flow

Insights from Deutsche Bank Corporate Bank

Issue 12 | 2021

Inside this issue:

On the right track

Jeremy Hamon, Head of Group Finance and CFO at Primetals Technologies, on the steel engineering company's remarkable treasury journey

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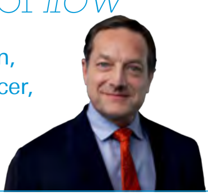
Christoph Woermann,
Chief Marketing Officer,
Deutsche Bank
Corporate Bank



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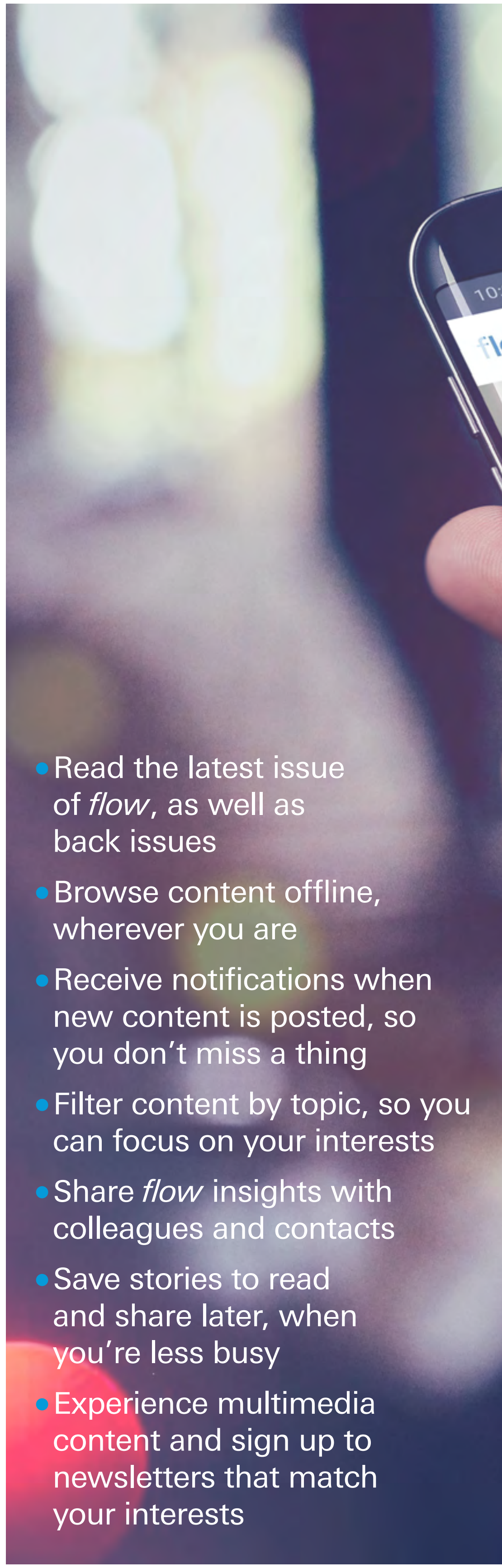

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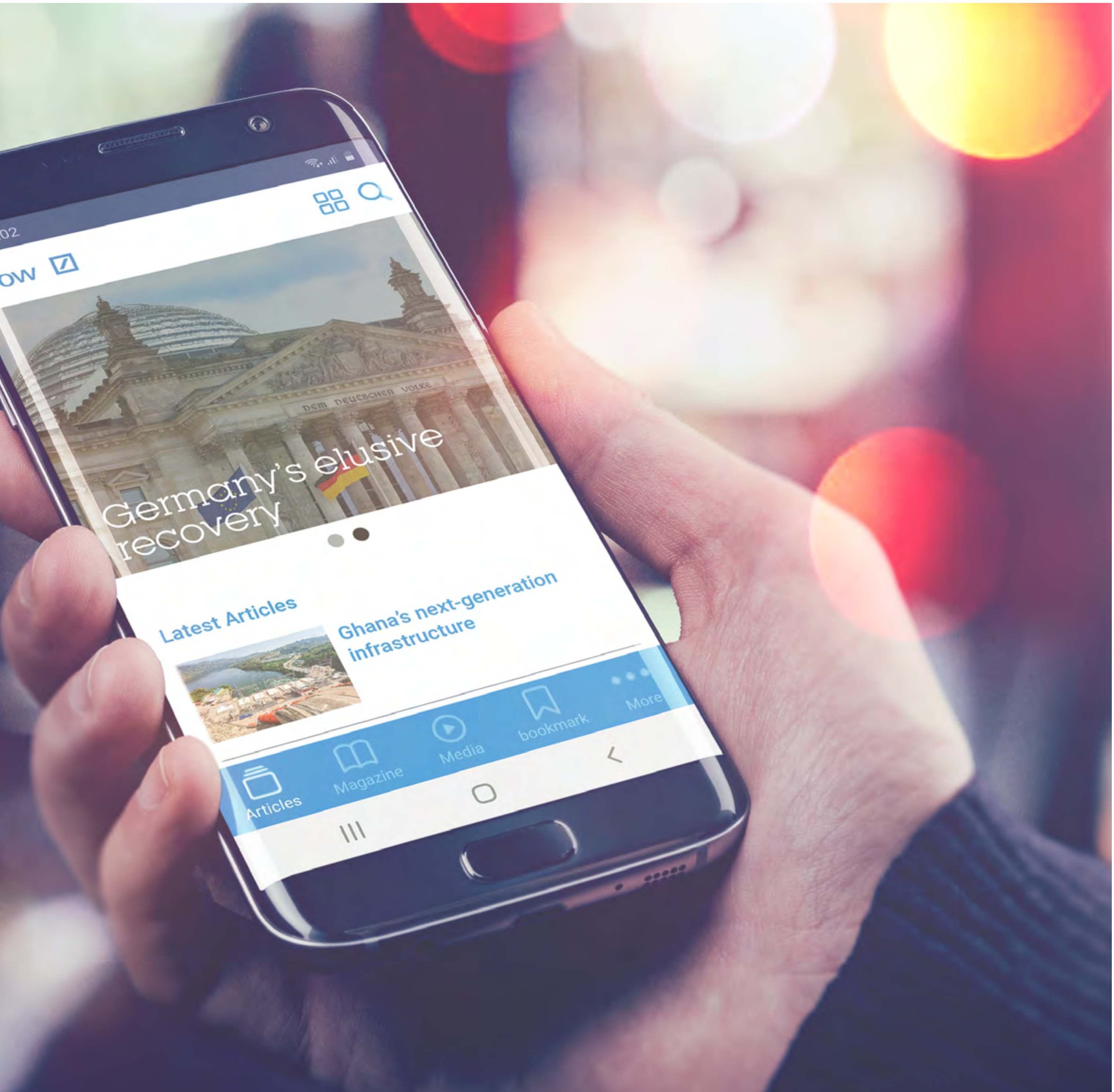

