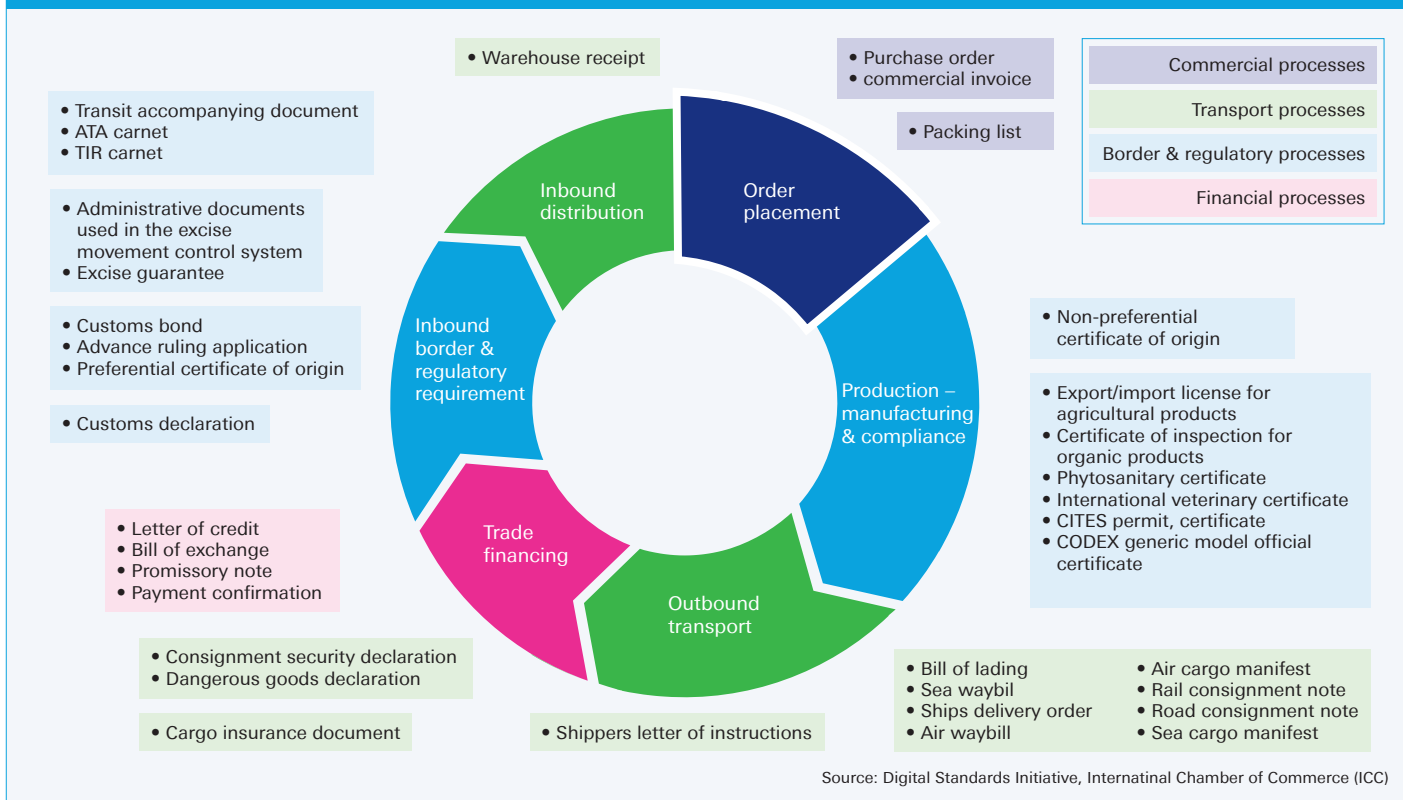
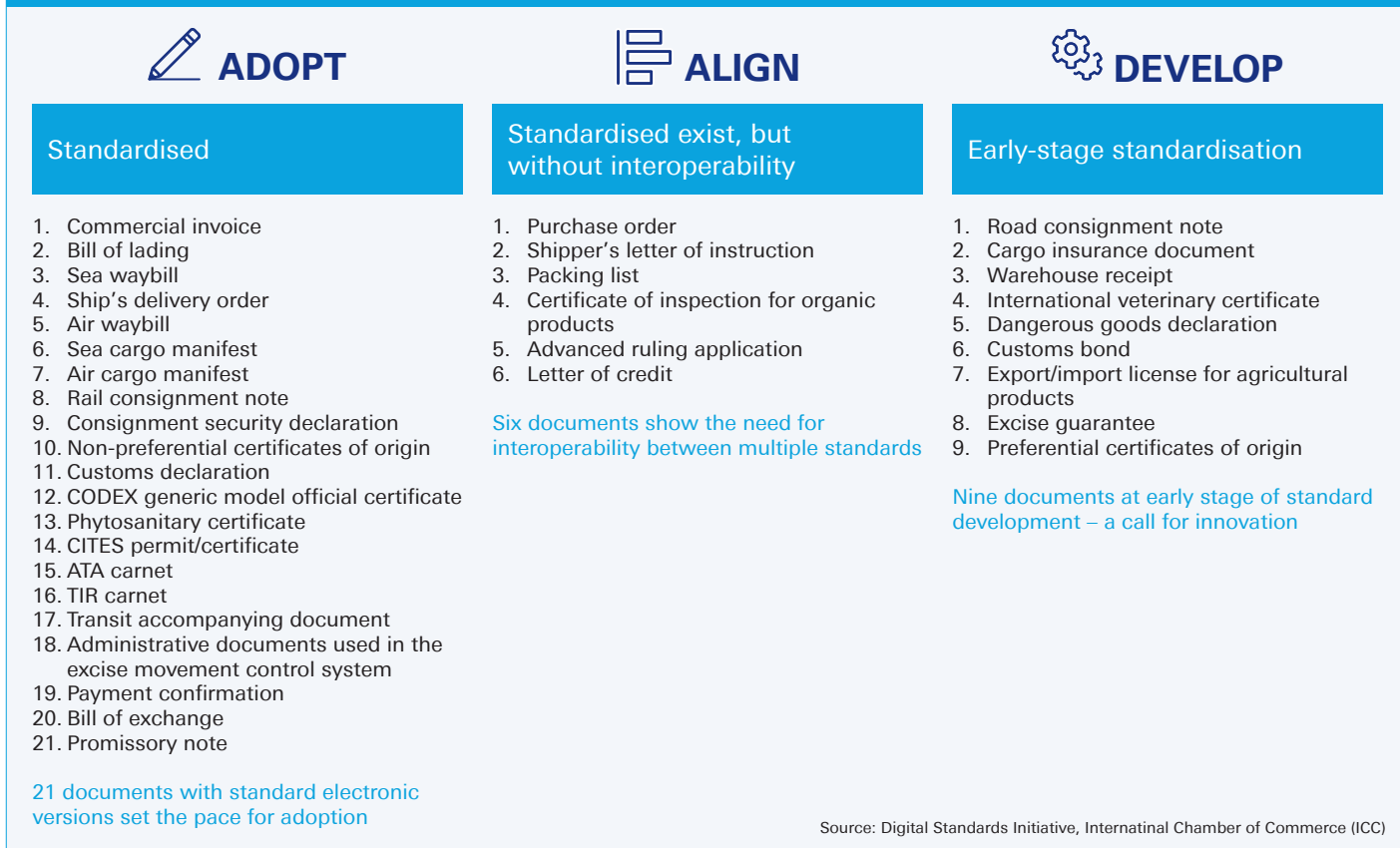


Figure 2: Adopt-align-develop framework for the 36 documents



development of inclusive standards can address the core issues at play: the need for banks to retain commercially sensitive, proprietary processes while standardising core data, processes (such as KYC, AML and credit) and APIs to allow digitalisation to expedite processing, transfer and payment. The gains would accrue not just to banks, but, importantly, to the millions of SMEs and other traders whose scale or location currently excludes them from the traditional LC process.

Better leverage data

The extent to which data from the physical information chain, when secured, could go towards trade finance processes, as well as how this might occur practically through trade platforms and/or digital networks, could also prove promising for the further integration of physical and financial data.

On the first point, the Commercialisation Working Group of the ICC Global Banking Commission used the KTDDE analysis of seven core trade documents to explore the relevance of the data elements in these documents for trade finance. The group's initial results show that, depending on the type of financing, between 50% and 70% of the data elements in these documents could be reapplied to fulfil the data needs of the related trade finance process. Of course, such data will need to be authenticated and securely transferred from the trade document such that banks might be able to simplify their own documentary and checking processes.

Some banks are already applying optical character recognition, natural language processing and other technologies to extract and structure data found on physical documents. It is possible that these technologies plus a secure data feed could, over time, fill most if not all the core data needs within the trade finance process. The additional use of digital identities to onboard and verify supply chain partners could foster digitalised, expedited and cheaper transactions.

That data found in trade documentation is essential for trade finance may be intuitive, given that it references the same supply chain. But determining exactly where this data is generated, and which data elements need to be authenticated, secured and ported over, are the first steps in realising the integration of these separate processes. The next challenge will be to determine how this transfer might take place. For example, could open, standardised APIs be the key to moving from documents to data?



Some banks are already applying optical character recognition... and other technologies to extract and structure data

Pamela Mar, ICC

Legal reform, standards and trust

As more countries align to the United Nations Commission on International Trade Law's Model Law on Electronic Transferable Records (MLETR), and the use of electronic transferable records (ETRs) becomes more common, scalable models for data and document transfer will likely emerge. A key to the MLETR is that it primarily defines how ETRs should be securely transferred between parties to ensure functional equivalence to the specific document of title, without distinguishing between ETRs that are primarily finance-related or trade-related. This is a marked difference from digital platforms that streamline specific trade or finance processes to enable alignment and data sharing among their members.

To prepare for this eventuality, the DSI is developing a way to assess the ability for digital trade platforms and systems to fulfil the performance of transferring ETRs under MLETR. The technical assessment is a key part of the analysis that will help to create a roadmap for the industry to move from documents to data at scale, which was

first mooted in *Trust in Trade*, published in March 2023.

Applying zero-trust architecture to trade formed the basis for determining the feasibility of secure sharing of key trade data elements that appear in multiple trade documents. In its recent aggregate analysis, the KTDDE working group identified 189 core data elements, of which around 50 are shared across more than five documents.

Unbundling these elements from their individual processes, as well as prescribing a secure way for them to be shared across multiple parties, could do much to reduce administrative checking and clearance times, which will help all supply chain players, including banks. The DSI believes that the way forward is to understand what needs to happen at the granular level, to map a pathway to scale built on three pillars: legal reform, standards and digital trust.

The movement towards MLETR alignment is gathering pace: half of the G7 is already there, and many more major trading nations are now considering how to achieve alignment. But that is not enough. Interoperability relies on standards and trust. We hope that the KTDDE analysis, together with our work on reliable systems, will go some way towards anchoring and pointing the pathway to achieving these in the near future.

The author would like to thank Merlin Dowse, Vice Chair of the ICC Banking Commission, Joshua Kroeker of Mitigram and Hannah Nguyen of the Digital Standards Initiative for their feedback and views which contributed to this article

A Guide to Digital Trade Finance



Digitalisation has long been a priority for the trade finance industry, with operational efficiency and lower transaction costs among the anticipated benefits. But what progress has been made?

This Guide to Digital Trade Finance has been produced to identify what has caused the pace of change for trade finance digitalisation to be this glacial, as well as to examine what accelerants are in place to take the industry to the next level. With contributions from experts across the trade finance community, this white paper is arranged into six chapters, with helpful footnotes for suggested further reading



An aerial photograph showing a winding asphalt road with yellow borders, curving through a steep, mountainous landscape. The hillsides are covered with traditional terraced coffee farms, appearing as a series of flat, rectangular plots. The terrain is rugged, with some areas showing exposed earth and others with sparse vegetation. In the background, more mountain ranges are visible under a clear sky.

Beyond oil:

Saudi's new black gold

Saudi Arabia has ambitious long-term plans to diversify away from oil to growth industries such as coffee cultivation. Arabica beans have been grown in the Kingdom's lush, mountainous southern regions of Jazan, Aseer and Al-Baha for more than 800 years, and the Saudi government now plans to use this tradition and expertise to grow coffee exports, and domestic sales, significantly in the coming decades

Coffee trees planted in traditional terrace farms in southern Saudi Arabia

Saudi Coffee Company was launched by the Kingdom's Public Investment Fund (PIF) in May 2022, with the aim of significantly boosting the country's sustainable coffee production



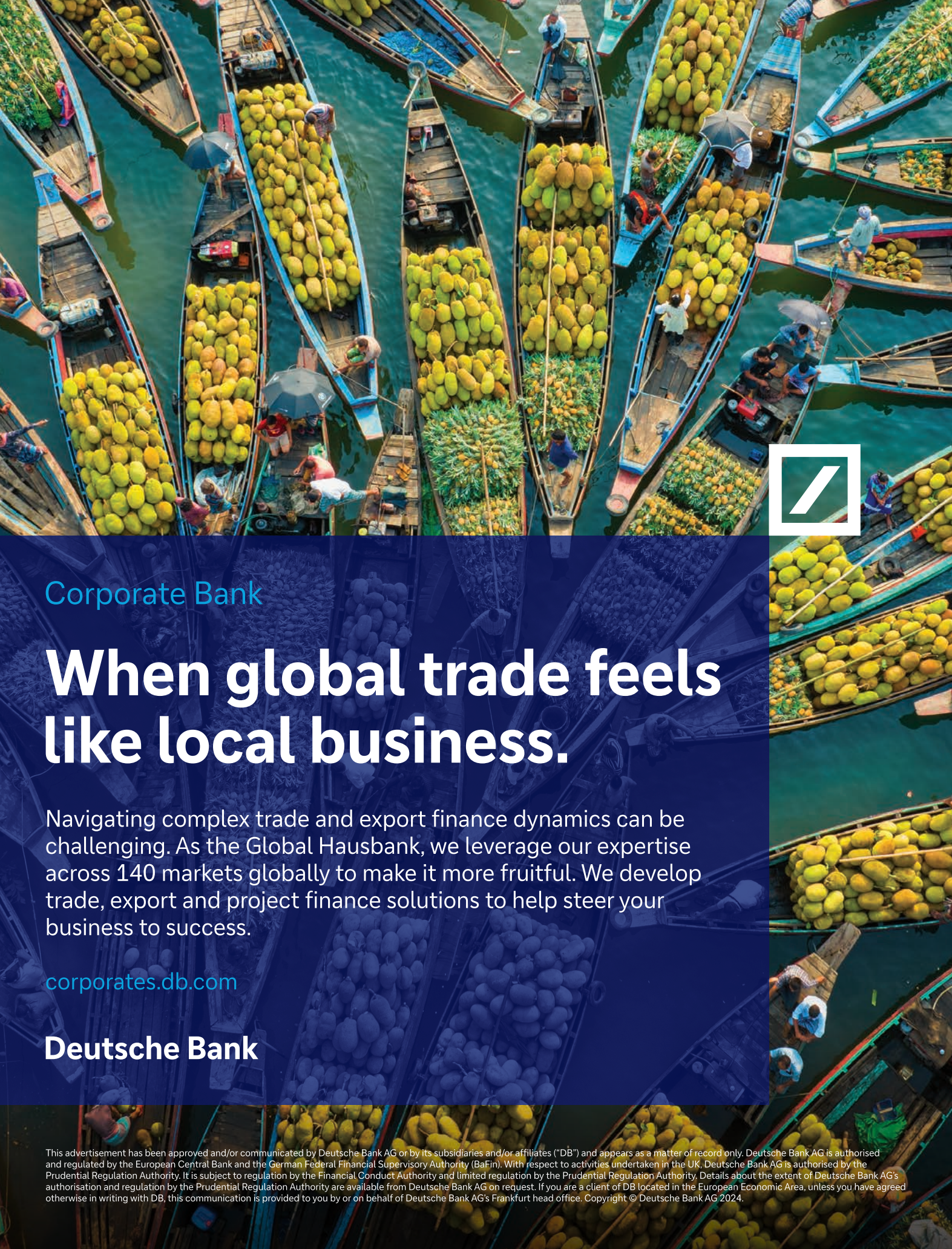
Bean counting

US\$319m PIF investment in Saudi Coffee Company over the next decade

300 tons of coffee beans produced in Saudi Arabia annually – aiming for **2,500 in 10 years**

More than **2,500** coffee plantations and **400,000** coffee trees in Saudi Arabia currently

Sources: Saudi Arabia PIF, Saudi Coffee Company



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Securities Services

An update on faster
settlement cycles, the
future of custody and
cryptocurrency in asset
management



Beyond T+1

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Global custodians in a new
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Digital assets

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Post-trade: can one become zero?



As financial markets around the world move to shorter post-trade settlement cycles, what does this mean for settlement success, market stability and the optimisation of technology? Hui Ying Mew from Deutsche Bank's Securities Market & Technology Advocacy Product Management team considers how faster settlements can work with rigorous planning from all stakeholders

The post-trade industry has witnessed an acceleration in settlement cycles from T+3 to T+2 over the past two decades. More recently, the trend has been seen in the following markets:

- Markets that have shortened their cycles
- Markets planning to shift to a shorter cycle
- Markets that have initiated investigation

Benefits and challenges

The acceleration of the settlement cycle is primarily driven by the push to reduce market risk and margin requirements. Various risks – systemic, operational, counterparty exposure and liquidity risk

– are reduced with the delivery of trades in a shorter timeframe, and this reduction in risk exposure then translates to lower margin costs.

Furthermore, the acceleration of the settlement cycle is an opportunity for operational efficiencies and cost savings, as well as further automation.