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flow

Where capital, goods and ideas connect

New beginnings

When we launched *flow* in 2015, our goal was to create a new kind of magazine. Aligned to the real economy, Deutsche Bank Corporate Bank supports clients as they navigate an uncertain economic and regulatory environment, and has done so with some for decades.

We wanted to produce a publication that would connect the past with the present and future, and hold a mirror to client journeys. Insights from the cutting edge of corporate and transaction banking, real case studies, financial news you can use – all this has made *flow* more than just another trade magazine.

Six years on, we're immensely proud of the award-winning magazine you have in your hands and the content programme that has grown up around it. Almost 9,000 readers who are signed up to the *flow* newsbite service receive a business update e-newsletter every Friday, with various specialist newsletters spaced out in between. Our web-based content engagement sees 30,000 visitors and 60,000 page impressions each calendar month.

Now we're excited to be able to share the next stage in the evolution of *flow*: a flexible combination of print and digital publishing. *flow* magazine will become an annual review, and to complement it, we have launched a free, easy-to-use app, which you can read all about in the foldout cover section of this issue.

We know our readers value the magazine for its reflective, in-depth content; deep-dive articles that cover the big developments in our industry and their implications across sectors and geographies. You'll still be able to read all those at your leisure in the annual review. At the same time, the *flow* app will also give you fresh, topical content from Deutsche Bank at your fingertips.

As for this issue, our cover feature tells the story of Primetals Technologies, a steel engineering company that is planning for a more sustainable future through a pioneering ESG-aligned FX hedging commitment. Our regional focus examines the factors that underpin the impressive growth of Vietnam's economy over the past three decades. And, while bitcoin continues to make the headlines, we look at a number of central bank digital currencies that are quietly being developed around the world.

We hope you enjoy reading about these and the other topics covered in this issue.

The *flow* team

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"I always try to pioneer as much as possible to get the development that centralised treasury departments need"

Jeremy Hamon, Head of Group Finance, Primetals Technologies
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"It was a privilege to be part of the team helping the Taiwan government reach its renewable energy target"

Ingrid Chang, Head of Corporate Coverage, Deutsche Bank AG Taipei Branch
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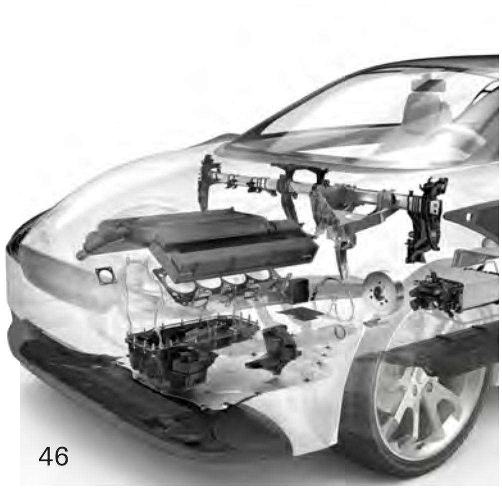
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Inflation and the cost of the Covid stimulus

After 30 years of low inflation, could this benign era come to an abrupt end given unprecedented Covid-19 global fiscal support policies? This article highlights longer-term trends and central bank responses

While the hyperinflation seen in Venezuela (2019), Zimbabwe (2007) and Germany in the 1920s does not look set to reappear in G20 economies anytime soon, such examples are stark warnings of what happens *in extremis*. Price rises of more than 10% a year can destabilise economies and deter foreign investment. Deflation, triggered when prices fall, creates another set of problems – a rise in the household debt burden where consumers have borrowed in the past and reduced their spending.[1] What the 'new normal' will look like as economies emerge from Covid-19 shock looks set to vary from region to region, with various factors at play including demographics, labour supply, and demand.[2]

Cost of recovery

On 31 March 2021, US President Joe Biden unveiled details of his administration's keenly anticipated American Jobs Plan, a US$2.25trn infrastructure investment programme. It followed the US$1.9trn fiscal stimulus to reboot the US economy after the pandemic's impact on growth and jobs.

While the fiscal stimuli from other major economies in response to the crisis are less eye-watering, Germany's third supplementary budget within a year (March 2021) injected a further €60bn into Covid-19 relief measures, raising the country's net federal borrowing to €240bn, an all-time high that is equivalent to 6.8% of GDP.[3] Germany's federal government is now targeting a 2022 deficit of €81.5bn (2.2% of forecast GDP). This is a number that is "clearly incompatible with the normal debt brake rule" (that limits new borrowing to 0.35% of GDP), but the intention is to cut it sharply to €10bn in 2023, 2024 and 2025. Equally stark forecasted figures for the UK have improved slightly.[4] Analysts believe its 2020–2021 borrowing figure, forecast initially by the Office for Budget Responsibility (OBR) at nearly £330bn (€380bn), could now undershoot by at least £20bn (1% of GDP) – and more if, as expected, GDP for 2021 comfortably exceeds the OBR's 4% forecast.

However, with the cost of reviving global economic growth – from furlough schemes to loans and tax credits for keeping businesses afloat – now spoken of in trillions rather than billions, figures such as former US Treasury Secretary Larry Summers have expressed alarm. They caution that measures such as the Biden package are evidence that central banks and finance ministries are overly reliant on tax and spend policies that could lead to economies overheating.