However, the transition to faster settlement, which implies quicker pre-settlement processes, also presents new operational challenges and certain heightened risks which need to be carefully managed, such as settlement and funding. Compressing the settlement cycle may also lead to an increase in trade failure if new market cut-offs are not met,

causing negative impacts on liquidity.

In Asia, accelerated settlement cycles are not new, and they offer references to models that work at an increased speed. For example, the Chinese securities market has been operating on a T+0 timing and the Northbound Stock Connect (a securities trading and clearing links programme between Shanghai and Shenzhen and the Hong Kong SAR) successfully achieved this speed for cross-border participants. Also, India successfully moved to T+1 in 2023 and has introduced the Beta version of T+0 on an optional basis in March 2024.

This article summarises three key considerations when moving to a shorter securities settlement cycle.

Figure 1: Three types of accelerated trends



01

Markets that have shortened their cycles

- January 2023: India completed the phased approach to transition to a T+1 settlement cycle
- August 2023: Philippines accelerated their settlement cycle from T+3 to T+2
- March 2024: India introduced a Beta version of T+0 on an optional basis
- May 2024: US, Canada and Mexico shifted to a T+1 cycle
- June 2024: Sri Lanka moved to a T+2 settlement



02

Markets that are planning to shift to a shorter cycle

- 2024: Pakistan has the intention to move to T+1



03

Markets that have initiated investigation

- August 2023: UK Finance released 'Accelerated Settlement – examining the case for trades to be settled more quickly in the UK – moving to T+1'. The 'Accelerated Settlement Taskforce' report published in March 2024 recommended the UK commit to T+1 by end of 2027
- October 2023: The European Securities and Markets Authority (ESMA) released the 'Call for Evidence on the shortening of the settlement cycle', gathering feedback on the impacts, benefits and costs of a move to T+1
- April 2024: The Australian Securities Exchange published 'Considerations for accelerating cash equities settlement in Australia to T+1', assuming the impacts and requesting for responses from stakeholders
- Some Asian markets are investigating the move to T+1

Source: Accelerated Settlement – examining the case for trades to be settled more quickly in the UK – moving to T+1 (UK Finance); Call for Evidence on the shortening of the settlement cycle (ESMA)

Image: iStock

1. Onshore and offshore stakeholder communities

When assessing the impacts of a shorter settlement cycle, markets that have significant inflows from foreign capital and highly liquid international markets (such as currency-controlled markets) need a holistic approach to understand the implications for cross-border investors and intermediaries. The challenges to offshore investors and intermediaries can be particularly complex due to the current market structure of intermediary layers that need time to process, and information flows that are not always perfect. These challenges could also be further compounded by time zone differences (see Figure 2).

Indeed, even after the shorter workflows have been ironed out, documents such as service level agreements, standard operating procedures etc. are likely to need re-documentation and sign-off by the parties involved.

These key challenges should be considered when determining the implementation date for an accelerated cycle, bearing in mind that offshore investors and intermediaries would require additional time in their preparation for new processes associated with the accelerated cycle.

2. The automation strategy

When markets move from a T+2 to a T+1 settlement cycle, market settlement cycle cut-offs are brought forward by a day. Activities that are carried out across the T+2 window must now be completed by T+1, with the bulk of activities to be completed on the transaction date itself. This reduction of 24 hours can effectively leave offshore investors and intermediaries with two hours or less to complete the settlement process, depending on their location, according to the Depository Trust and Clearing Corporation (DTCC).

Automation technology tends to be viewed as a silver bullet to solve this compressed time challenge. There are three main approaches to deploying technology, each with its own trade-offs:

2.1 Forced automation

This approach seeks to automate all current manually intense processes to allow operations staff to complete the same number of tasks in the shorter time. Figure 3 shows a non-exhaustive list of steps in the settlement process – now

Figure 2: Challenges facing offshore investors with shorter settlement cycles

Challenge	Offshore investors	With a shorter timeframe
Time zone	Offshore investors situated in different time zones may have a shorter window to complete post-trade processes	The window to complete post-trade processes is compressed even further
FX	Offshore investors will need to execute FX to fund their settlement trades	Offshore investors are left with a shorter window to execute FX. Access to liquidity during this window is a consideration as it affects the spreads
Intermediaries	Offshore investors access the local market through multiple intermediaries such as international brokers and global custodians. More layers lead to more time taken to access the market	Communication across these layers will have to be timely and precise to meet the new cut-offs
Market infrastructure set-up	Market practices may involve multiple checkpoints between clients, brokers and custodians, e.g., pre-matching and affirmation processes	The various checks that were sustainable in a longer cycle may become an impediment in a shorter settlement cycle. This will require major overhauls to the market infrastructure, which will then require changes in the country's securities market regulations

required to be completed within two days of a T+1 cycle.

To manage this compression of activities into a shorter timeframe, firms aim to implement straight-through processing (STP). Activities that tend to be manual, such as the pre-matching of trades with counterparties, can be standardised and automated. For full STP to be realised, data harmonisation must be achieved across the various systems involved.

Unsurprisingly, this approach has its limitations. Implementation, for example by using 'bots' to achieve higher levels of STP, would help to complete the same number of tasks in a shorter time span. However, not all processes can be fully automated; exceptions from reconciliation breaks will still require human expertise to investigate and reconcile in a timely manner.

Another barrier to full automation is the dependency on counterparties to have compatible systems for synchronisation. For example, a custodian may be able to automate all Swift instructions. However, if the client instructs via email, STP can only begin after the email instructions have been converted into Swift messaging format for the systems to pick them up.

Furthermore, STP does not result in the total elimination of operational risks. Proper checks and balances will always have to be in place to prevent errors.

2.2 Shortening the settlement process

Another way to shorten the time taken to settle a trade is to reduce the number of steps in the settlement process. Certain practices can be realigned, combined or removed completely. This would require a full front-to-end review of the firm's current processes at every step of the trade lifecycle.

Let's look at when the client first instructs the executing broker. The broker then provides confirmation to the client, after which the client generates a settlement instruction to their custodian. Can there be a solution to reduce the amount of back-and-forth between the client, broker and custodian by combining these steps? If implemented on an industry level, this solution has the potential to generate even more benefits.

Technologies such as machine learning and distributed ledger technologies (DLT) can replace certain current processes in the trade lifecycle. With DLT, business rules such as corporate actions entitlement can be embedded into

Faster settlement cycles

smart contracts, removing the steps for manual calculation. Concurrent processes can be implemented to replace sequential ones for faster communication, although legality can be an inhibitor to such parallel workflows. Other new technologies can also be used, such as artificial intelligence (AI) that can be trained with historical data to flag potential trade errors at the point of execution, giving an additional layer of checks to prevent settlement fails.

This approach would require longer, as it needs the right expertise to design and manage new workflows while retaining the same levels of operational risk controls. Firms will be required to invest in building new systems and technologies to support faster settlement cycles in the near future.

2.3 Industry utility

The creation of a central utility by financial market infrastructures has the potential to introduce a more efficient industry-wide workflow solution, allowing market participants to fully benefit from the economies of scale. The linear flow of data today still necessitates processes such as reconciliation, recreation and dissemination to be performed between parties. Having a central source that market players can interact with directly removes the need for duplicated processes across firms. This is illustrated in HKEX's Synapse workflow, where a central utility facilitates parallel communication between the various market participants, bringing about time and cost savings.

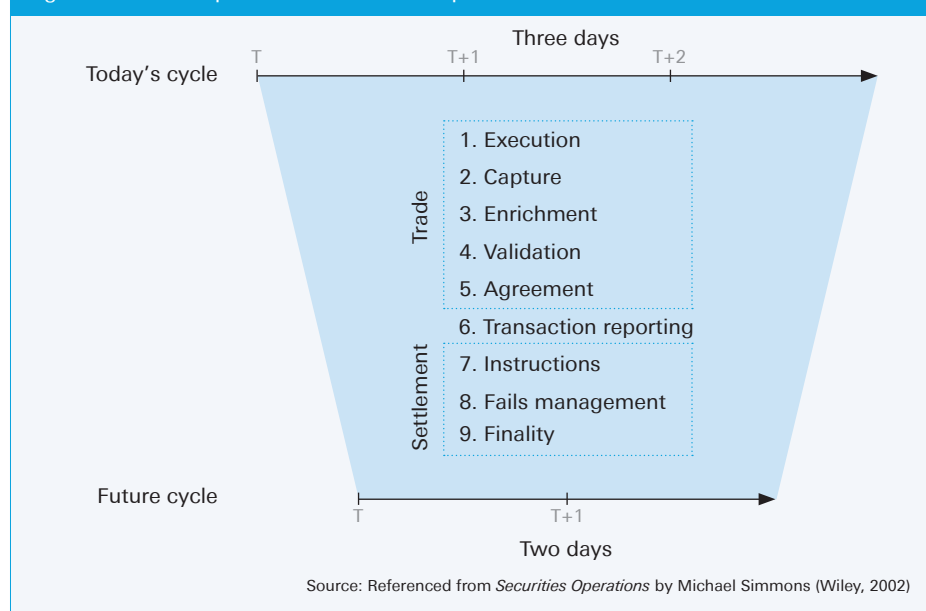
While the benefits of a common utility are enormous, the magnitude of the task needs to be addressed. Such large-scale projects are best undertaken by financial markets infrastructures (FMI) to encourage uptake by industry participants.

3. Evolving good market practices

As more markets accelerate their public securities settlement cycle, existing market best practices may need to evolve too. For example, currently, having prefunding requirements is viewed as inefficient as it increases funding costs and reduces liquidity for investors, diluting market attractiveness. However, it may be inevitable in the new environment; for instance, after the move to a T+1 cycle in the US, asset managers in Asia may need to prefund if the following business day in the US is a public holiday in Asia.

As another example, in a shorter settlement cycle, the pressure on system

Figure 3: Main steps in trade settlement process



and data recovery processes would be significantly higher in the event of system outages. This is because there is a higher possibility of systemic risks if core system recovery is delayed and the backlog of transaction settlements snowballs. Consequently, firms will also need to reassess the recovery point objective (RPO) and recovery time objective (RTO) of all systems involved. For example, having an RTO of X hours for critical systems may be adequate in a T+2 cycle. However, if settlement cycles were to be compressed to a T+0 end-of-day batch run, disruptions to critical systems would have faster effects and more material impacts on the industry, and the firm's financials and reputation, from snowballing transactions. Therefore, a faster settlement cycle can require a reduced RPO and RTO to achieve operational resilience, in turn possibly meaning more investment into technology infrastructure and staff training to respond more quickly to events.

“Reducing operations and balance sheet costs through faster settlement cycles could lead to new credit and systemic risks

Boon-Hiong Chan, Deutsche Bank

As such, the established 'best' practices of today can benefit from review to establish an evolved market standard fitting a faster post-trade environment.

Careful planning is all

As the settlement cycle compresses further from T+2 to T+1 and even to T+0, the operational demands in the settlement space will increase significantly. More pressure will be added to an already operationally intensive space, particularly when the market is facing a high volume of trading, such as during index rebalancing day. As both systems and people are stretched to their limits, it calls for a more sustainable solution to be put in place.

Ultimately, a settlement acceleration should drive progress and efficiency. While savings in margin costs are real and visible, the new pace of settlements should not translate into significantly increased operational costs and risks. To ensure a smooth transition, collaboration among market participants, FMIs and regulators is of the essence. Early consultations that include cross-border investors and intermediaries will help identify and address potential concerns and hurdles, giving investors more confidence in the market. Furthermore, the establishment of a centralised utility would standardise industry-wide processes to achieve economies of scale.

Boon-Hiong Chan, Industry Applied Innovation Lead, Head of Securities & Technology Advocacy APAC, Deutsche Bank has also provided additional insights

Image: iStock



A new post-trade ecosystem

Now that the US, Canada, Mexico and Argentina have joined India in the transition to T+1, settlement compression, an expanding investor community and the integration of digital assets into business as usual have changed the post-trade landscape. *flow's* Clarissa Dann reports on how its participants are responding

Approximately US\$115.1trn is held in global assets under management (AuM) – a number that has been steadily rising since 2003, with a few bumps along the way. In their July 2023 *Global Asset and Wealth Management Survey*, PwC noted that AuM dropped almost 10% below the 2021 high of US\$127trn, but that they expect a rebound by 2027 to US\$147.3trn.

Growth has been propelled by the burgeoning wealth of high net worth individuals and the mass affluent, as well as a pronounced shift to defined contribution retirement savings. In addition, regional accelerations are playing a part – “Asia-Pacific, along with frontier and emerging markets in Africa and the Middle East, will set the pace of growth in AuM,” notes the survey.

The meme stock rally in 2021, which prompted the initial shortening of the custody cycle (most recently seen in North and South America's shift to a T+1 post-trade settlement cycle), underscores

the increasing need for adaptive service providers as the investor community continues to grow rapidly. Drawing on insights from market infrastructure participants and coinciding with the industry's half-century milestone, this article provides a summary of the custody landscape.

Role of the custodian

Providers of global custody services are typically large banks or financial institutions, but what are the core

responsibilities of the global custodian? Broadly, they can be grouped as follows:

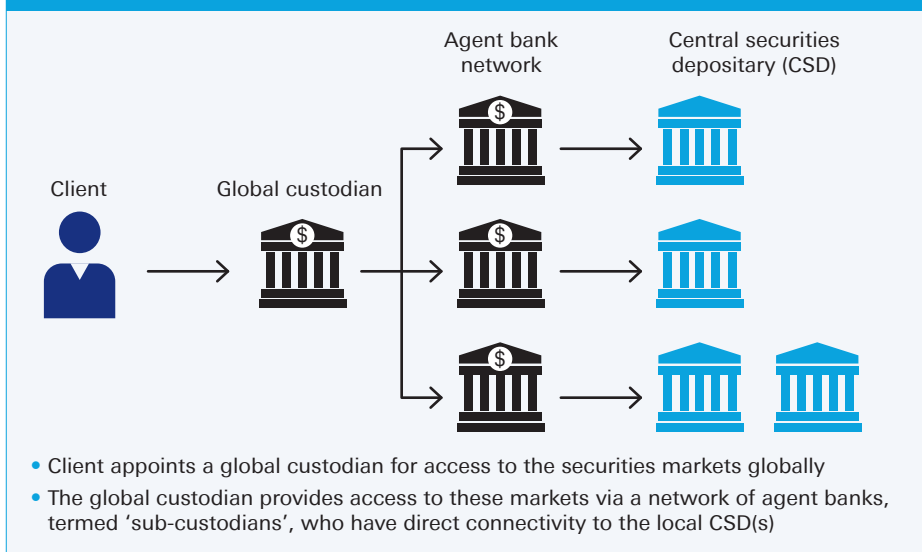
- Safekeeping of assets. This involves maintaining proper records of ownership, valuation, accounting and reporting of assets owned by a plan/fund sponsor or an institutional investor throughout the trade lifecycle.
- Trade processing. Tracking, settling and reconciling assets that are acquired and disposed of by the investor – either directly or indirectly – through delegated authority with an asset manager.
- Asset servicing. Maintaining all economic benefits of ownership such as income collection, corporate actions and proxy voting.

Therefore, as an asset servicer, a global custodian is responsible for administering investment-related activities, such as clearing and trade settlement, collection of income, proxy processing, corporate actions and cash movement activities. They provide these services on a global

“Anything from digital assets to tokenisation is all about collaboration

Dan Hickey, Global Head of Network Management, State Street

Figure 1: Summary of global and agent bank relationships



scale, both within the jurisdiction(s) in which the custodian is directly located and in other jurisdictions, ensuring assets are held securely and transactions are executed efficiently and accurately.

To facilitate access for investors into the securities markets worldwide, a global custodian works with agent banks (also known as 'sub-custodians') on the ground, to handle tasks in foreign markets that it is not directly located in such as safekeeping of assets, settlement, record-keeping, market access and advocacy. Agent banks therefore perform a variety of roles for their global custodian partners and are an important participant in the end-to-end custody lifecycle, providing direct market access and expertise to ensure compliance with local regulations (see Figure 1).

Strategic partners

Dan Hickey, Global Head of Network Management at State Street, reflected how, 10 years ago, one of the biggest factors when appointing an agent bank was price – but now it's the capacity to work as a long-term partner. At the Global Custodian panel session, 'The Future of Custody: Has the transition really taken place?' held in London on 30 May 2024, just after the US T+1 migration two days earlier, he said, "Coming out of T+1, anything from digital assets to tokenisation is all about collaboration. You really must pick your custodians carefully as they really are an extension of yourself. When something happens at the central securities depository (CSD), regardless of which market it is, we want that information to be back with our end client as soon as possible in real time – and the

only way we can do that is with our sub-custodians."

He went on to explain that such a partnership is "about having a really meaningful relationship where they [the agent bank] are investing in their product and they integrate it into our platform so that it is presented as a seamless extension of State Street, rather than a completely separate and standalone service provider to asset managers".

Hannah Elson, Global Head of Custody at J.P. Morgan, agreed, saying, "All of our models are very similar. From a network management perspective, it was all about best-in-class sub-custodians. Now, it's about a combination of staying power, the ability to invest and resilience in respect to concentration risk. Overlay that with geopolitics and the selection process becomes way more complicated."

She added, "We rely heavily on our sub-custodians for their market expertise, connectivity and resilience."

Clients can benefit from a strong interconnected partnership with their agent banks, says Kamalita Abdool, Head of Securities Services Americas and Global Custodian Coverage, Deutsche Bank. She continues, "Agent banks are embedded into the workflow, and bringing your agent into future strategic decisions allows them to challenge the custodian with creative approaches to problem solving. The agent bank has the benefit of seeing how others approach complex problems, they can leverage best practices and help the entire market drive consistency, scale and straight through processing. This is a continuous feedback loop, with better scale and margins it ensures adequate margin for ongoing investment." She adds that, "Tax and FX are good examples of how we can streamline and deliver a solution to multiple clients across multiple jurisdictions."

Digital asset capability

The digital asset and decentralised finance landscape is changing all the time, along with evolving regulatory frameworks ensuring the appropriate guardrails are in place, and this requires a degree of agility from custodians and agent banks. In the Deutsche Bank/Northern Trust white paper *The road to institutional DeFi* (June 2024), the authors explain how the application of decentralised finance (DeFi) for institutional use cases has the potential to create a new financial paradigm – one based on the principles of cooperation, composability and open-source code, and underpinned by open, transparent networks.



Future of Custody panel, left to right: Hannah Elson (J.P. Morgan); Justin Chapman (Northern Trust); Philippe Laurensy (Euroclear); Dan Hickey (State Street); Kamalita Abdool (Deutsche Bank); Jonathan Watkins (Global Custodian)

Image: Deutsche Bank

Justin Chapman, Global Head of Digital Assets and Financial Markets at Northern Trust, points out, “There are compelling use cases which promise to bring new asset classes and products to market.”

But he went on to explain at the May Global Custodian panel how providing global custody services for those assets means he still has to demonstrate to the regulator how he is able to retain control over assets while the technology “sits in some other firm” and “my code has to work in their shop”.

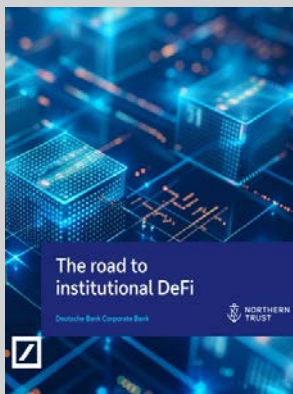
From the CSD perspective, Philippe Laurensy, Head of Product Strategy and Innovation at Euroclear, underlined the importance of alignment with regulatory frameworks and working with regulators to develop the new ecosystem.

On 29 May 2024, three of the largest financial market infrastructures (FMIs) – DTCC, Clearstream and Euroclear – announced a blueprint for establishing an industry-wide digital asset ecosystem to drive acceptance of tokenised assets. In their report *Building the digital asset ecosystem*, they set out the six principles that facilitate successful adoption:

- Legal certainty – ensuring operations comply with law.
- Regulatory compliance – encouraging alignment with regulatory frameworks.
- Resilience and security – developing robust infrastructure capable of resisting disruptions while protecting sensitive data.
- Safeguarding customer assets – implementing governance via smart contracts to manage assets securely.
- Connectivity and interoperability – facilitating transactions and flexible settlements across diverse networks.
- Operational scalability – striving for efficiency and cost-effectiveness through standardisation.

Commenting on the paper at the time, Laurensy said, “Our objective is to create innovative solutions that will address the evolving needs of our customers and drive industry advancements, which includes clients having the flexibility to create space on their balance sheets through tokenisation, therefore leading to new business opportunities.” He developed this further at the May Global Custodian panel, saying, “We need to focus on the pain points.” A huge amount of legal work will be necessary, Laurensy said. “We could argue that this [a digital asset] is

White paper: The road to institutional DeFi



The application of decentralised finance (DeFi) for institutional use cases has the potential to create a new financial paradigm – one based on the principles of cooperation, composability and open-source code; and underpinned by open, transparent networks. In this white paper, written jointly by Deutsche Bank and Northern Trust, the



authors dive into the history so far of DeFi and how it is likely to develop in the future, with a focus on how this might impact the institutional financial services

just a form of asset that is different; but because of crypto underlying it, some barriers are associated with digital assets and you might be hit with big capital requirements,” he reflected.

Platform resilience

Be it traditional finance or DeFi, technology is at the heart of the post-trade plumbing between global custodians and agent banks, the filament of trust straddling the buy-side community and financial market infrastructure. Global custody aggregators are driven by the tenets of providing their end-clients with richer real-time data using interoperable channels, integrated across the 100-plus capital markets to which they provide access. They must accomplish this at scale and, in parallel, adapt to changes driven by regulations, new client demands and an inherent need to digitalise the custody chain. “This is all in pursuit of faster account opening together with trade status transparency, rules-based corporate actions processing, multi-currency forecasting, query reduction

and instantaneous asset availability,” explains Mathew Kathayanat, Head of Securities Services Product Management, APAC at Deutsche Bank.

This shift is best seen in the ever-increasing collaboration with fintech firms, an imperative as core processing platforms are not best suited for constant retrofitting. Adding these fintech layers that combine critical data elements with cutting-edge digital tools, together with the cyber-resilience and scalability of centralised computational systems, is fundamental to the front-to-back operating model demanded by decision-makers in the front office to oversee risk, construct portfolios, attribute performance and view investment books of records – all in near real time.

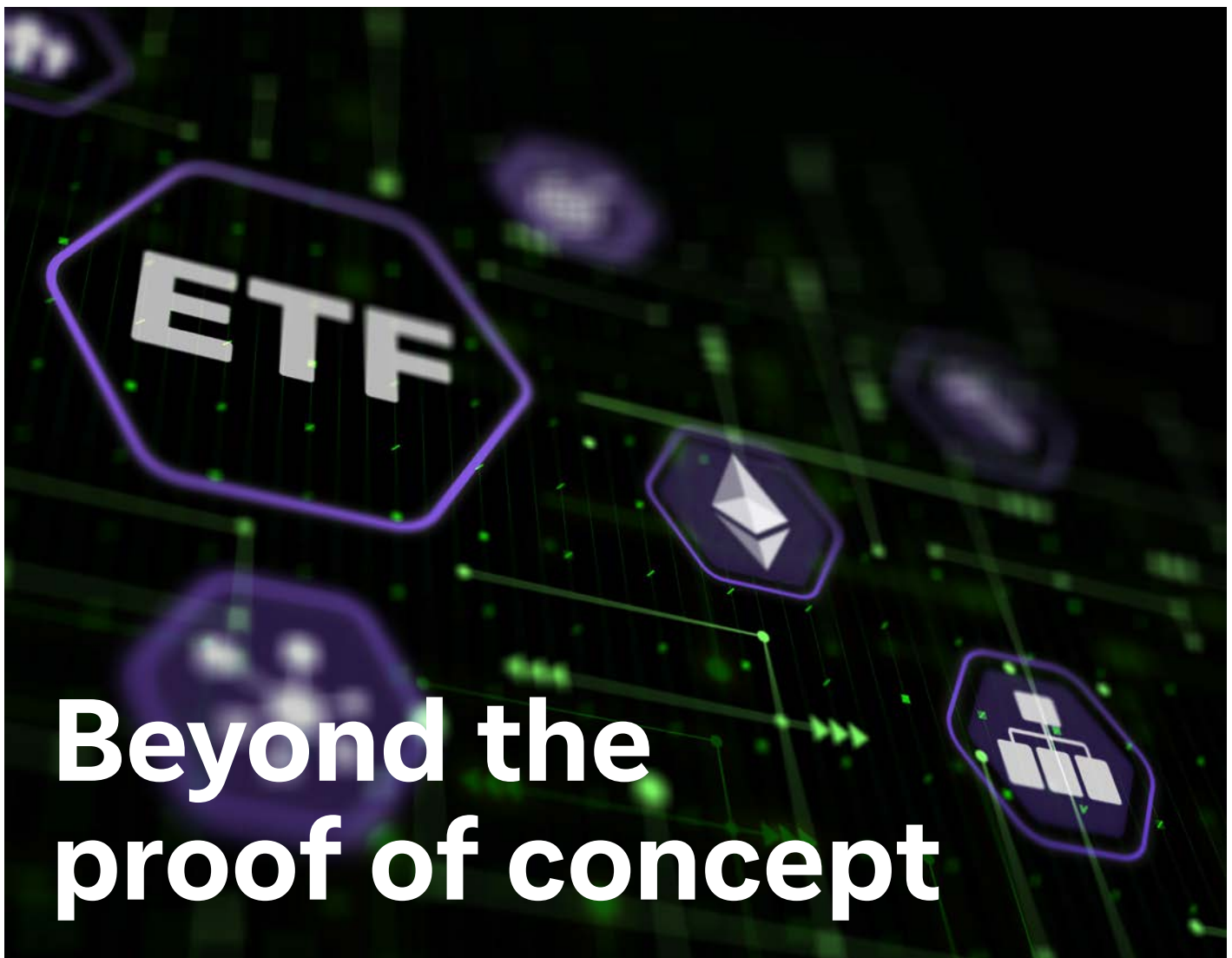
Application programming interfaces (APIs) and the Cloud are two pivotal enablers to the creation of end-to-end ecosystem connectivity, continues Kathayanat. The former integrates disparate programs to deliver datasets where they are required in real time, and the latter facilitates this by organising the panoply of data required by investors, accelerating its portability.

“Going forward, it will be *de rigueur* for agent banks to invest in the integrated ecosystem – the agent bank of tomorrow should be willing to engage in digital connectivity at a scale far beyond what’s implemented today, as the stakes are more than just commercial,” he concludes.

“
The agent bank of tomorrow should be willing to engage in digital connectivity

Mathew Kathayanat, Head of Securities Services Product Management, APAC at Deutsche Bank

This article draws on insights from the flow article ‘The future of custody – a paradigm shift’, published in January, and the panel session held on 30 May 2024, hosted by Global Custodian



Beyond the proof of concept

With spot Ethereum exchange traded funds (ETFs) approved by the US Securities and Exchange Commission, cryptocurrency democratisation is advancing. This regulatory clarity could spell lower costs for asset management service providers, explain Deutsche Bank digital asset strategists Sabih Behzad and Marion Laboure

While distributed ledger technology (DLT) itself is not new, its adoption in the financial services industry has evolved very rapidly over the past two years. Initially driven by consumers, interest from institutional players in digital assets has subsequently also surged. This presents a significant opportunity for financial institutions, not least because of the potential to deliver asset management services more quickly and at a lower cost.

Through accelerating digitisation, tokenisation of a multitude of assets and the emergence of native digital assets, it is clear the financial services ecosystem will need to evolve to support these new

and innovative business models. Moving beyond proofs of concept into adoption will require round-the-clock capabilities and enhanced risk management practices, and can only truly deliver its full potential through programmability and composability. Both of these key features allow new business models, facilitated through tokenisation (the conversion of rights to an asset into a distinct digital token on a blockchain network).

Maturing regulatory stance

Comprehensive regulation is on the horizon and the regulatory landscape has been maturing. For example, Markets in Crypto-Assets (MiCA), a pan-European

regulation, was signed on 31 May 2023 and applies from 30 December 2024. "By enhancing the protection of consumers and investors as well as financial stability, the regulation promotes innovation and the use of crypto-assets," says the European Parliament. MiCA aims to provide much-needed clarity and oversight for the crypto markets within EU borders.

In the US, holistic rules are still lacking, but regulatory authorities are beginning to take a more assertive stance and have prioritised penalties for lax controls relating to traditional finance firms. For example, 49% of all actions in the 2023 fiscal year made by the Commodity Futures Trading Commission (CFTC)

Image: iStock

involved digital asset commodities, a total of 47 actions. On 22 May 2024, the US House of Representatives voted in favour of the Financial Innovation and Technology for the 21st Century Act (FIT21), the first major crypto bill to pass the House. The resulting legislation would establish a regime to regulate the domestic crypto market, with defined consumer protections, involving the installation of the CFTC as the key regulator. The bill now awaits approval in the Senate.

We perceive regulation as a net positive for the industry as the clearer regulatory framework will drive further adoption and go some way towards addressing volatility.

Issuance

Significant progress has been made by global banks, with around US\$4bn in digital bonds issued. While the value is very small compared to traditional issuance, the size, investor base and sophistication of these issuances has been growing. Apart from the issuance of native digital assets, several platforms are being built to achieve financial resource optimisation with the existing asset inventory, such as HQLAx, which aims to

“
The technology that powers crypto is undeniably powerful

Sabih Behzad and Marion Laboure,
Deutsche Bank

provide collateral capabilities enhanced by usage of DLT. To support the complete digital assets and currencies lifecycle, a whole range of capabilities is required that includes digital asset custody, asset tokenisation, money tokenisation, trade and post-trade efficiency and crypto ecosystem products and services (see Figure 1).

Most banks have segregated their approach towards the crypto ecosystem or DLT-based financial markets ecosystem, with almost all pursuing the latter and some with exposure in the former. Whatever the appetite for this asset class, the technology that powers crypto is undeniably powerful and we are seeing it make significant inroads into

business – such as bitcoin ETFs being offered by highly regulated large-scale financial institutions. Collateral mobility through tokenisation is another key driver and this has led to recent announcements by major financial institutions of tokenised money market funds that seek to put to work high-quality liquid assets (HQLAs) that would otherwise be under-utilised. The potential of other new investment classes and real-world assets through tokenisation is just the beginning.

Crypto's democratisation journey

Despite efforts to clean up the crypto market and the implementation of new regulations like the EU MiCA Regulation, Bitcoin's and Ethereum's 30-day volatility still surpasses that of other major asset classes – in fact, volatility in the crypto market has increased recently in the period leading up to approval of both the spot Bitcoin and Ethereum ETFs.

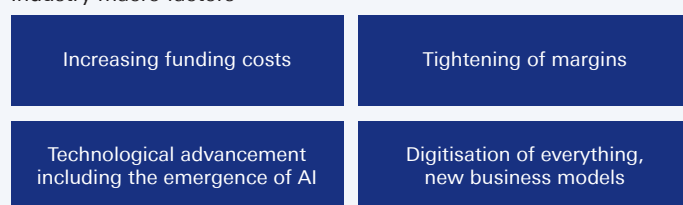
On 23 May 2024, the Securities and Exchange Commission (SEC) approved all eight ethereum spot ETF applications: Ark Invest, VanEck, Grayscale, BlackRock, Bitwise, Invesco, Franklin Templeton and Fidelity. The SEC has since approved the final S-1 forms (required to publicly



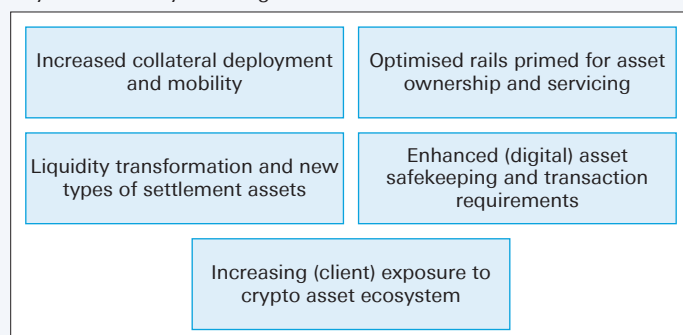
Figure 1: Industry macro factors and digital asset trends

Industry macro factors are leading to the development of new financial rails promising cost reduction, transparency, efficiency and innovation

Industry macro factors



Key trends/catalysts in digital assets



Digital asset capabilities required

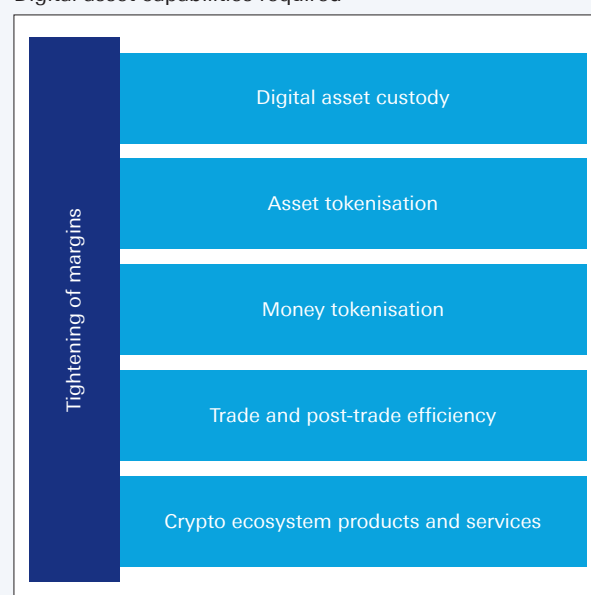
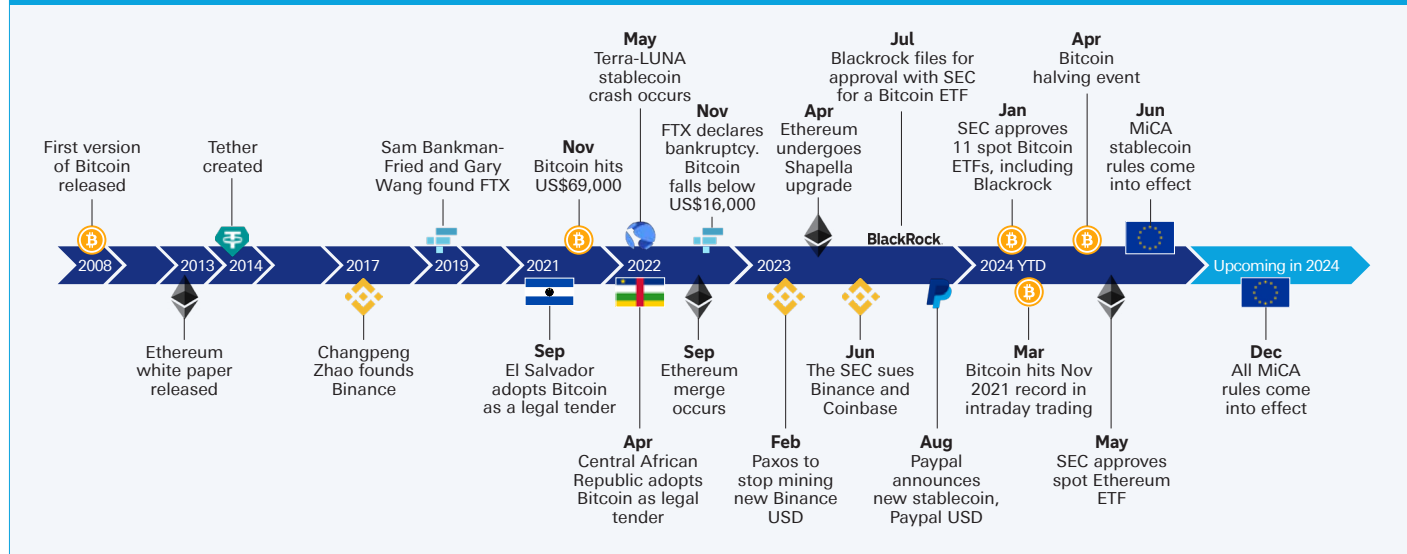


Figure 2: Timeline of cryptocurrency ETF developments



offer the new securities), enabling trading from 23 July 2024. This will be the first spot ethereum ETF available in the US for retail investors, following the approval of the spot bitcoin ETF in January. Bitcoin prices have surged 55% since then, and hit an all-time high of US\$73,805 in March.