Images: Alamy

Concerns have also been expressed about the resultant outlook for inflation. These were heightened on 12 May when market sell-offs were triggered by the US Consumer Price Index (CPI) for April. This showed a 0.8% month-on-month increase against an expected 0.2%, pushing the year-on-year increase to 4.2% – the biggest rise since September 2008 – and way above economists' projections of 3.6%. The core inflation figure, showing a 0.9% monthly increase, was also worrying, representing the fastest pace of core price rises since September 1981 and giving an annual figure of 3%, the highest in 25 years.

Trouble ahead

Deutsche Bank Research's Chief Strategist Jim Reid warned[5] that the data signalled trouble ahead. "You may get dull periods, but this year is going to be a big battle between the bullishness of mass reopening/stimulus on one hand and the inflationary consequences on the other," he wrote.

In their *Inflation Outlook, the US, Euro area and UK* (April 2021) report,[6] Deutsche Bank analysts note that US inflation remained weak and had been "slipping in sectors at the epicentre of the Covid shock", although related supply-and-demand-sensitive contributions to inflation had been declining since the early months of the pandemic. Before the April data, core CPI inflation had nonetheless kept well below the Federal Reserve's (Fed's) 2% target and was not expected to reach it until the end of 2021 – and then modestly exceed it.

In addition, says the report, "Inflation expectations have begun to pick up on the Fed's reaction function, more robust recovery, and stimulus". As *flow* reports in 'Inflation genie drivers' (26 February 2021),[7] there are concerns that the Fed is too relaxed about the prospect of US inflation remaining subdued post-pandemic.

Managing low inflation

In Europe, "the pandemic hit inflation hard in 2020, pushing headline Harmonised Index of Consumer Prices down to 0.3%," report analysts. Although currently both the unemployment rate and underlying inflation remain far from pre-crisis levels, analysts see core goods inflation picking up in the months ahead on the back of rising supply costs.

However, this is not enough to solve the euro area's "low inflation problem" they suggest, as the labour market remains a long way from its pre-crisis health. "Without a material shift in worker inflation expectations or non-accelerating inflation rate of unemployment, the wage outlook will remain tepid and translates into persistent low services price inflation."

Core inflation, forecast at 0.7%–0.8% for both 2021 and 2022, is predicted to edge back to 1.2%–1.3% in the subsequent three years, although this is still well below the European Central Bank's (ECB's) 2% target.

The one-time Next Generation EU recovery fund, set up at a July 2020 summit with a €750bn budget to facilitate post-pandemic recovery in the eurozone, will begin disbursing funds in mid-2021, with up to €85bn likely to be distributed in H2, and at least twice that figure in 2022.

In September 2021, the ECB is expected to announce the results of its first Strategy Review since 2003, and analysts are releasing a series of notes[8] ahead of publication. They expect the ECB to confirm that negative interest rate policy, targeted longer-term refinancing operations, quantitative easing and forward guidance remain its key policy tools. "The question is whether the ECB can clarify details and boost confidence in this toolbox." Around the same time, the ECB will decide whether it needs to "extend the main pandemic policies beyond their current expiry dates in the first half of 2022".

The ECB's numerical definition of the inflation target is currently worded as "close to, but below, 2%". Analysts suggest this may be raised slightly to 2%, which "would make the target much clearer and easier to communicate".

Asia's spike

In Asia, analysts single out[9] China, Taiwan and Vietnam as the only countries likely to see their economies surpass pre-Covid trend levels in 2021, as "much of the [2020] output loss is expected to be permanent for most of them, although they may return to pre-Covid growth rates". With this negative output gap likely to persist over the next year, they see a "near-term spike in headline inflation [that is] unlikely to lead to significantly higher core inflation".

Surveys of Chinese and South Korean households indicate only modest expectations for higher wages, and average inflation is forecast to rise from 1% to mid-2% in H1 2021, before subsiding again in H2.

India is a notable exception, where "core inflation has been stubbornly high at about 5%". The Reserve Bank of India (RBI) is expected to respond by withdrawing emergency liquidity support and making small increases to the repo rate. Although India has experienced a sharp rise in Covid-19 cases since February 2021, the RBI expects real GDP growth of 10.5% for the year to March 2022.

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Ho Chi Minh City

Heirs of Lac Long Quan

Vietnam has managed to weather the Covid-19 pandemic better than many Asian economies. *flow* examines what underpins this resilience and how it is driving inflows of foreign direct investment and export growth

In Vietnamese folklore, the mythical Lac Long Quan, King of the Hong Bang dynasty of ancient Vietnam, vanquishes various monsters to protect his people, before showing them how to live in a more healthy, peaceful and prosperous way. In the eyes of some citizens and investors alike, Vietnam's government is similarly curbing Covid-19, and setting the scene for what could be a golden age for the country. But what underpins Vietnam's growth, its success in tackling Covid-19, and its post-pandemic prospects?