The crypto world is gradually moving towards greater institutionalisation as traditional financial players enter the market, and we expect prices to remain elevated. Upcoming spot ETF and exchange-traded product (ETP) approvals could drive further adoption by allowing for direct crypto exposure within the traditional financial system.

Cross-border payments, tokenisation and Project Agorá

The Bank for International Settlements (BIS) has long championed innovation in financial markets and in particular has written extensively on cross-border payments, tokenisation and central and commercial bank money. Beyond this, it has overseen several important projects, often run through its innovation centres, focusing on a variety of use cases. These have involved both private and public participation.

Project Agorá is one such recently announced initiative that seeks to showcase the benefits of tokenised cross-border payments while maintaining the two-tier financial ecosystem of today (commercial bank money transactions

“The crypto world is gradually moving towards greater institutionalisation

Sabih Behzad and Marion Laboure

backed by central bank money). Through the involvement of seven central banks (Bank of England, Federal Reserve, Bank of Japan, Bank of South Korea, Bank of Mexico, Banque de France and Swiss

National Bank), all five major currencies and up to around 30 commercial banks and private sector institutions, this is a major and significant industry undertaking. It is anticipated that a platform will be developed to simulate such transactions, with the possibility of moving into full production. Such a platform could potentially lead to the establishment of a new financial market infrastructure running new critical banking rails.

Sabih Behzad is Head of Digital Assets and Currencies Transformation at Deutsche Bank, and Marion Laboure is a Senior Strategist at Deutsche Bank Research

Regulatory outlook in securities services



This issue of the *Regulatory outlook in securities services* white paper provides a deep dive into regulations impacting the post-trade landscape. It covers accelerated settlement, digital assets, artificial intelligence, and client asset protection across various regions. The authors begin with a thorough examination of the global forces driving shorter settlement cycles from theory to reality. From the pioneering efforts across Asia, centred in China and India, to the more recent implementation of T+1 settlement in the US and Canada, in May 2024, they take a closer look at this paradigm shift



Trust and Agency Services

Case studies illustrating investor engagement in the pharmaceutical industry, US green energy investments and inflation's impact on the CLO market



Investing in AstraZeneca

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Higher for longer

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In figures

AstraZeneca revenues
US\$45bn (FY 2023)
US\$80bn (forecast 2030)

Source: AstraZeneca

AstraZeneca and tomorrow's therapeutics

Growing shareholder value and delivering medicines where they are needed most is a tightrope that AstraZeneca has walked for a while. *flow's* Clarissa Dann catches up with Andy Barnett, the Anglo-Swedish group's Head of Investor Relations, about what it takes to maintain investor loyalty over the long term

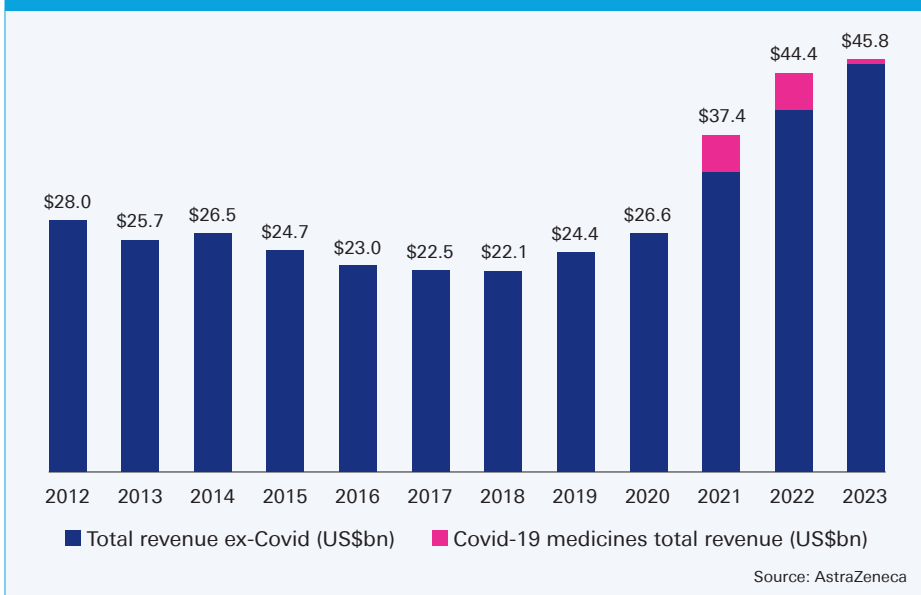
When AstraZeneca held its first Investor Day since 2014 at its headquarters in Cambridge on 21 May 2024, CEO Sir Pascal Soriot confirmed that the global pharmaceutical company had hit its target set 10 years ago – of generating annual revenues greater than US\$45bn by 2023. But this is not a company to sit on its laurels. “Now we have a new ambition to deliver US\$80bn in total revenue by 2030, with sustained growth thereafter,” Soriot told investors. The company, he added, “is on track to deliver mid-30s per cent core operating margin by 2026”.

He explained how the company would do this through its core therapy areas of

Oncology, Biopharmaceuticals (including Cardiovascular, Renal and Metabolism, and Respiratory and Immunology) and Rare Disease, as well as the launch of 20 new medicines by the end of the decade.

While AstraZeneca has been more widely associated with vaccines during the Covid-19 pandemic, this is not, as Head of Investor Relations (IR) Andy Barnett says, its core business – and did not grow the bottom line. “We mostly did this because we wanted to try and help and it was almost entirely done on a not-for-profit basis – most of our vaccines were delivered to emerging markets,” he adds. “It was a time when we all had to roll up our sleeves and the

Figure 1: Delivered on ambition to achieve >US\$45bn total revenue by 2023



Following a *flow* interview with Barnett in May 2024, this article provides an update to the case study published four years ago (see *flow*, H1 2020).

Relentlessly curious

Barnett stepped into his global role as Head of IR in June 2022, having held franchise head roles at AstraZeneca since arriving from Roche in 2019. As an expatriate Canadian growing up in Dubai, Barnett studied at British schools in the Middle East before returning to Canada to finish his education, where he read biochemistry at McGill University in Montreal. The career path leading from biochemistry, via various business roles in pharma to IR, might not seem an obvious one, but his relentless curiosity got the better of him. “I was interested straight away because it was something I hadn’t done before, and I could see it as being central

to how the company organises itself and communicates,” he reflects.

“On the investor side, while I had managed businesses, I didn’t have a finance background – so there was quite a bit I had to learn. On the other hand, I came to realise many investors didn’t only need that from me. Most put greater emphasis on wanting to understand the business strategy, the R&D pipeline and the potential value of our medicines, which I was able to help with straight away.”

Communicating with investors

A visit to the company’s investor relations page provides a practical guide to the pharma business model and what investors need to understand in terms of how long it takes for initial research and development investment to result in an approved, safe medicine (see Figure 2). Given the length of the investor journey, the specific risk profile of the pharmaceutical industry, the competitive landscape and the potential for artificial intelligence (AI) to support with research and development, there is no shortage of investor touchpoints in need of the right sort of communication.

Communicating the revenue opportunity to investors is a key part of the job for Barnett and team, with an active schedule of interactions through various conferences. “I hear often that our business is complex, and I view it as our job to communicate the nuances of the sector, and the particular growth

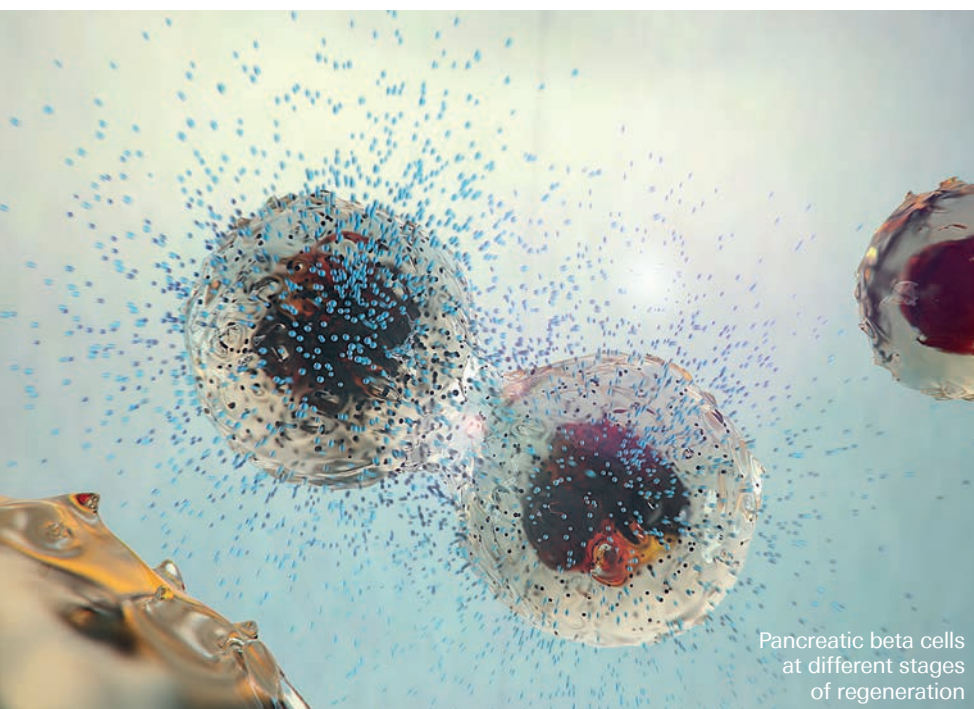
overall learning point from that period was an identification of what timelines could be squeezed and what could not.” The experience also reinforced that, “partnership was key, as it was fundamental to building out a global vaccine manufacturing network that did not previously exist”. Indeed, continues Barnett, “we managed to achieve this in record time. We also built strong relationships with key stakeholders along the way.”

These learnings have been taken into the company’s wider strategy of balancing innovation and market access while improving access to therapies and patient health in lower middle-income countries – and helping drive long-term sustainable growth in the process. While the company has invested in emerging markets for some time, “these markets are an increasing feature of where the growth in our business is coming from,” says Barnett. Emerging markets are now delivering strong income growth for the company – accounting for 29% of total revenue (as of Q1 2024).

Image: AstraZeneca

“Emerging markets are an increasing feature of where the growth in our business is coming from

Andy Barnett, Head of Investor Relations,
AstraZeneca



Pancreatic beta cells
at different stages
of regeneration

profile we have, to investors,” he says. Stakeholders are interested in the risk profile of a company – and the more this can be diversified through different therapy areas and geographies, the more attractive the investment can become. It is not, for example, uncommon for one region to experience pricing pressures or unhelpful changes in regulation that can impact a business for a period, while at the same time other regions are thriving.

AstraZeneca has five strategic research and development hubs located in Cambridge, UK; Gothenburg, Sweden; Shanghai, China; Gaithersburg, Maryland (USA); and Boston, Massachusetts (USA).

To effectively manage communication with existing investors and build relationships with new ones, the IR team provides on-the-ground support across these geographies. “This helps us manage tight time zones and ensure we are being responsive to investor questions,” says Barnett.

Internally, the IR team also works closely with several teams to develop clear and precise external communications for investors. “The first is our global financial reporting team, which makes sure that we are complying with all necessary reporting standards and that the statements we make are fully justified based on their observations. These efforts are supported and supplemented by the input from our auditors, who do at least two deep dives every year on our reporting.”

On top of this, the executive team, comprising CEO Sir Pascal Soriot and CFO

Aradhana Sarin, are intimately involved in and engaged with the process. “They are very interested in two things: helping to make sure that they play a key part in working with investors so that they understand the business well, and at the same time collecting insights and understanding from the market about the company strategy. And they really do put a lot of time into doing that,” Barnett adds.

He confirms that the top 30 shareholders hold around 50% of the shares, with the profile having been “largely stable”. “This probably tells you that our investors have confidence in not just the near-term trajectory but the longer term,” and “there is excitement about the pipeline opportunities,” he adds. The share price has grown from £30 around 10 years ago to more than £120 on the London Stock Exchange at the time of writing.

Future-proofing results

At the Investor Day event, the new strategy was set out in three stages,

“Our investors have confidence in not just the near-term trajectory but the longer term

Andy Barnett

“today, tomorrow and the day after”. The first stage refers to the company delivering commercial performance from its existing portfolio of medicines and upcoming launches this year and in 2025. Over the next 18 months AstraZeneca anticipates more than 40 phase three or late-stage study read-outs, which will be important catalysts for the company’s future growth.

The second stage is about delivering on the late-stage programme of studies for new medicines and extensions for existing medicines until 2030. During the ‘Delivering Shareholder Value’ presentation at the Investor Day, CFO Sarin explained, “Many of our medicines – for example in respiratory – are still very early into their lifecycle and have 10-plus more years to go. So, in our current portfolio there’s the existing medicines with the existing indications, and there’s existing medicines with lifecycle management opportunities.”

The final stage is where AstraZeneca is investing in transformative new technologies and platforms with potential to shape the future of medicine. For example, it is looking to further enhance how it already uses AI in research and development to better transform the understanding of disease biology, driving earlier diagnosis and helping to create the next generation of medicines.

“We’re trying to think strategically along these lines because in our industry there’s a long lead time,” Barnett explains. “You’re making strategic bets on new technologies and platforms that you think have the potential to make a big difference, but you’re doing it quite far out.

“So, you often find that where pharmaceutical companies do well or don’t do well is not a result of their near-term effects. It’s often a result of the decisions they’ve taken many years ago, so they’re now seeing the results of those decisions pay off or not.”

As it continues to grow across all therapy areas, AstraZeneca also announced that it will continue to decouple its carbon emissions from its increase in revenue. By 2026 the company will be carbon zero for Scope 1 and 2 emissions, and by 2030 will have halved its Scope 3 emissions on the way to science-based net zero by 2045, at the latest.

American depositary receipts

In September 2020, AstraZeneca transferred the listing of its American Depositary Receipts (ADRs) from the New York Stock Exchange to the Nasdaq

Global Select Market, with the aim of broadening its shareholder base and becoming more easily accessible. ADRs are dollar-denominated equity instruments that represent ownership of certain equity securities (the 'underlying shares') that are issued and traded in a company's home market(s).

"We wanted to be in the NASDAQ 100 because we were among companies that were highly active and with whom we shared similar characteristics," says Barnett. It has taken a few years to tease out the impact of this listing because not only did AstraZeneca make the move during the pandemic, but the company also completed the Alexion Pharmaceuticals acquisition shortly afterwards – deepening its Rare Diseases portfolio in the US. Barnett confirms that AstraZeneca sees the programme as "attractive to our US shareholders" and that it remains a company priority to increase the US shareholder base.

Deutsche Bank is the depository bank for AstraZeneca's ADR programme, which was first established in 1999 following

The AstraZeneca IR team... expertly navigated the company's transformation

Daniel Clark, Global Head of Depository Receipts and Head of Trust and Agency Services, APAC, at Deutsche Bank

the merger of Astra AB and Zeneca Group PLC. The ADR programme has achieved industry recognition by winning the 'Best Depository Receipt Programme' award from *EMEA Finance* in 2020 and 2021.

The bank supports the company with ensuring that cross-border ADR activity is conducted seamlessly, the processing of dividend payments or other entitlements occurs on a timely basis, complex corporate actions are executed efficiently and the AGM proxy process for ADR holders is coordinated. In addition, the IR

advisory team provides useful support on targeting investors, help with navigating the financial markets and the provision of insights on trends, all of which is viewed as an important part of the dialogue, says Barnett.

"The AstraZeneca IR team led by Andy Barnett expertly navigated the company's transformation into a science-based biopharmaceutical leader," reflects Daniel Clark, Global Head of Depository Receipts and Head of Trust and Agency Services, APAC, at Deutsche Bank. "Their focus on keeping investors and analysts fully updated on business progress and the pipeline of new medicines has been exemplary in terms of investor relations best practice and translating into equity market receptivity."

He concludes, "The AstraZeneca – Deutsche Bank ADR partnership demonstrates our effectiveness to complement the company's ambition to grow and broaden the US investor base, whilst executing one of the largest M&A transactions using ADRs as an acquisition currency in 2021."

Figure 2: Summary of the medicine business model



Research and development phases – duration: 5–15 years

1. Undertake scientific research to identify potential new medicines.
2. Preclinical studies in laboratory and animals to understand if the potential medicine is safe to introduce into humans.
3. Phase I trials with small groups of healthy human volunteers (small molecules) or patients (biologics) to understand how the potential medicine is absorbed into the body, distributed and excreted.
4. Phase II trials on small- to medium-sized groups of patients to test effectiveness and tolerability of the medicine and determine optimal dose.
5. Phase III trials on a larger group of patients to gather information about effectiveness and safety of the medicine and evaluate the overall benefit/risk profile.
6. Seek regulatory approvals for manufacturing, marketing and selling the medicine.

Launch phase – duration: 5–15 years

7. Launch new medicine while continuously monitoring, recording and analysing reported side effects.
8. Post-launch R&D to further understand the benefit/risk profile of the medicine and lifecycle management activities to understand its full potential.

Post-exclusivity – duration: 20+ years

9. Patent expiry and generic medicine entry.

Source: AstraZeneca

Greening the night with the SunZia Wind and Transmission projects

US renewable energy company Pattern Energy is transforming the energy supply for three million Americans with its SunZia project. With insights from the company's Project Finance and Corporate Development Director Carlyne Mickle and Deutsche Bank's Trust and Agency Services team, *flow*'s Clarissa Dann tracks progress so far



Pattern Energy's SunZia HVDC transmission line under construction

Photo courtesy of Pattern Energy

Power-sector decarbonisation is “important because efficient electrification, when paired with clean electricity, can decarbonise large parts of the transportation, buildings and industrial sectors”, said the US Department of Energy in its May 2023 report, *On the path to 100% clean energy*.

Growing renewables installations across the US

Although natural gas is, and will continue to be, the largest source of electricity generation, new installations of generating capacity “support the increase in our renewable generation forecast”, said the Environmental Investigation Agency (EIA) in its *Short-Term Energy Outlook* (January 2024).

One of the contributors to this North American acceleration in renewables growth is Pattern Energy Group LP – a fully integrated developer headquartered in San Francisco and one of the world’s leading renewable energy generation, transmission and energy storage companies, with operating footprints in the US, Canada and Mexico. The company was founded in 2009 and operates around 30 renewable energy facilities with a capacity of around 6,000MW across the region, including Western Spirit, a 1,050MW wind project in New Mexico built in 2021. This article provides an in-depth profile of SunZia, the largest renewables project in the Western Hemisphere currently under construction.

Pattern Energy’s Western Spirit Wind project, New Mexico, completed in 2021



Photo courtesy of Pattern Energy

SunZia project fundamentals

The scheme comprises SunZia Wind, a project of approximately 3,515MW in Torrance, Lincoln and San Miguel Counties in New Mexico, and SunZia Transmission, an approximately 550-mile, 525kV high-voltage direct current (HVDC) transmission

line between central New Mexico and south-central Arizona. SunZia Transmission will deliver clean power from the SunZia Wind project which, says Carlyne Mickle, “has a generation profile which is evening peaking and that complements abundant solar generation available across the



Figure 1: US annual electric generating capacity (2018–2025)

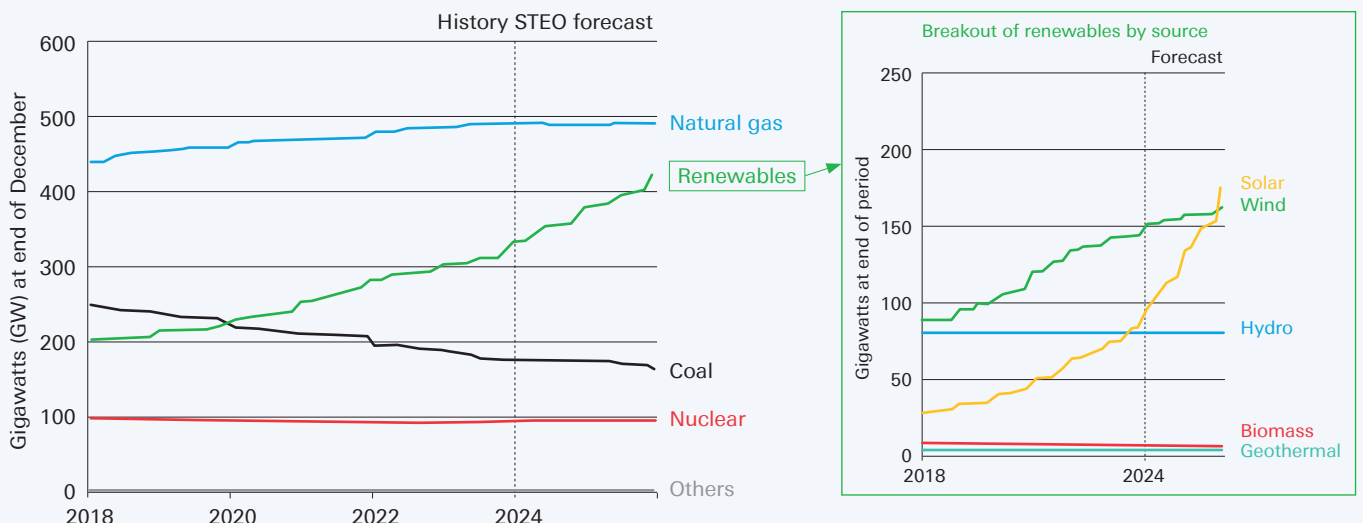


Figure 2: SunZia locations

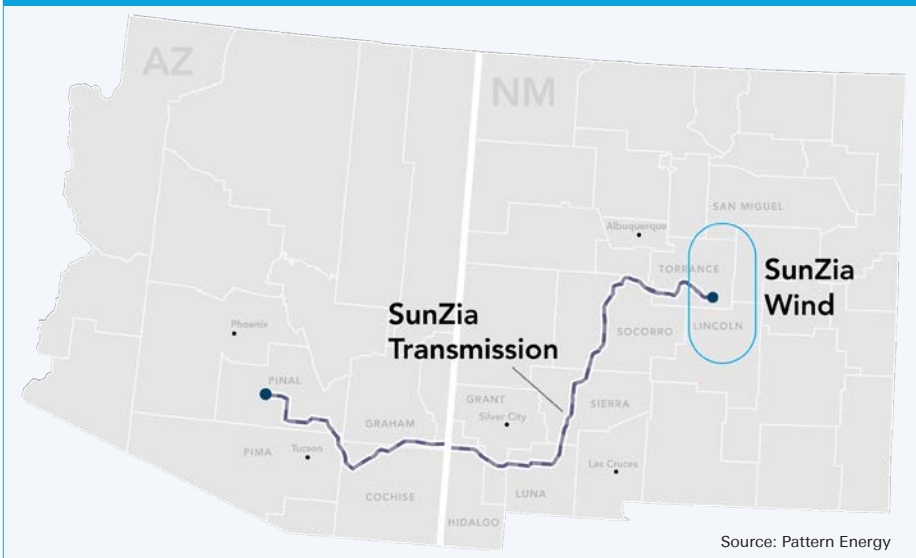


Figure 3: Western market 'duck curve'

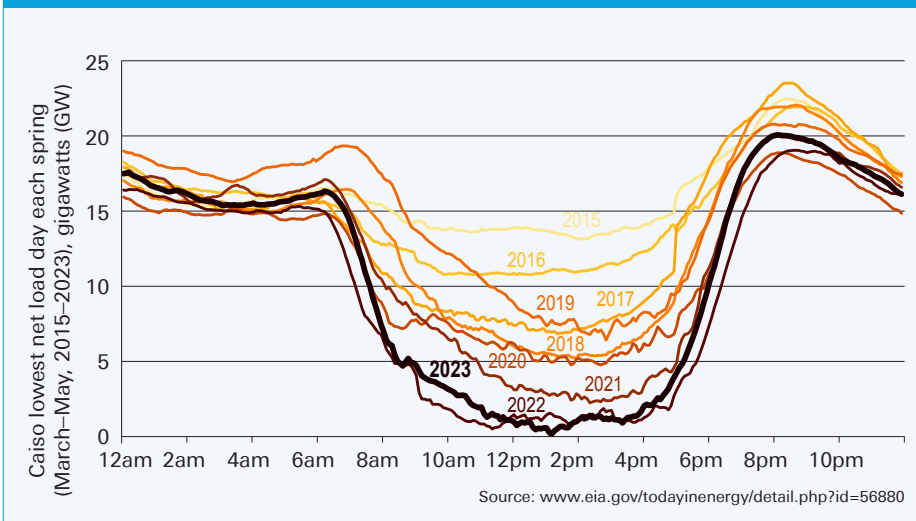
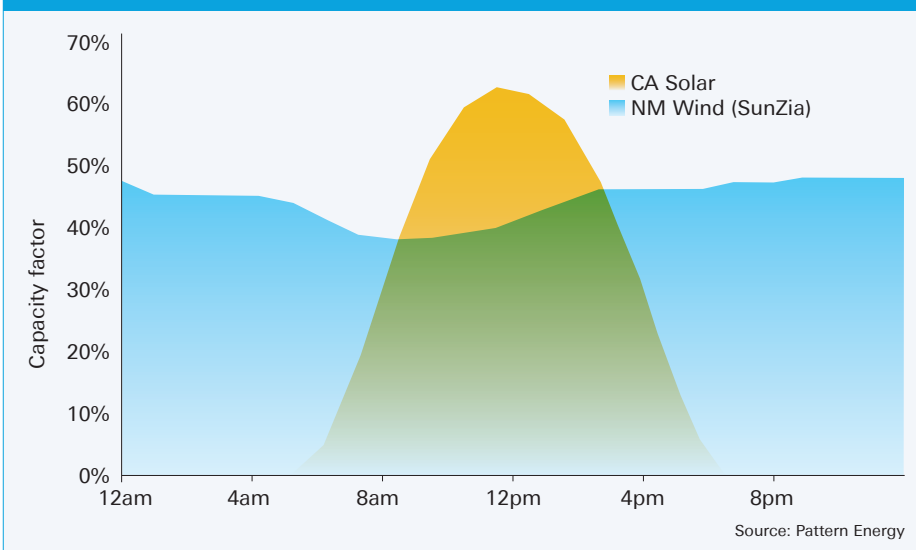


Figure 4: Balancing wind and solar



western United States and supports 24/7 load matching targets”.

Mickle goes on to explain how electricity grid operators must match supply into the grid with demand peaks and troughs during the day and night and, while integrating carbon-free generation, how the “duck curve” (see Figure 3) – which captures the mismatch between demand and solar generation – has been deepening in California, with the approximately 47GW of solar capacity installed in the state.

The EIA explains, “Extreme swings in demand for electricity from conventional power plants from midday to late evenings, when energy demand is still high but solar generation has dropped off, means that conventional power plants (such as natural gas-fired plants) must quickly ramp up electricity production to meet consumer demand. That rapid ramp-up makes it more difficult for grid operators to match grid supply (the power they are generating) with demand in real time, and this has become more pronounced in 2024, creating a risk of grid instability.” What the SunZia project does is “green the night” by connecting critical evening ramping and nighttime-producing wind generation to displace fossil fuels and fulfil the need for green energy in Arizona and California (see Figure 4).

In the paper, ‘When should the off-grid sun shine at night? Optimum renewable generation and energy storage investments,’ published in *Management Science* (September 2023), the authors point out, “While solar power has risen as a sustainable and less costly option, its generation is variable during the day and non-existent at night. Thanks to recent technological advances, which have made large-scale electricity storage economically viable, a combination of solar generation and storage holds the promise of cheaper, greener and more reliable off-grid power in the future.”

While battery storage installations represent a step towards 24/7 load matching in the western states, SunZia goes beyond and offers resource diversification (New Mexico wind vs. solar or in-state wind), which is valuable especially during emergency events, and scale. Both make the SunZia product very attractive to electricity buyers who have very strict procurement mandates. In addition, recent grid blackouts in California have exacerbated the need for new high-capacity and reliable transmission capacity like SunZia Transmission to support interregional reliability, Mickle adds.

SunZia benefits

US Government support has been consistent for electricity projects like these. The Department of the Interior's Bureau of Land Management approved the project in May 2023, completing a long review process. It is seen as another milestone towards lowering energy costs, preventing power outages in the face of extreme weather and achieving President Biden's goal of a 100% clean electricity grid by 2035.

"The SunZia Transmission Project will accelerate our nation's transition to a clean energy economy by unlocking renewable resources, creating jobs, lowering costs and boosting local economies," said Secretary of the Interior Deb Haaland.

Indeed, at its peak, SunZia will employ 2,000 construction workers, and more than 100 people once in operation. In addition, the project is expected to generate US\$20.5bn in total economic benefits, "including direct, indirect and induced economic benefits", according to an independent study. Pattern Energy assessed that SunZia will supply three million Americans with clean power each year, the equivalent of taking 3GW worth of coal plants offline or removing around three million cars from the road.

In addition, SunZia's rigorous environmental siting process has resulted in optimal access to wind with minimised potential environmental impacts, leading the National Audubon Society (which is dedicated to conserving birds and their habitats) to praise SunZia for its environmental mitigation initiatives and promoting it as a case study for how future transmission projects should be developed.

Finding partners for SunZia

On 27 December 2023, Pattern announced the closing of around US\$11bn financing to support the construction of the SunZia project, including a US\$8.8bn construction loan and letters of credit facility provided by 17 financial institutions and a US\$2.25bn tax equity term loan facility from five institutions.

The financings were attractive to lenders on the lookout for suitable sustainability-linked projects to allocate balance sheet to. Beyond the project's strong fundamentals, having a top-tier and experienced sponsor, with an impeccable track record in the industry and on the capital markets, was critical to reaching financial close.



Having a reliable and experienced agent is fundamental to ensure construction goes smoothly

Carlyne Mickle, Director of Project Finance and Corporate Development, Pattern Energy Group LP

With a deal of this size and with such a large number of participants, the appointment of the right agent is key. Following a competitive request for proposal (RFP) process, Deutsche Bank's Trust and Agency Services (TAS) team was selected to act as collateral agent and depositary bank for the approximately US\$8.8bn of construction and term facilities. In addition, the TAS team is also acting as administrative agent, collateral agent and depositary bank on the holding company facility to support initial equity capital for the project. Provision of a full suite of third-party agency services for this complex multi-facility financing, along with the capacity to process up to 400 payments a month and being well regarded by the participating lenders, were among the deciding factors. "The TAS team worked

very hard, with fast turnaround time from the RFP through to financial close, and supported an on-time closing. We appreciated Deutsche Bank's flexibility and commitment all along. Having a reliable and experienced agent is fundamental to ensure construction goes smoothly, especially for such a large project," said Pattern's Mickle.

In the various roles as third-party agent on an infrastructure project, the bank's TAS team "assigns a dedicated team of project finance client service specialists who manage all the agency roles for the project from the draft documentation review phase to the closing and throughout the lifetime of the deal, handling draws and payments, tracking and distributing compliance reports as well as managing interactions between the borrower, lenders and external consultants," explains Thalia Delahayes, Head of Project Finance and Loan Agency, Americas at Deutsche Bank.

Production capacity ramp-up

Once in operation, SunZia will materially change Pattern – in that production capacity will increase by approximately 50%. "In parallel, Pattern continues to develop its 25+GW pipeline, which, beyond wind, solar, battery energy storage systems and transmission, also includes green fuels. We will continue to approach project finance and tax equity/transferability markets to finance these projects," concludes Mickle.

On 1 September 2023, the company announced that it had started construction on its SunZia Transmission project in Corona, New Mexico. Having received the Notice to Proceed from The Bureau of Land Management, the company welcomed Secretary of the Interior Deb Haaland to the site's "groundbreaking ceremony" that day



Photo courtesy of Pattern Energy



CLOs and “higher for longer”

As the US, EU and UK central banks tackle persistent inflation with a “higher for longer” approach to interest rates, what impact is this restrictive monetary policy having on the collateralised loan obligation (CLO) market? Drawing on insights from Deutsche Bank’s Research and Trust and Agency Services teams, *flow* explains the asset class’s key health indicators

Like other parts of the securitised market, CLOs provide needed liquidity to the capital markets by buying and securitising leveraged loans, which are granted to high-growth but credit-sensitive borrowers with a BBB rating or lower. At more than US\$1trn, the CLO market offers an ample funding source for corporations to access while providing pension funds, insurance companies and asset managers with a compelling investment product that offers multiple layers of risk exposure and associated yields.

“Borrowers are performing and adapting to the elevated rate environment of the past year

Phong Lam, Global Head of CLO
Product Strategy, Deutsche Bank

However, CLOs, like the underlying leveraged loans that the structure bundles up, are floating-rate in nature. When interest rates rise, the borrowing rate tied to the loan rises alongside them. This structural element is designed to insulate investors from interest rate risk – yet the feature is a double-edged sword as it increases borrowing costs for corporations during periods of heightened interest rates, which is what most western markets have experienced since early 2022. (See ‘Collateralised loan obligations explained’ in *flow*, August 2022, for further context to the CLO asset class.)

Image: iStock

Signs of stress, but no signs of breaking

Although some commonly held borrowers in the CLO market have either experienced a ratings downgrade or undergone a distressed exchange so far in 2024, the underlying health of the leveraged loan and CLO markets remains broadly constructive despite the high-rate environment, according to Deutsche Bank CLO strategists Conor O'Toole and Jamie Flannick in their report *US CLOs – some signs of stress, but no signs of breaking* (February 2024). This is due to many companies being able to successfully undertake cost rationalisation initiatives to maintain bottom line health. Additionally, many borrowers have been able to successfully refinance or amend and extend their debt, moving the maturity wall of the leveraged loan borrowers into 2028.