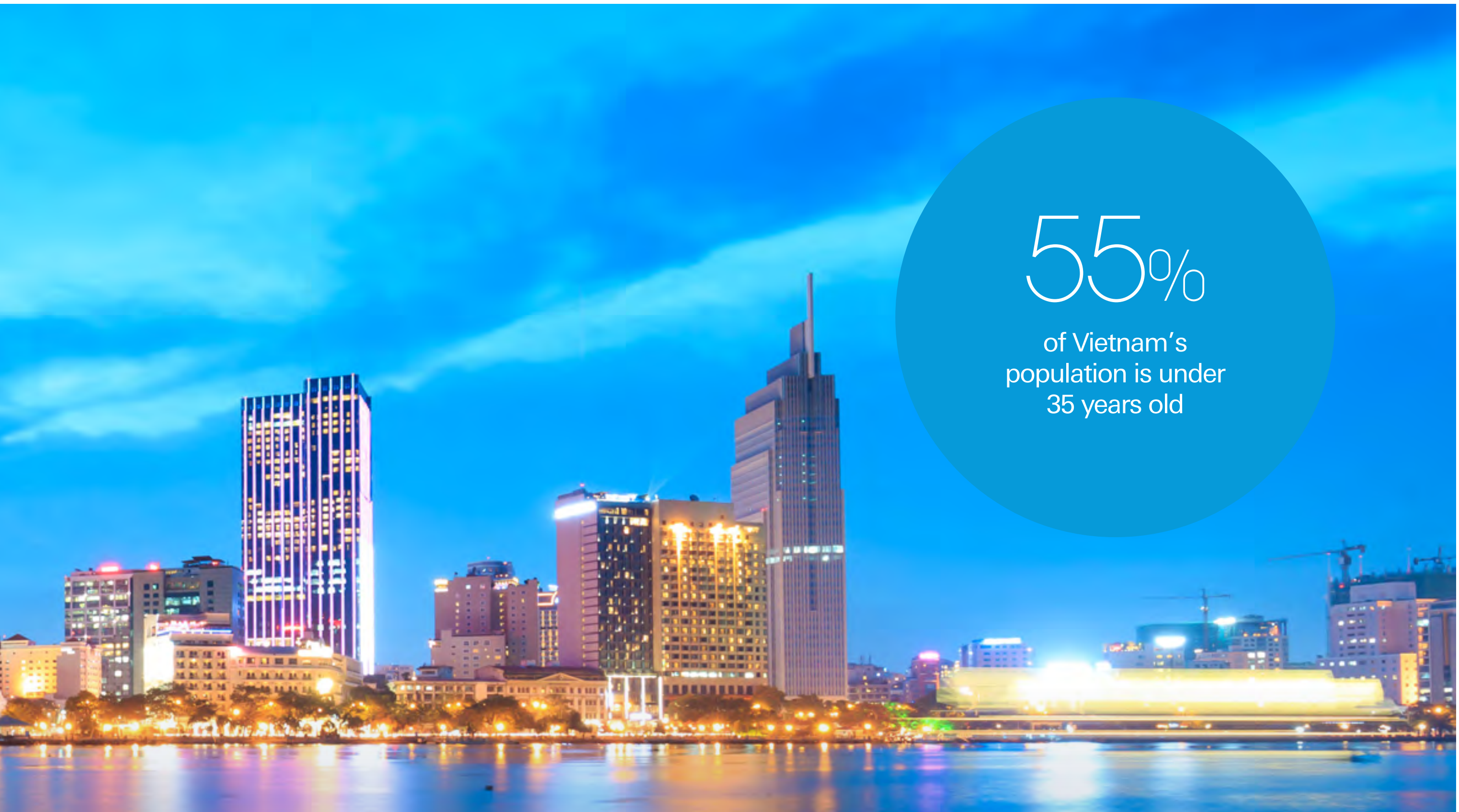
Solid fundamentals

In 1986, at its 6th National Party Congress, the Vietnamese Communist Party (VCP) signalled a move from a closed, command economy to a more open, market-based one – its 'Doi Moi' programme. Both party and country have not looked back since.

As the VCP concluded its 13th National Party Congress in February 2021, Vietnam was able to point to an average of 7% GDP growth each year over the previous three decades. Such a rate lifted more than 28 million people out of poverty, transforming the country from a low-income economy to a middle-income one. While Vietnam's GDP growth in 2020 slowed to 2.9% due to Covid-19, this rate kept pace with China, and far exceeded that of Thailand (-7.7%), Malaysia (-6%) and others in the Association of Southeast Asian Nations (ASEAN). Several factors have driven this success.

Stable politics

"We have a very stable political environment, and I think that is so



55%

of Vietnam's population is under 35 years old

important," says Huynh Buu Quang, Chief Country Officer for Vietnam at Deutsche Bank. "Vietnam has also been able to maintain very good relationships with both neighbouring countries as well as the Americas, Europe and Australia." The country has more than 50 bilateral investment treaties (BITs) – the third highest tally in ASEAN and sixth highest in Asia.

The 13th National Party Congress saw the reappointment of Nguyen Phu Trong as General Secretary of the VCP, confirming the continuity of the country's political direction. Its one-party system provides local and foreign businesses and investors with stability, and the VCP's handling of the various Covid-19 waves has further bolstered public confidence.

A safe haven for FDI

BITs are just part of the story. Vietnam's efforts to enter into treaties with investment provisions and investment-related instruments also helps garner foreign direct investment (FDI). For example, further evolution in the nation's economic stability and integration into the global trade system came when it joined the World Trade Organization in 2007. Since then, Vietnam has received a total of US$108bn in FDI.

The country has also facilitated foreign competition, including opening up more than 50 industries in 2015 alone. The latest chapter in Vietnam's accumulation of investment treaties is still being written: the UK-Vietnam Free Trade Agreement signed at the end of 2020, the EU-Vietnam Investment Protection Agreement of June 2019, the EU-Vietnam Free Trade Agreement signed in June 2020, and the Regional Comprehensive Economic Partnership completed in November 2020, all of which Vietnam entered into in the run-up to and during the country's recent chairmanship of ASEAN. These agreements, once in full force, are expected to further boost its FDI and export-led growth.

Vietnam does not just attract foreign investors: it also has a track record of treating them fairly. On the very rare occasions foreign investors have aired grievances by using treaty provisions to bring arbitration claims against it, independent adjudicating arbitration panels have almost invariably exonerated the conduct of the state.

While Vietnam has a broad and diverse base of trading partners, perhaps its most important are China and South Korea. Many inputs for its factories, both multinational and state-owned, depend upon China, while FDI from South Korea – in particular from Samsung – has helped bolster macroeconomic fundamentals.

The country's top exports have become progressively more value-added, from basic agricultural products in the 1980s, to footwear and textiles during the 1990s–2000s, through to electronics in recent decades.[1] FDI is also becoming even more 'high tech'. Developments such as Samsung's US$220m research and development plant, which is scheduled for completion by the end of 2022, will create a virtuous circle of value-added production and upskilling for the Vietnamese economy and workforce.[2] "Samsung is the number one export revenue earner for the country and that investment is a gamechanger," notes Quang.

Sound economic management

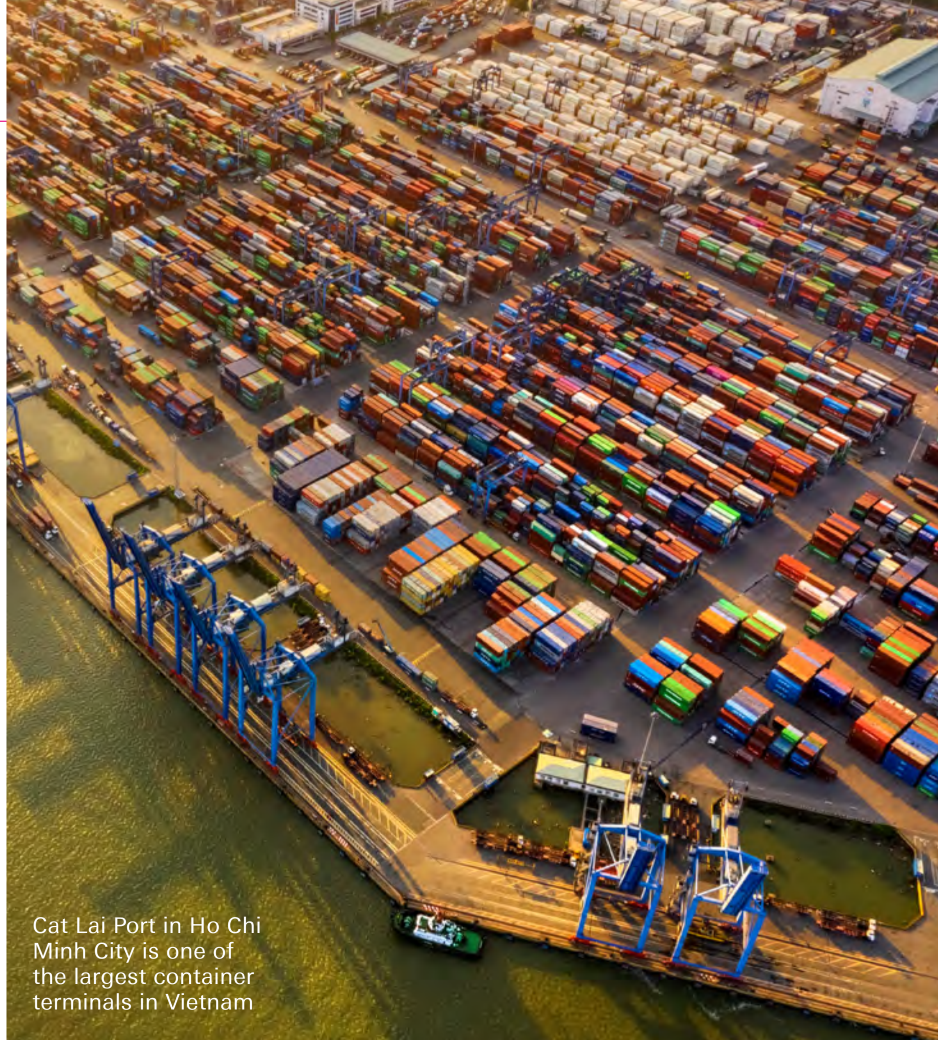
The government spends around 5.7% of its annual GDP on infrastructure improvements; the highest percentage in Southeast Asia.[3] Examples include the construction and expansion of 39 ports, an improved network of expressways across the country – including the expressway linking North and South Vietnam that is currently under development – and the new Long Thanh International Airport, on which construction began at the end of 2020.

Infrastructure investments in sanitation and dramatic changes to the national energy mix are also laying the groundwork for long-term prosperity. Within two years, Vietnam smashed its targets for the installation of solar-powered generation which, alongside advances in wind power, means 10% of its energy generation is now renewable. Privatisations and other supply-side reforms have continued apace since the distant memory of the default by state-owned shipbuilder Vinashin in 2010.

Vietnam also has a sound legal system and strong rule of law, including strengthened consumer protection laws. The ease of doing business has also improved, with the country rising from 99th position in 2013 to 70th in 2020, according to the World Bank's annual global ranking.[4] In January 2021, the Organisation for Economic Co-operation and Development praised Vietnam for providing a business environment "conducive to business growth" that has "constantly improved".[5]

Fiscal and monetary levers have been managed prudently. The State Bank of Vietnam has focused on reducing its external borrowing and its domestic credit growth,[6] a discipline rewarded by the main credit rating agencies continuing to classify Vietnam as 'stable'. "The government has recognised the challenge of high debt to GDP," comments Quang. "For the past five years it has focused on reducing the deficit and external borrowing to get this down – we are close to 50%, which is very welcome to foreign investors."

> We have a very stable political environment
>
> Huynh Buu Quang, Chief Country Officer for Vietnam, Deutsche Bank



Cat Lai Port in Ho Chi Minh City is one of the largest container terminals in Vietnam

Currency interventions have kept the dong within a narrow band, which has allowed reserves to be accumulated while maintaining macroeconomic stability.[7] Vietnam also enjoys low inflation and interest rates, and an increasingly vibrant domestic capital market.

A wealth of natural and human resources

The ability to sustain a high annual growth rate over three decades is – like the FDI – underpinned by a wealth of natural resources (including ebony, teak, oil and fish). A young, upwardly mobile workforce (55% of all Vietnamese are under 35 years old) supports robust domestic demand – and output. The population is the third largest in ASEAN and 15th largest in the world and, at 96.5 million, exceeds that of Myanmar, Malaysia, Laos and Singapore combined. Furthermore, Vietnam itself sits at the gateway to an even greater market: China's 1.4 billion people.

Structural changes to the economy, such as the movement of workers from agriculture into manufacturing – and from the countryside to towns and cities – have also fuelled productivity growth. Pre-pandemic, roughly one million people were moving to urban areas annually and, with 66% of the population still living in rural areas,[8] this growth driver has some way to play out.

"From an ASEAN perspective," adds Deutsche Bank's Burkhard Ziegenhorn, Head of Global Transaction Banking and Corporate Bank Coverage for ASEAN, "Vietnam is the fastest-growing economy, with a very young population that started off from a low base in terms of GDP per capita."

He reports that the fastest-growing corporates in the ASEAN portfolio are those in sectors that cater for this upwardly mobile consumer group. In other words, there is a hungry, fast-moving consumer goods market in Vietnam's growing middle class, with high demand for telecommunications, mobile payments and banking solutions that can cater to an unbanked and youthful population; while energy, engineering and infrastructure projects are also needed for a country with a growing urban population and ambitious targets for green growth.