Furthermore, the default rate for CLO assets (loans and bonds held by CLOs) remains relatively range bound. After reaching 3.3% in January 2024, the average percentage of defaulted assets in US CLOs across manager portfolios moderated to 3.1% at the end of the first quarter (Q1).

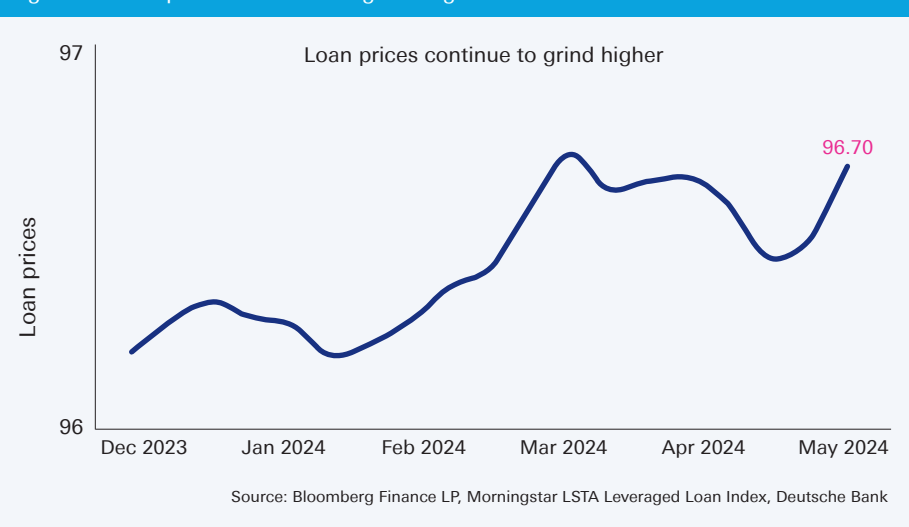
A few trends in the loan market are providing support for this decline. As at the beginning of May 2024, the trailing 12-month (TTM) ratio of loan downgrades to upgrades in the LLI (US leveraged loan index) continued to moderate from a local peak of 2.54 in July 2023 to 1.94, its lowest level in more than a year. Second, loan prices continued to march northward after bottoming out at 92.9 at the end of May last year, reaching 96.7 a year later. And finally, in the three months to May this year, loan maturities began to extend past 2028, with US\$92bn of financing having a maturity date of 2029 or later.

The Deutsche Bank CLO research team expects these loan trends to continue being supportive in the near term, yet they are also mindful of the impact “higher for longer” rates have on the tail of leveraged finance borrowers. Considering this, they have lowered their CLO portfolio default rate forecast to 4.2% by year end, an 80bps drop from their initial default forecast of 5% in March.

A flywheel effect

Underlying collateral health is one factor driving one of the most robust years in terms of deal activity in the CLO 2.0 era. As Deutsche Bank strategists noted in the report *A flywheel effect* (March 2024), when taking a step back and looking at

Figure 1: Loan prices continue to grind higher



the CLO market holistically, a pattern is emerging – there are several moving parts currently driving deal activity and the linkages between these moving parts are beginning to reinforce each other, creating a flywheel effect.

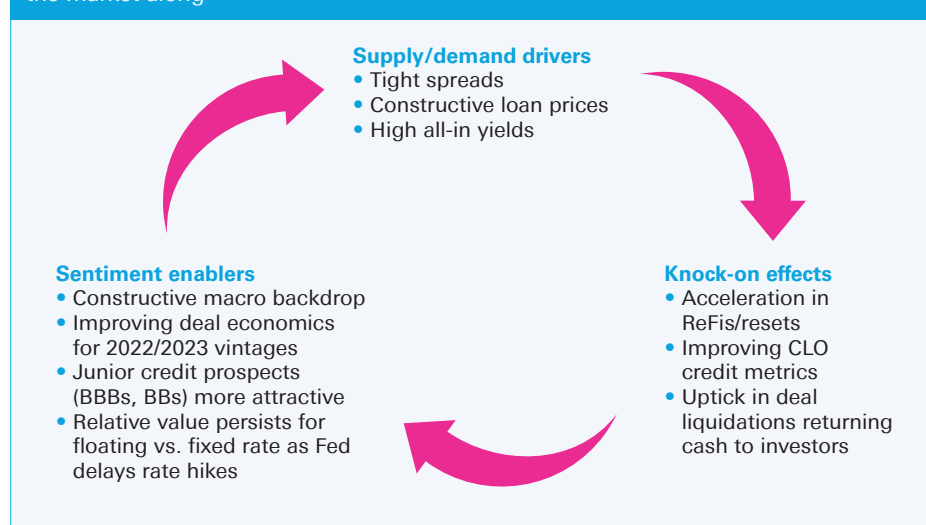
The same underlying drivers of CLO deal volume – tight spreads, high all-in yields, constructive loan prices – are producing positive knock-on effects: improving market value and credit portfolio metrics, an acceleration in ReFi/reset activity and an uptick in deal liquidations.

These in turn are further boosting investor sentiment for the market, and ultimately driving more demand when

combined with a constructive macro backdrop in which GDP remains relatively robust and unemployment relatively low, amid a broadening of the investor base as US domestic banks return as active buyers.

The interplay of these moving parts is creating a circular tailwind that is pushing the market along at pace and should help to sustain a constructive level of deal volume in the quarters ahead. But several factors could potentially disrupt this and check the market's current momentum. Disruptors such as geopolitical risk and US Federal Reserve interest rate uncertainty, both of which remain high, have the potential to

Figure 2: A flywheel effect – multiple factors have created a virtuous circle, driving the market along



cause spreads to widen and loan prices to soften. However, until either of these or another market risk flares up, the momentum that the CLO market has built up throughout Q1 looks durable.

Guiding higher

The core drivers of this virtuous circle are expected to persist and, as a result, the Deutsche Bank Research team raised their full-year 2024 new issue forecast in the US to US\$145bn from a previous target of US\$115bn at the start of the year, and to €38bn in Europe.

If these forecasts were to materialise it would amount to the second-largest year ever for both European and US CLO new issues, just shy of 2021's €39bn and south of 2021's record-setting US\$187bn. After two years of declining growth, these levels would symbolise a sharp bounce-back in deal activity and point towards a market that has fully normalised from an extended bout of elevated interest rates and restrictive monetary policy. See the Deutsche Bank Research reports: *European CLO Monthly* (April 2024) and the *US CLO Weekly 'Guiding higher'* (March 2024).

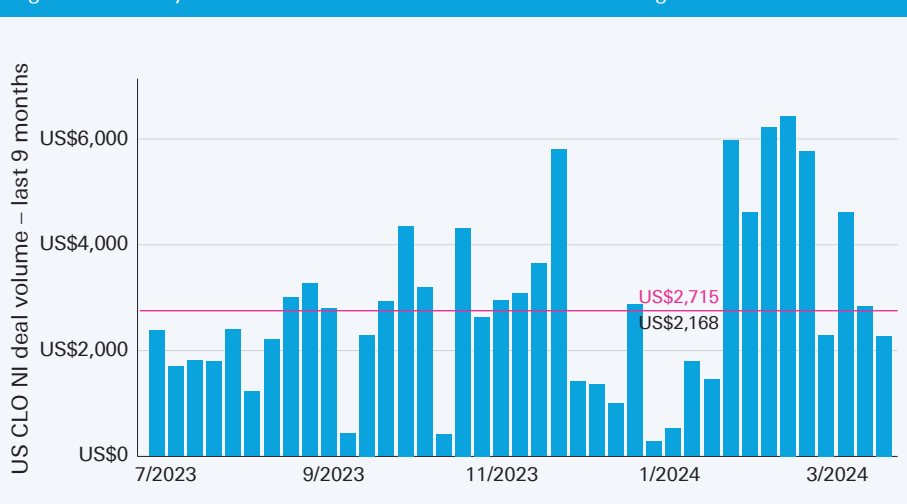
Institutional investor support

The increasing interest of investors such as pension funds and insurers in the equity tranches of CLOs is significant given CLO equity is viewed as the riskiest portion of its structure.

This move created headline news in early 2024 but, as Phong Lam, Global Head of CLO Product Strategy at Deutsche Bank, observes, it could be argued that this should not be surprising: the 2020 research report from the US Federal Reserve entitled *Who Owns U.S. CLO Securities? An Update by Tranche* revealed that "just over half of the securities held by insurance companies were mezzanine or equity tranches" and pension funds were not far behind, with over one-fifth of their investments in the mezzanine or equity tranches.

There are concerns whether traditionally conservative investors such as pension funds should even be investing in CLO equity, given the potential for rising defaults in the underlying loan portfolio coupled with lower-than-expected recoveries. Although there were clear signs of stress following the rapid central bank rate hikes, it could be argued that the CLO market has performed better than expected. As Lam explains, "Even at a default rate of 5%, this means

Figure 3: Weekly deal volume has trended well north of average in 2024



Source: PitchBook LCD, Deutsche Bank

the remaining 95% of borrowers are performing and adapting to the elevated rate environment of the past year, giving ample opportunity for active management by the portfolio manager." He further adds that, "The historical double-digit returns allied to regular quarterly cash flows of CLO equity is highly attractive, but what makes them really compelling is the optionality during an uncertain rate environment." The ability of CLO equity holders to refinance the rated tranches at more favourable rates can significantly boost the IRR (internal rate of return) of CLO equity given the average 10x leverage employed.

In addition, the rapid growth of US CLO ETFs (exchange-traded funds) over the past year is bringing in new investors to the most senior, safest tranches. In addition to making the product available to retail investors, the liquidity and transparency of ETFs makes this a highly suitable vehicle for institutional investors

to become acquainted with the benefits of investing in CLOs. The first actively managed CLO ETF vehicle (Janus AAA) has grown to almost US\$10bn in size and could easily act as the anchor buyer of the AAA portion of primary deals.

It is worth restating that no CLO AAA tranche rated by S&P has ever defaulted, so while there remain some regulatory hurdles to introducing CLO ETFs into EMEA, this may only be a matter of time.

The wider acceptance of CLO equity, allied to new investors in the rated tranches, could mean that any pickup in the leveraged buyout or mergers and acquisitions markets would be like adding fuel to the 'flywheel effect', overcoming any remaining inertia.

The "higher for longer" rate environment has positively impacted CLOs by highlighting the resilience and benefits of the CLO structure, from the safest AAA rated notes down to the equity tranches. Duration and credit risk are two key aspects to consider with any fixed income strategy, and on both counts CLOs tick the boxes with their floating rate coupon and structural protection features. However, they are not just a good hedge against rising rates but an attractive asset class relative to similarly rated instruments, reflected in the broadening investor base in both the equity and rated tranches.

In summary, the continued innovation, relative value and historically low default rates through multiple economic cycles make CLOs a compelling option in this interest rate environment.

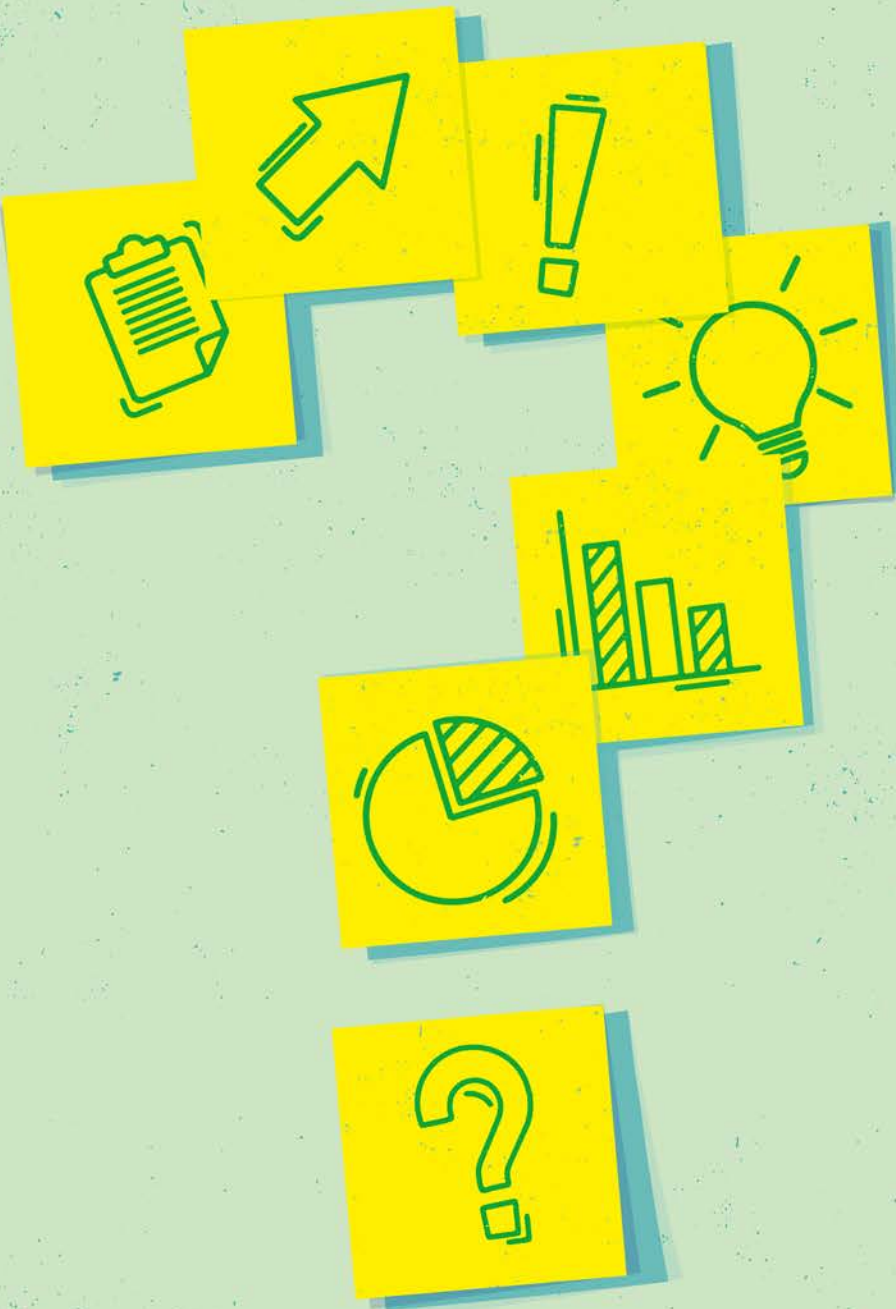


The historical double-digit returns allied to regular quarterly cash flows of CLO equity is highly attractive

Phong Lam, Deutsche Bank

Insights and Opinions

Biodiversity loss and investor behaviour, the future of carbon markets, CSR in India, an unexpected journey and AI's role in treasury



Carbon pricing

The role of carbon markets in net zero *88–91*

Biodiversity

How conservation concerns impact investor behaviour *92–93*

ExpeditionFinance

Jürgen Schmitt talks about his journey so far *94–95*

CSR in India

Women's empowerment through employment *96–97*

Last word

AI in corporate treasury *98*

Carbon pricing is essential to combat climate change as it incentivises companies to reduce greenhouse gas emissions. *flow's* Desirée Buchholz looks at how regulatory initiatives in the EU could impact global investment flows – and the role voluntary carbon markets play in reaching net-zero commitments

The price of CO₂

60-second takeaway

Compliance systems and voluntary carbon-offset markets are on the rise globally

- There are now more than 100 carbon pricing regimes
- From 2026, importers will pay an EU carbon levy on certain goods
- Carbon credits are no longer entirely voluntary; e.g. airlines will be subject to offsetting requirements starting in 2027 (CORSIA)
- The 10 'Core Carbon Principles' are supposed to bring integrity back to the market



Image: iStock

With more than 140 countries having set net-zero targets, including the biggest polluters – China, the US, India and the EU – hardly anybody doubts that fighting climate change is necessary. Yet, the most difficult question remains, how do we turn these commitments into action and substantially reduce global greenhouse gas emissions.

The best way to get someone to change their behaviour is by providing an incentive – and saving money has always been a strong driver for both people and businesses. In simple terms, that's the idea behind carbon pricing: if burning fossil fuels becomes more expensive, you are incentivised to reduce emissions. Moreover, the revenue generated by carbon taxes or certificates can be used to finance the clean energy transition.

This is why more and more countries are relying on such mechanisms to reach their net-zero targets. As of May 2024, the World Bank Carbon Pricing Dashboard counted 110 carbon pricing regimes globally (see Figure 1). These instruments are of different quality and scope, but in general there are three distinctive approaches to carbon pricing (see Figure 2).

So, how do these instruments work in practice? Which industries or sectors are most impacted by carbon pricing and why is the black and white definition

Figure 2: Approaches to carbon pricing

1. Carbon taxes	Direct	Mandatory	A regulatory fee or tax levied per tonne of CO ₂
2. Emission trading systems (ETS)	Market-based	Mandatory	Participants buy allowances to emit CO ₂ , or sell excess allowances they no longer need. The carbon price fluctuates depending on the emissions cap defined by the regulator as well as the effort needed to reduce emissions
3. Carbon crediting mechanism	Market-based	Voluntary	Tradable certificates are issued for actual emission reductions achieved

of voluntary versus compliance-based carbon markets no longer valid? This article addresses these questions, focusing on the revamp of the EU's emission trading scheme (ETS) and the attempts of voluntary carbon markets to become a transparent and effective tool for fighting climate change.