Images: Alamy

Vietnam is the fastest-growing ASEAN economy, with a very young population

Burkhard Ziegenhorn, Head of Global Transaction Banking and Corporate Bank Coverage for ASEAN, Deutsche Bank

Ziegenhorn adds that more supply chains are shifting into Vietnam as many Asian companies expand and diversify their production hubs. One high-profile example is Foxconn moving some iPad and MacBook assembly work from China to Vietnam at the request of Apple.[9] This rerouting of supply chains brings opportunities for Deutsche Bank to work with local banks and corporates. Demand for supply chain finance support continues to rise. "Our strong supply chain financing platform enabled us to win a few mandates from large multinational companies," Quang says. Domestic producers are venturing forth with exports as well; Quang and Ziegenhorn report that "a small group of Vietnamese local corporates are setting up sales and production overseas – these include a local car manufacturer and food producer."

Superfast connectivity and the highest adoption rate of the internet in the region is helping innovation, as is the trend of Western-educated Vietnamese returning with fresh ideas. One recent example of such entrepreneurship is the free-rice-dispensing ATMs developed by Vietnamese corporates to alleviate pandemic-related hunger, an initiative which has received government blessing. Such domestic business innovation is also being replicated abroad, with several firms setting up operations in Europe.

With such solid growth fundamentals, the World Economic Forum (WEF) currently ranks Vietnam 67th in the world for competitiveness, just ahead of India and Brazil. The WEF recognised the country's improvements to its institutions, infrastructure, information and communication technology adoption, skills, product and labour markets, financial system, market size, business dynamism, and innovative capability.[10]

Weathering the storm

Vietnam's success in curbing the Covid-19 outbreak and its rise in the region's manufacturing supply chain allowed its economy to rebound to pre-pandemic levels very quickly. "It is one of the few places in the ASEAN region that has got the virus under control so far," reflects Ziegenhorn. Analysis by the International Monetary Fund ascribes the lessons of the 2003 SARS crisis as the root reason for the country managing the virus so successfully to date. Vietnam's rapid introduction of aggressive and cost-effective containment measures, and its depoliticised 'whole-of-society-fight' public health control measures, were also considered key reasons behind its containment of the virus.[11]

The pandemic has inevitably impacted tourism, airlines and related sectors, but others have been more resilient, resulting in a positive GDP growth of 2.9% in 2020. Vietnam also fared better than its peers in private consumption, which did not contract, but rose slightly by 0.6% in 2020. Supported by base effects, retail sales growth accelerated to 35% year-on-year in April 2021, from 4.9% in Q1 2021 and 1.8% growth in 2020, while investment growth also rose.

There is also improvement in investment data. FDI growth accelerated to +7.7% year-on-year in April 2021, compared to +5.7% in Q1 2021 and -2.8% in 2020, while exports surged by 44.9% in April 2021, as opposed to 25% in Q1 2021 and 8.1% in 2020. Deutsche Bank's Singapore-based Chief Economist Juliana Lee noted[12] that "Vietnam remains one of the favourite destinations for the China-plus-one strategy for global manufacturers, and its success in curbing Covid-19 infections further improved investor confidence."

In a world of high uncertainty amid sustained pressure from the Covid-19 pandemic, Vietnam's socio-political stability continues to contribute to its attractiveness for FDI investors. Investor appetite and FDI decisions can – like viruses – develop in unanticipated ways. However, as the view of the post-pandemic landscape becomes a little clearer, Quang believes that "the future looks bright". He adds that "the consensus on GDP growth for 2021 is now 7.3%, fuelled by a rebound in goods exports". This is slightly weaker than Deutsche Bank Research forecasts of 7.5% in 2021 (7.2% in 2022), but well above the pre-Covid five-year average growth rate of 6.8% .

The nation's scorecard on curbing Covid-19, weathering the economic storm and laying the groundwork for Vietnam's continued economic advancement suggests that the heirs of Lac Long Quan are doing him proud.

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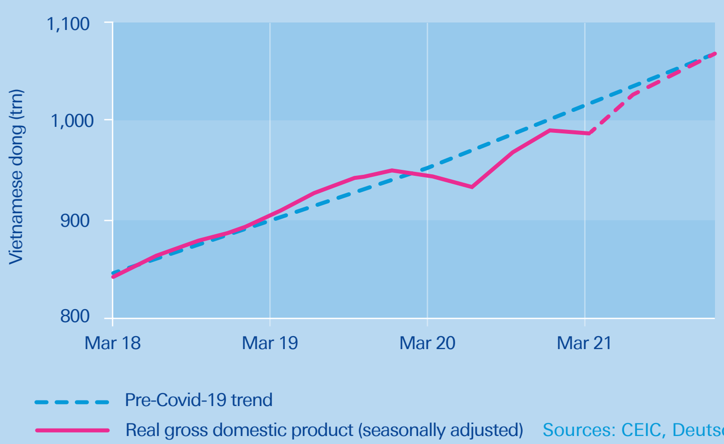
Figure 1: Vietnam's GDP to rebound back to the pre-Covid-19 trend



Sources: CEIC, Deutsche Bank Research

On the right track

When Jeremy Hamon took Primetals Technologies into a four-year ESG-aligned FX hedging commitment, the finance and treasury function brought the entire steel engineering business on board to ensure it performed to agreed criteria. *flow*'s Clarissa Dann explores the remarkable journey

As Head of Group Finance for the steel engineering firm Primetals Technologies at only 34 years old, it would be fair to say that Jeremy Hamon has enjoyed a meteoric rise up the career ladder to date.

His family are from Pontoise, a small town north-west of Paris that was one of the centres of the Impressionist movement in the 19th century. From a young age, he was immersed in the heritage of painters such as Vincent van Gogh and Camille Pissarro, who lived in Pontoise between 1872 and 1884.

Hamon continues to think in stories and pictures. They have helped him tackle the most complex of operational tasks in finance, he explains – the most recent achievement being the ongoing implementation of an entire corporate treasury system and operations into Japan's Mitsubishi Heavy Industries, Primetals Technologies' main shareholder.

This article takes a closer look at not only Hamon's remarkable career trajectory, but also profiles a pioneering steel engineering company that has aligned itself with the demands of the future. Climate change has become a clear megatrend in the steel industry, while customers demand advanced steel grades for higher performance. In response, the company has built a comprehensive portfolio able to combine both requirements. This focus on sustainability and technology is now a cornerstone of the company's financial management, with its landmark hedging concept linking currency options to sustainability goals.

> As a child I wanted to become an engineer in mobility because I loved the idea of making travel convenient – as you know, infrastructure is all about people

In the beginning

Our meeting would normally have taken place in Linz in Austria, where Primetals' main operation is based. Hamon commutes in from Vienna. But instead of meeting for a tour of the works, we are in video-conferencing mode. Despite the limitations of two-dimensional rather than three-dimensional interaction, Hamon's passion and enthusiasm shine through.

"I grew up in a family of entrepreneurs. After Algeria gained independence, my mother's family had to leave what was a French colony quite suddenly. My grandfather arrived in France with nothing and set up a successful retail business," he recalls.

Hamon's father worked as an accountant in the Paris-based mobility sector of German engineering conglomerate Siemens, thereby engendering an early curiosity in transport infrastructure. For many years he believed his father "worked on trains", unaware that he held a finance role. "As a child, I was fascinated that my father was part of all this. I wanted to become an engineer in mobility because I loved the idea of making travel convenient – as you know, infrastructure is all about people."

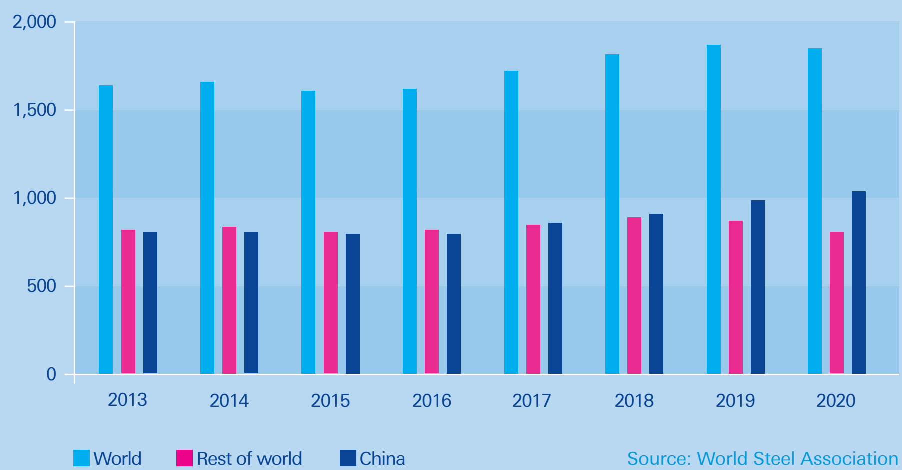
To the chagrin of his mathematics teacher, Hamon opted for a degree in political sciences at the Institut d'études politiques de Paris (often known as Sciences Po), the alma mater of many a French president, including current incumbent Emmanuel Macron. This was the right place for Hamon, given his sense of, and passion for, the wider collaborative and collective post-national approach to Europe after the fall of the Iron Curtain. "Cosmopolitanism is an individual state of mind," he reflects.

An MA in public affairs and social studies at Sciences Po between 2007–2009 followed on from his three-year bachelor degree. He speaks six languages including Czech and Polish, the latter having been honed as part of a year abroad spent at the University of Warsaw during his undergraduate studies. Then, with his heart set on a public-sector career, Hamon took a government internship in the cabinet of the Minister of Interior (Home Secretary), continuing as an employee. But he found politics failed to inspire and he grew frustrated at having to support a person rather than a purpose in such a role.

It was time to leave France. Although tempted by the US, he chose the shorter trip across the Channel for the next stage of his career. "I joined Siemens UK in a junior financial consulting role and moved to Guildford," he recalls. As it happened, as part of his UK-based responsibilities, he had to support reorganising Siemens' finance functions in South West Europe (including France). This resulted in the somewhat surreal experience of having to train and develop the team that would make Hamon Senior redundant, as financial functions became centralised across the company. Hamon adds: "He wanted to retire anyway, so it all worked out! My father jokes that he had supported me financially during my studies, only for me to get rid of him when I got started."

Hamon flourished at Siemens. "My first boss in the UK was a real mentor and he

Figure 1: Production of global crude steel, 2013–2020 (million tonnes)



Source: World Steel Association

PRIMETALS TECHNOLOGIES PORTFOLIO

Upstream technologies

- Iron, steelmaking and eco-solutions: transforming raw material using blast furnaces and environmentally friendly technologies for primary iron and steelmaking
- Mini mills and long rolling: smaller-focused secondary steelmaking facilities refining scrap steel to the highest standards into long products mostly used in construction
- Casting and endless strip processing for the production of steel slabs or resource-efficient hot rolled sheets reduced to the lowest possible thickness. Especially used for automobiles

Downstream technologies

- Hot mills for the thickness reduction of steel slabs into plates used in construction or machinery, sheet metal or rail tracks
- Cold mill, processing line and pipe mill for the strength, surface finish and tolerance improvements of smaller workpieces used, for example, in domestic appliances or pipes
- Electrics and automation: automating systems and processes for more efficient and modernised iron and steelmaking
- Metallurgical services: developing lifecycle partnerships for maintaining steel plants

let me do as much as I was capable of. So I wanted to repay that trust by exceeding his expectations." Eventually that led to a relocation to the firm's Munich headquarters as a foreign exchange (FX) specialist to support the roll-out of new systems and processes. "During the time I was in Munich, I was training people in Siemens – over 500 employees around the world – on foreign currency. This was to prepare them to become currency managers and take care of the currency risk for their part of the company."