Revamping the EU ETS

To begin, let's look at the state of play of ETS: according to the International Carbon Action Partnership's (ICAP) Status Report 2024, there are currently 36 such schemes in force globally, which collectively cover 18% of global greenhouse gas (GHG) emissions. An additional 22 such

schemes are under development or being considered.

While China's ETS, implemented in 2021, is the world's largest in terms of covered emissions (around 5 billion tons of CO₂, accounting for over 40% of the country's CO₂ emissions), the EU's ETS is the oldest and largest system in force in terms of trading volume and value.

Yet, the EU ETS is undergoing a massive overhaul to meet the targets of the European Green Deal – under which the EU has committed to become carbon-neutral by 2050 and reduce net emissions by at least 55% by 2030, compared to 1990 levels. To make this happen, the union is taking three measures:

Figure 1: Carbon pricing instruments around the world

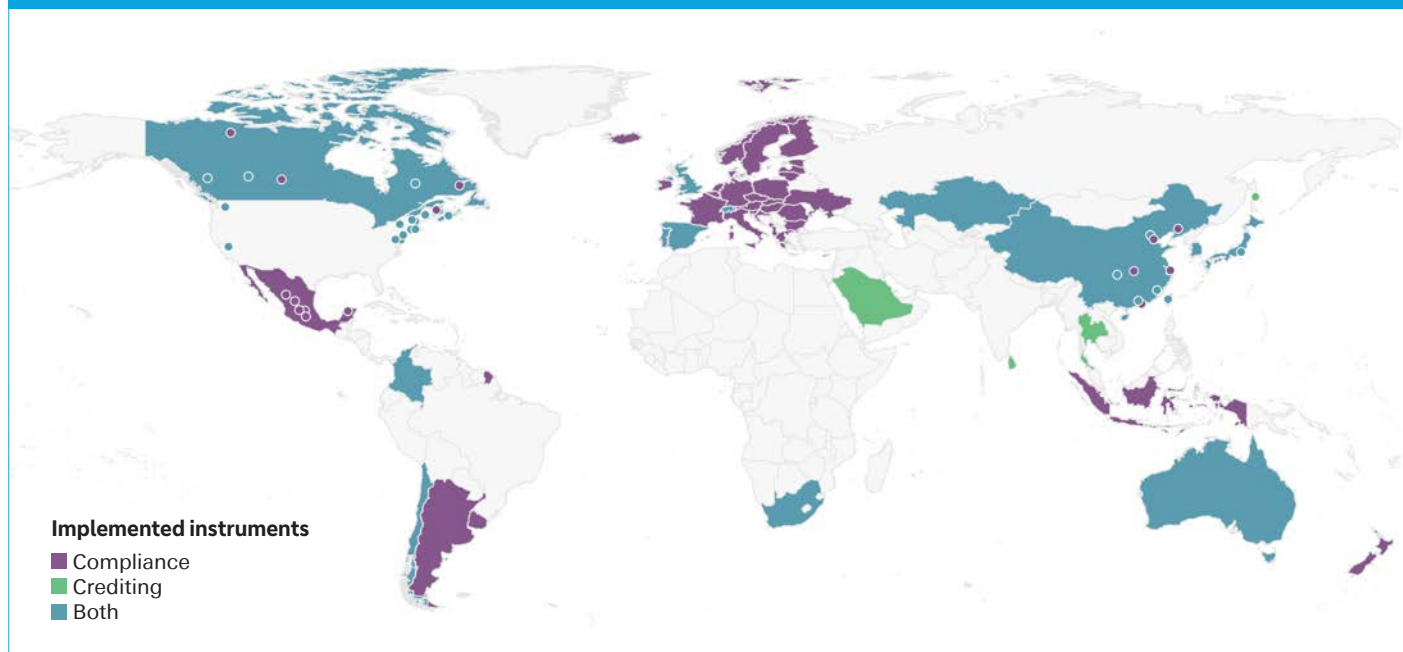
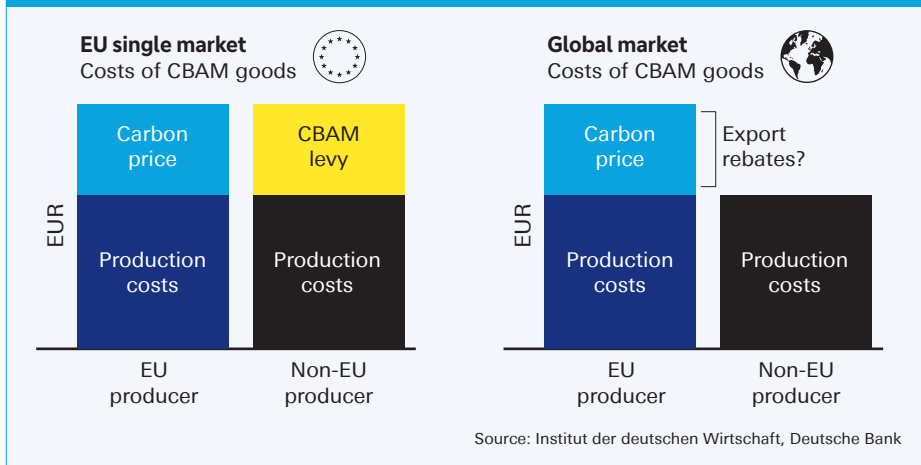


Figure 3: Schematic overview of the CBAM



- Creating a new emissions trading system called ETS2, which will cover CO₂ emissions from fuel combustion in buildings, road transport and small industry sectors.
- Expanding the scope of the existing ETS to maritime transport.
- Gradually phasing out free allowances for several industrial sectors.

However, as the latter could incentivise firms to relocate parts of their production to countries with less stringent climate policies, the EU has also introduced a new policy tool to avoid this so-called carbon leakage: the Carbon Border Adjustment Mechanism (CBAM), which imposes a levy on imports from countries without equivalent carbon price mechanisms.

Since October 2023, companies must report emissions of imported products that fall under the CBAM. These include iron and steel, aluminium, cement, some fertilisers, electricity and hydrogen, and are responsible for 27% of total EU GHG emissions. The obligation to purchase CBAM certificates for the emissions embedded in those goods will start in January 2026.

According to Marion Mühlberger and Ursula Walther, Senior Economists at Deutsche Bank Research, the new carbon border tax could lead to “trade diversion away from carbon intensive emerging market (EM) producers,” they write in their report *Transitional phase of the carbon border tax has started – all you need to know*, published on 30 January 2024. “Big emerging market economies most affected by the new EU import levies are Ukraine (iron and steel), India (iron and

steel), Egypt (fertiliser), Russia (electricity), Venezuela (iron and steel), South Africa, Kazakhstan and Turkey.”

Moreover, they believe that CBAM will benefit countries that can use renewable energy more efficiently due to better geographic location, e.g. hydropower in Sweden. This is likely to affect “new investment decisions rather than leading to relocation of existing facilities,” they specify.

How CBAM impacts corporates

On the downside, the new reporting requirements “raise the administrative burden for importers of CBAM goods,” Mühlberger and Walther write. A September 2023 study by The Conference Board finds that, depending on company size, a cost in the range of one to several full-time employees could be required to manage the additional administrative burden. One of the key challenges for corporates is to determine the emissions of imported goods: according to a survey by the Chamber of Commerce (IHK) Stuttgart, only 3% of the companies surveyed

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CBAM is likely to
affect new investment
decisions

Marion Mühlberger, Senior Economist,
Deutsche Bank Research

expect to get the necessary data from their suppliers in the future.

Starting in 2026, importers will be obliged to purchase CBAM certificates for the emissions embedded in those goods. The sale and purchase of these certificates will take place over a common central platform – and these certificates are as of now expected to be unique and not tradable, explains Dragana Prodanovic, Carbon Emissions Trader at Deutsche Bank.

CBAM impacts global trade flows and companies’ administrative and finance processes, but how will it help to tackle climate change? “CBAM is expected to have a limited effect on global emission reduction,” says Mühlberger, as it only covers certain products and goods exported to the EU. Global cooperation on carbon prices would be better to accelerate the green transition globally, she adds. Yet, she acknowledges that coordinated policy action by the US, EU and China seems challenging in the current environment. “Any progress with respect to a global CO₂ price will only be part of a wider set of trade policy negotiations among the world’s major trading blocs,” she explains.

Voluntary carbon markets

Given that a global CO₂ price is nowhere near becoming a reality in the short term and action on climate change is needed now, voluntary carbon markets will also have a role to play. As a reminder, these markets allow companies to offset their emissions by purchasing carbon credits from projects that remove or reduce greenhouse gas from the atmosphere. Morgan Stanley Research expects the carbon-offset market to grow from US\$2bn in 2020 to around US\$250bn by 2050.

Yet, the market has come under severe pressure over the course of 2023 and 2024 as several large companies such as Shell, Nestlé and EasyJet have retreated from carbon offset schemes and prices for carbon credits collapsed. Their withdrawal stems partly from growing scepticism about the effectiveness of these projects, as well as a shift in strategy towards more direct measures to reduce emissions. As these markets are managed by private organisations without regulatory oversight, there are concerns around the actual climate benefits of projects qualified for offsetting.

This is all the more worrying as the purchase of carbon credits is no longer entirely voluntary. Airlines, for example,



will soon be subject to carbon-offsetting obligations. From 2027 on, all international flights will need to be offset as per the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). In the EU, this requirement will go beyond the airlines' CO₂ allowances under the EU ETS.

To address the erosion in confidence in offsetting regimes, the Integrity Council on Voluntary Carbon Markets (ICVCM) – an independent governance body – launched 10 'Core Carbon Principles' (CCPs) in March 2023, defining high-quality credits

“ Voluntary carbon markets are still a nascent field that requires scale, but scale will require integrity

Lavinia Bauerochse, Global Head of ESG,
Deutsche Bank Corporate Bank

with a focus on governance, emissions impact and sustainable development. “Voluntary carbon markets are still a nascent field that requires scale, but scale will require integrity,” says Lavinia Bauerochse, Global Head of ESG, Deutsche Bank Corporate Bank.

In May 2024, the world's largest carbon-crediting programme, Verified Carbon Standard (VCS, operated by Verra), met the CCP criteria. The ICVCM has also approved the Architecture for REDD+ Transactions (ART). Both schemes have made significant changes to the way they operate to comply with CCP, the ICVCM added. Now, five programmes, which have a 98% share of the voluntary carbon market, meet the principles.

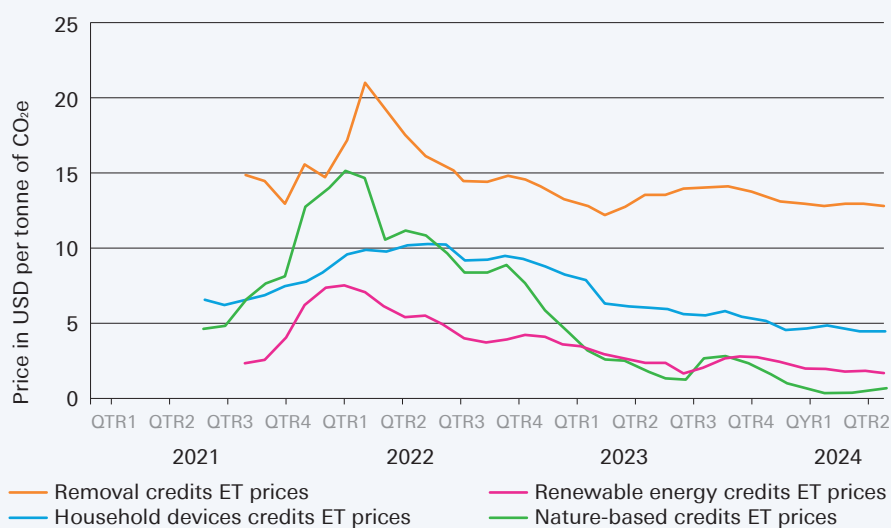
Despite these efforts to make the market more transparent, comparable and credible, carbon offsetting remains controversial. This is illustrated by the criticism following the decision of the Science Based Targets initiative (SBTi) to allow the use of carbon credits toward companies' Scope 3 reduction targets, which cover up- and downstream emissions. While the organisation's board of trustees considers “this step a way to accelerate the decarbonisation of value chains,” its own staff warn that the “use of offsetting mechanisms for Scope 3 targets could completely nullify the already insufficient climate commitments of most companies”. Given that more than 5,000 businesses across regions and industries have set emissions reduction targets based on SBTi guidance, the organisation's judgement is highly relevant for corporate net-zero journeys.

Internal carbon pricing

In addition to compliance regimes and voluntary carbon markets, there is a third dimension to creating a price for CO₂. “We see corporates introducing internal carbon pricing as a tool to achieve climate targets,” Bauerochse says. “It's still in its early stages, but we expect this approach to gain importance. When a business sets an internal carbon price, a cost is typically assigned to each tonne of carbon emitted so this can be factored into business and investment decisions, incentivising efficiency and enabling low-carbon innovation,” she adds.

Compliance, voluntary or internal: in the end, all carbon pricing approaches follow the same idea – making CO₂ emissions more expensive, to get people and businesses to act on climate change.

Figure 4: Prices for carbon credits



Source: World Bank Report: State and Trends of Carbon Pricing 2024
carbon units in the report are in US tonnes where 1 tonne = 1.10 tons

Image: iStock

Funding our future

A different approach to funding is needed to restore biodiversity and keep it intact. Deutsche Bank's Markus Müller looks at how nature is impacting investor behaviour



Climate change, pollution and biodiversity loss are the components of a triple planetary crisis. While the former two have been on policymaker, investor and corporate agendas for decades now, biodiversity loss has only started to receive more public attention in recent years.

That is important because an interlinked perspective is needed: depletion of nature (for economic or climate change reasons) leads to biodiversity loss and, in turn, biodiversity loss amplifies this depletion. These ecological relationships are reflected in recent global approaches to the problem, for example the



Depletion of nature leads to biodiversity loss and, in turn, biodiversity loss amplifies this depletion

Markus Müller, Chief Investment Officer ESG
at Deutsche Bank Private Bank

Kunming-Montreal Global Biodiversity Framework – an international agreement featuring 23 targets to be met by 2030 and four global goals to preserve biodiversity, formally adopted at the 2022 United Nations Biodiversity Conference.

Biodiversity is deeply enmeshed not just with nature but also with our economic system. We both take resources from biodiversity and threaten it. One estimate indicates that ecosystem services (for example, provision of oxygen, pollination and clean water) generate benefits worth US\$125–140trn per year, or more than officially reported global gross domestic product (GDP).

Image: iStock

As a result, half of global GDP is moderately or highly dependent on natural resources and 40% of global trade is directly dependent on them. By 2100, global GDP could be 37% lower than it would be without the impacts of global warming.

Action

Given its economic importance, and that it is relatively easy to identify the drivers of biodiversity loss, why are we not taking more action against it? Counterintuitively, focusing on the perceived biodiversity ‘financing gap’, though important, may make us approach the problem in the wrong way. This financing gap (the extra funding needed to reverse biodiversity loss) has been put at close to US\$1trn a year.

We should instead think of biodiversity funding as intrinsic to our overall economic model, not just as ‘add-on’ spending to counteract the side-effects of current degradation.

What this means is that solutions must be drawn from various areas of society. Some of these will be financial instruments for leveraging private investment, while others will be policy-related changes as governments need to incorporate biodiversity into their policy, legal and fiscal decision-making. This will involve both new initiatives and identifying and eliminating policy and regulatory barriers to enhance efficiency, encourage innovation and promote economic growth.

There has been some encouraging progress. For example, the European Union has enacted a Nature Restoration Law, which includes binding restoration targets for specific habitats and species, and a Soil Monitoring Law is proposed. Other biodiversity legislation exists around the world, from the US’s America the Beautiful initiative to China’s National Biodiversity Conservation Strategy and Action Plan.

Localisation

We must always remember, however, that economies are ultimately built by the actions of individuals at a local level. Ecosystems and their related biodiversity also need to be considered as inherently location-specific. Reconciling the general and the local is particularly important for biodiversity funding. As philosopher Elinor Ostrom has demonstrated, nature and biodiversity degradation are a “tragedy of the commons” – individual operators



By 2100, global GDP could be 37% lower than it would be without the impacts of global warming

Markus Müller

overusing a shared resource due to a lack of coordination.

Existing national or regional policy initiatives, therefore, must be complemented by more localised initiatives.

The same is true for funding methods, e.g., the Global Environment Facility (GEF), a family of funds dedicated to helping developing countries finance country-driven environmental protection projects, which has an increasingly specific interest in biodiversity. In the latest round of financing, pledges to its biodiversity focus reached a total of almost US\$2bn.

Cooperation

At the same time, financial institutions can play a valuable role in generating new revenues and exploring ways to change how existing public and private financial resources are invested. Cooperation is important here. Deutsche Bank, for

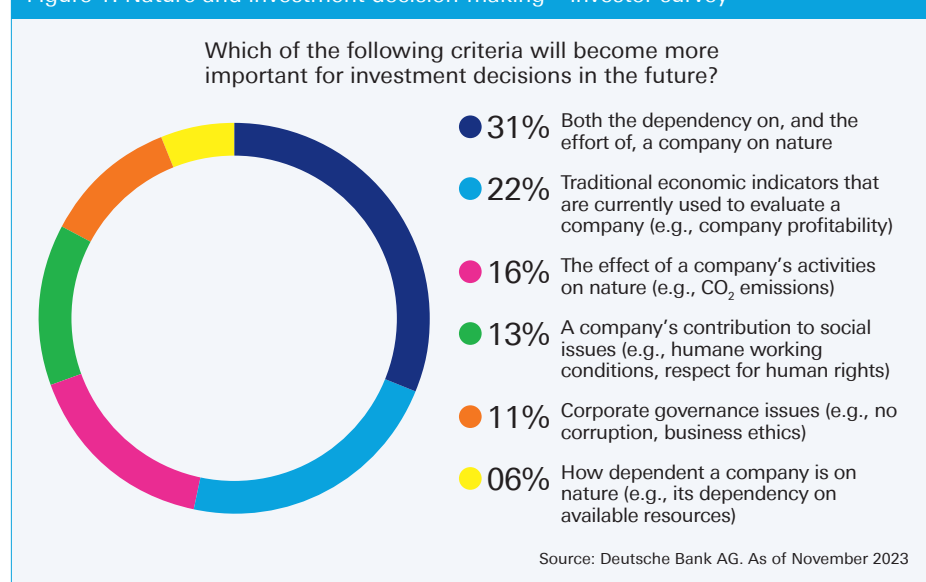
example, is establishing a range of partnerships across different areas of biodiversity – including the Ocean Risk and Resilience Action Alliance (ORRAA) and the #BackBlue Ocean Finance Commitment.

Better information provision and use will be part of this, again through collaboration – for example via the Taskforce on Nature-related Financial Disclosures (TNFD), with a total of 320 companies, financial institutions and market service providers having already signalled their intent to adopt its recommendations. The International Sustainability Standards Board (ISSB) has also announced a new project to consider biodiversity. As the ISSB has said, investors are increasingly asking for more information on how to incorporate biodiversity into corporate planning, for risk prevention and, ultimately, competitive advantage.

I expect more information around biodiversity at a corporate level to boost investor awareness further: almost one-third of respondents to our latest ESG survey said that we needed to consider both the dependency of a company on, and its impact on, nature – 80% of respondents also wanted stronger international regulation to protect biodiversity and the marine environment.

Cooperation will allow us to bring action against biodiversity loss into our overall economic system, and this is how we will achieve the “sustainable transformation”.

Figure 1: Nature and investment decision-making – investor survey



Discover the world of finance

Since its launch in 2020, the broadcast channel ExpeditionFinance has been exploring the future of the financial industry. Deutsche Bank host Jürgen Schmitt reflects on a journey which has taken him from Australia to Turkey, to Singapore and the US – and one which is far from over

When I came up with the idea of ExpeditionFinance in 2018, I was at an inflection point in my career. I had worked for Deutsche Bank for almost 25 years – and more than two decades as an equity derivatives front office trader – when I was asked to change roles. I thought: 'What am I going to do with my future?' 'How will the future of the financial industry look and how can I be part of it?'

An idea started growing: Why not discover the trends that are moving the financial sector globally?

In 2020, Deutsche Bank celebrated its 150th anniversary, which provided a perfect opportunity to learn more about the roots of the Global Hausbank and discover the world of financial services. My goal was to gain new insights, feel inspired and inspire people that are interested in finance – be it clients, colleagues or students who are interested in a financial services career.

The bank gave it a try and after a year of developing, planning and teaming up with an external film director with a journalism background, the format ExpeditionFinance was launched on LinkedIn in 2020. Four years later, we have now produced more than 150 video clips on topics that impact corporate and retail clients. We have looked at how technological innovations such as blockchain, crypto or artificial intelligence

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My goal was to gain new insights, feel inspired and inspire people that are interested in finance

Jürgen Schmitt, Deutsche Bank

are changing banking, and we've reported on how autonomous vehicles are transforming mobility and looked at initiatives driving the net zero transition.

Kicking off during Covid

Our very first clip was on pay-per-use, a concept most of us will know from our daily life – for example, if you are renting a car, you only pay for it while you are using it. But how can this concept be replicated in the corporate space? The clip explains the advantages of pay-per-use, drawing on the example of a construction company which does not need to buy a crane to build a house but pays a fee for each day it is in action, measured via sensors. This model obviously also changes payments and funding for the crane and, therefore, is a topic of interest for the financial sector.

ExpeditionFinance has turned into a success story with more than 10,000 followers on LinkedIn, but the start was tough. As we kicked off in the midst of the

Covid-19 pandemic, we had to improvise. For example, our clip on non-fungible tokens (NFTs) – a unique cryptographic token that exists on a blockchain and represents digital or real-world items like artwork – had to be filmed during a barbecue in a park. A maximum of four people were allowed to gather at the time. We were three.

Due to the pandemic, we also had to postpone all foreign travel. Ultimately, our first trip abroad turned into a road movie to Glasgow in October 2021, where we visited the UN climate conference COP26. Travelling via London, Cambridge and Newcastle upon Tyne by electric vehicle (EV), we learned a lot about the hurdles associated with emission-free mobility.

One year later, in 2022, we were able to do our first 'big' trip to Asia, visiting Singapore where we produced a clip on the Singpass, a digital identity which allows every Singapore citizen to access 2,000 public and private services online – such as internet banking or managing their insurance policies.

In 2023, we travelled to the US. Before we arrived in New York, I posted on LinkedIn that we would be coming to produce new clips – then the magic happened. An employee of Mastercard spontaneously invited me to the credit card provider's headquarters and asked me if we would be interested in joining their innovation lab, and possibly making a film. Surprised and pleased I said, "yes, of course." Two days later, we met and produced a clip on how shopping via eye-



Jürgen Schmitt and
Anna Schwering,
Global Working
Capital Structuring,
Deutsche Bank

Image: Deutsche Bank

tracking works. I was able to test it and got an impression of how easy shopping and payments can be using this method.

Sometimes you do not need to search for the stories. Sometimes your network just brings them to you. That is the magic of social media and an active community which offers ideas and potential topics. And that is what makes the format creative and offers direct insights.

Focus on financial literacy

ExpeditionFinance is not just about topics, it is also about getting in touch

with people. Funny story: when we filmed in Sydney, a young guy came across and asked in German: "Hey, are you Jürgen from Deutsche Bank?" – he was a student spending a semester in Australia and he knew our format. In New York, we entered the subway and a guy said, "Hey, you are the German guy with the edutaining films" – he was a colleague working in our American branch, but we had never met before in our lives.

The journey goes on. We plan to expand the financial literacy topic, offering insights and education around debt, budgeting, saving and investing. So, join the expedition and discover financial trends around the globe. Do you want to participate? Follow us and let us know your ideas. Maybe you will soon be part of this journey format yourself?



Jürgen with Mohamed
Nasheed, former
president of the
Maldives, at COP26

Image: Deutsche Bank

Follow the journey!

View Jürgen's latest clips on LinkedIn and become part of ExpeditionFinance



Empowering women in India through self-employment

With Corporate Social Responsibility (CSR) growing in importance globally, *flow* explores an initiative that is supporting women from low-income backgrounds in India – where CSR has been a priority for the past 10 years

Over the past decade there has been a significant uptick in CSR activities across India. This comes after the country introduced the world's first governmental CSR mandate, in April 2014, requiring companies to allocate at least 2% of their net profit to CSR initiatives.

Coming into force at a time when the World Bank reported that 248 million Indians were living in poverty – spending less than US\$2.15 a day – this legislation has driven a wave of development in the country, fostering partnerships between the private sector, government agencies, charities and local communities.

As a result of the growing emphasis placed on CSR initiatives – like improving access to and quality of education,

training, healthcare, nutrition, sanitation and safety – there have been record reductions in poverty levels. A 2023 report by the United Nations Development Programme (UNDP) and NITI Aayog, an Indian government think tank, found that nearly 135 million people had moved out of poverty between 2015 and 2021, with the National Institution for Transforming India's (NITI) Multidimensional Poverty Index (MPI) reducing from 24.85% of the population to 14.96% over the same period. This puts India on track to achieve its Sustainable Development Goal (SDG) of reducing poverty by at least half by 2030.

With significant progress being made – but much work remaining – *flow* explores a successful CSR initiative that is being rolled

out in India, and its impact on two of the communities targeted.

The Mahila SEWA Trust

To help communities become more resilient and prepared for the future, Deutsche Bank focuses on two key areas: education and the environment. “We support education initiatives that help people advance their competencies and skills, and we aim to restore and protect local environments,” says Melanie de Cruz, Head of CSR, APAC at Deutsche Bank. “Additionally, we provide basic needs that address pressing concerns in each region and offer relief in emergencies.”

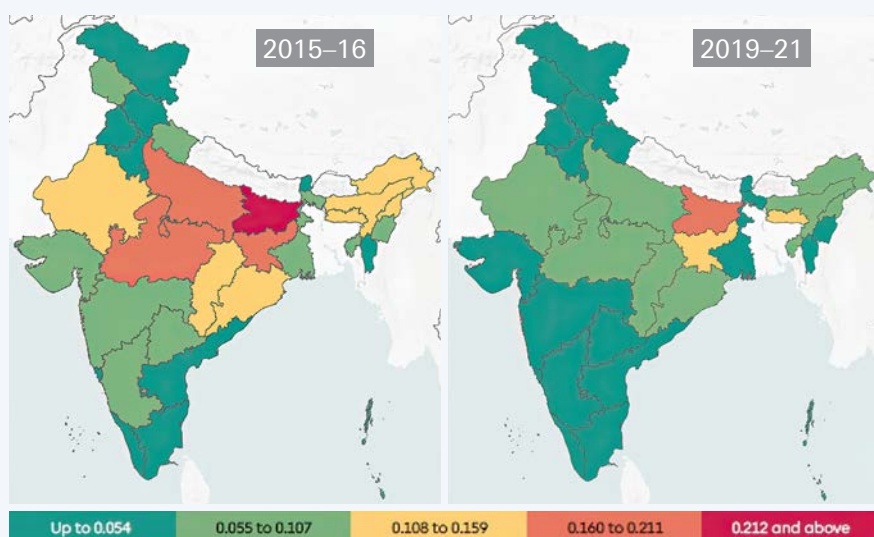
One of Deutsche Bank's CSR partners in India is a non-profit organisation known as the Self-Employed Women's Association (SEWA). Set up in 1972, it supports women workers from the informal economy through empowerment, community improvement and poverty alleviation.

Most of the women workers are small and marginal farmers and landless agricultural labourers by profession, and they often do not get employment opportunities. These women need to upgrade their skills to improve their production quality and increase their management skills in understanding supply chain structure, financial literacy, sales and marketing – all of which is provided by SEWA through its interventions, as follows:

- 1. Full employment.** Providing work security, income security, food security and social security, which includes healthcare, childcare, insurance, pension and housing at the household level.
- 2. Self-reliance.** Enabling them to work individually and collectively to achieve economic freedom and retain decision-making power over issues affecting their lives and livelihoods.

Figure 1: An illustration of India's National Multidimensional Poverty Index (MPI) scores

Demonstrating the declining levels of poverty across the country, the green represents the areas with the lowest MPI scores, while red represents the highest



Source: 2023 report by the UNDP and NITI Aayog

Kamla co-operative members.
From left: Kalpana Vipul Parmar,
Farzana Irfan Vora, Manisha Mukesh
Parmar and Sobhana Bharat Vaghela



"The programme we support equips these women with essential skills such as basic accounting, computer proficiency, marketing, communication, financial literacy and leveraging information technology. Skills that will help them to set up co-operatives within the non-profit, where members themselves are owners and managers of their own enterprise," explains Ruchi Khemka, Head of Corporate Social Responsibility for Deutsche Bank Group in India. These women, who come from very low-income backgrounds, often face many constraints and limitations, imposed on them by society. "This comprehensive skills training programme empowers the women, leading to financial and food security, asset ownership and economic freedom," she adds.

Over time, the organisation has grown to include more than 110 active co-operatives and over 2.9 million women as members across 18 states in India, providing each member with a decent livelihood, upgrading their capacities and developing them as entrepreneurs.

The Kamla project and its impacts

Nutritious foods are not commonplace in low-income areas due to the growing availability of cheaper processed food, despite its negative impact on the health of families. A standout project looking to address this issue – run by SEWA and supported by Deutsche Bank – is

the Kamla co-operative, which aims to support women from low-income areas in training as home chefs and provides them with opportunities to sell their products.

In 2021, Deutsche Bank supported the initial set-up, investing in the 'Kamla on Wheels' project, which enabled 120 women – having been trained to create a variety of healthy and nutritious dishes – to use carts and stalls to go to neighbouring areas to sell their products to a larger customer base.

Following the success of the initiative, the project was expanded to six cafés. The Kamla sisters – as the members of Kamla are known – underwent comprehensive training, equipping them not just with the skills needed to cook healthy meals, but also essential capacity-building skills in food quality standards, store management and basic accounting.



Applying these learnings
has significantly
elevated my family's
economic status

Farzana Irfan Vora, SEWA member

The Kamla cafés are now self-sustaining and have generated a turnover of €250,000 to date. As stakeholders in the co-operative, the Kamla sisters receive a share of the profits in addition to their daily pay – and are involved in making decisions on the future of the café.

"The impact has been profound," said Farzana Irfan Vora, a 32-year-old woman residing in the village of Chaklasi who was raised by her uncle and aunt after her mother's death when she was eight years old. "Applying these learnings has significantly elevated my family's economic status. I can now afford nutritious and healthy meals and decent clothing, and can witness an improvement in our overall health."

Before joining SEWA, Farzana was packing 25kg bags of papadum (a savoury Indian snack) and earning INR30–40 per day (approx. €0.30–0.40). "It was difficult for us to manage household expenses," the mother of three children and one adopted daughter says. "My husband's livelihood revolves around a plastic cutlery stall, a venture that required him to travel from one village to another. Unfortunately, the income generated was insufficient to meet our household expenses, leaving us in a perpetual struggle."

After joining SEWA, Farzana now makes a monthly income of INR9,500 to INR10,500, contributing 60% of the family's income. "Previously enrolled in a government school, my children now attend a private institution, receiving an enhanced quality of education."

Given the popularity of the cafés, in 2024 Deutsche Bank will fund an expansion of the current bakery and set up a new central facility and café, supporting the training of an additional 800 women.

"This is more than just a job for these women. They are fulfilled and empowered in their roles – and then continue to reinvest profits into the project so that more generations of women can share the benefits. The great thing about this is that it benefits the whole community: the income of families increases, and they can invest their money towards healthcare and their children's education," says Deutsche Bank's Khemka.

"Upskilling women not only empowers them with knowledge and resources to secure a livelihood, but also fosters economic growth and social progress," she adds. "Together with our NGO partners, we can create a multiplier effect of positive change in communities."



Automation should come first, AI will follow

François Masquelier, Chair of the European Association of Corporate Treasurers (EACT), on why AI will be a game changer for corporate treasury – and what needs to happen for treasurers to play along

Artificial intelligence (AI) will undoubtedly be the most transformative technological force for businesses in the coming years. The US technological research and consulting firm Gartner has likened its breakthroughs to the invention of the steam engine, electricity and the internet in terms of its projected impact. Generative AI can learn from existing data to generate new, realistic creations that reflect the characteristics of their source, without replicating it. The revolution is here, and it is data-driven.

As AI technology rapidly advances, it will automate complex cognitive tasks and decision-making at an unprecedented rate. We are now at the beginning of the fourth wave of AI – characterised by the intersection of AI with other emerging technologies such as the Internet of Things (IoT), cloud computing and augmented reality. AI will have a major impact, but exactly how is not yet clearly defined – we are still trying to figure it out.

Data comes first

AI's potential to reshape treasury is unparalleled. Over the past few years, we have seen successful examples of AI usage in finance, e.g. around predictive cash flow forecasting, payment fraud detection through abnormal patterns and data extraction from trade finance documents. At the same time, many banks and IT vendors are wondering what they can develop in terms of AI.

While it is clear that treasurers will benefit from AI, usage is still in its

infancy. In the 2023 EACT survey, we saw that digitalisation and AI are important, but not a top priority, for corporate treasurers. It seems that there are many other issues to be fixed before they start thinking about AI.

As treasury has entered the era of "everything in real time", the fragmentation and multitude of IT systems complicates treasurers' lives. Therefore, treasury first needs to focus on the next level of process automation to improve efficiency, get a better grip on the data and strengthen internal controls. Without good quality financial data lakes, an AI solution is not conceivable.



The revolution is here, and it is data-driven

This is why I see hyper-automation as an intermediary step towards broader AI use. Hyper-automation aims to achieve end-to-end automation across various treasury functions, from cash management and liquidity forecasting to compliance and reporting. It focuses on achieving significant operational efficiencies in treasury processes through a holistic approach to automation, until the time that AI is able to go beyond it.

Use cases of AI in treasury

There are existing, encouraging examples of AI usage in treasury. For example,

AI enables forecasts and scenarios to be constantly adapted based on compiled and processed data, and the quality of the forecasts improves over time. It also ensures the relevance and accuracy of calculated figures. Speed, automation, reliability and adaptability are AI's strengths. As we are living in volatile times, adaptability is also key for corporate treasurers.

However, these AI applications are not (yet) deeply integrated into treasury processes or may be adopted primarily because they are fashionable, rather than because they provide significant value. We are also aware of the need for strong governance and responsible management of this powerful technology. The treasury function will not become obsolete, but it will have to evolve.

We must be patient and go step by step with a roadmap in mind – things never advance as fast as we expect. Cars were predicted to fly by the year 2000, but that wasn't the case. Nevertheless, whatever our level of exposure to, and interest in, AI solutions, this technology is going nowhere but up.

It is an exciting time, as we are now more empowered than ever to forecast, strategise and execute with confidence. As we forge ahead, let us leverage the full spectrum of possibilities that predictive analytics offers, ensuring a resilient and robust financial framework for businesses around the globe. The machine will never replace man (fortunately), but man's job will change along with the machine.



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