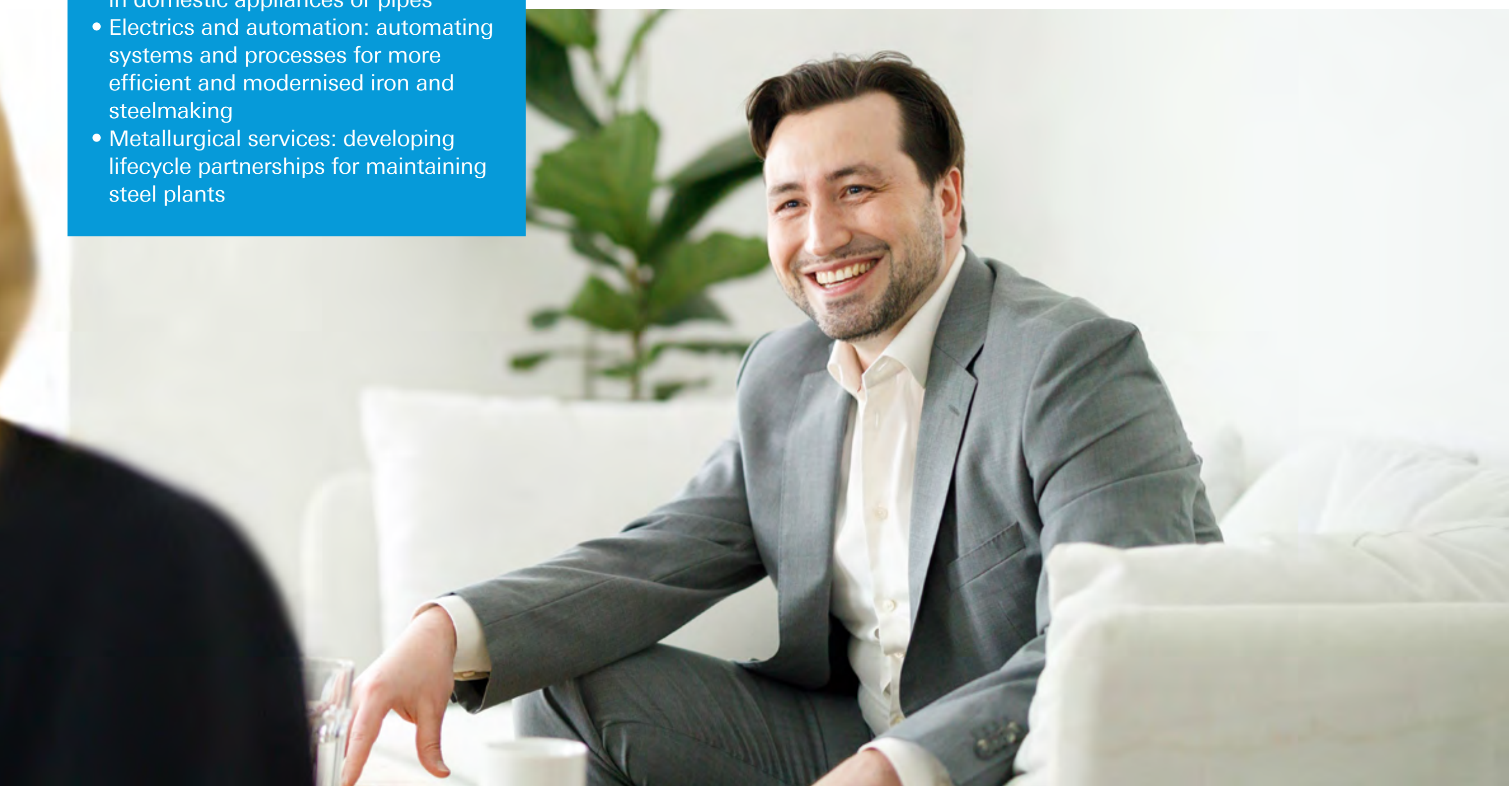
Rise of Chinese steel production

As Hamon notes, in the 21st century the steel industry has been dominated by China's rapid emergence as the world's major producer. Once China had opened up its economy with the 1978 market reforms and grown within the World Trade Organization, subsequent industrialisation and urbanisation saw huge amounts of investment in infrastructure, buildings and machinery. "In the 1990s, China's path in global crude steel production was negligible, but nowadays, it accounts for half the global output," he observes. According to the World Steel Association, China's production of crude steel (steel in its first sold or usable form such as ingots, slabs, and liquid steel for castings) in 2020 was 1.05 billion tonnes, out of a global output of almost 1.86 billion tonnes (see Figure 1 on page 14). The share of Chinese production increased from 53.3% in 2019 to 56.5% in 2020, when overall world production reduced by 0.9%.

Chinese steelmaking capacity was helped by the government granting steel companies independence from state control and allowing them to invest heavily in expansion. In addition, the opening up of China in the 1980s and 1990s to foreign direct investment and trading partners allowed the country's steel producers to gain vital access to modern technology.

Unfortunately, with such expansion came the coking coal that fired the furnaces – the environmental damage not having fully registered at the time. "The Paris Agreement was 20 years too late," sighs Hamon. In December 2020, S&P Global reported that steelmaking is China's largest consumer of energy. It cited a Ministry of Ecology and Environment report that also deemed the sector to be "the largest source of pollutants".[1]

The 2000s were a "golden age" of growth for steel producers, but a rate that once averaged around 7% has now plateaued, according to Hamon. "It's the first time



ever that the growth in GDP and steel market growth has not correlated," he adds. China overproduced and utilisation went from 85% to 70%, so now the global market is flooded with commodity steel – killing off many plants that became unviable. The UK steel industry was a particular casualty. A visit to the northern England city of Sheffield, where Primetals still employs technology experts, brought this home to Hamon, who before joining the company would have only related the 'Steel City' to the British cult comedy *The Full Monty*.

Steelmaking is a capital-intensive market and Hamon points out that many customer EBITDAs have fallen to below 10%. "It's really hard for steelmakers to stay afloat as it is a very capital-intensive market. You need to build heavy infrastructure to produce." While the market is flooded with commodity steel, the segment with sustained demand (not exceeded by supply) is the flat product requiring high levels of alloys for highest performances.

Birth of Primetals Technologies

As the steel industry entered the current low-growth environment, it was clear that future success depended on the right partnerships and market differentiation. Primetals was launched on 7 January 2015 as a joint venture between Siemens and Mitsubishi Heavy Industries, once the two engineering giants agreed to combine their strengths from a geographical and market-positioning perspective. From the very beginning, Hamon was put in charge of the Group Treasury for the new group.

The Linz-based operation, having developed its technology over decades after reconstructing what was Europe's largest steel plant after the Second World War, specialised in the upstream business – processing iron ore and creating the alloys (while prioritising emissions control). The

20+

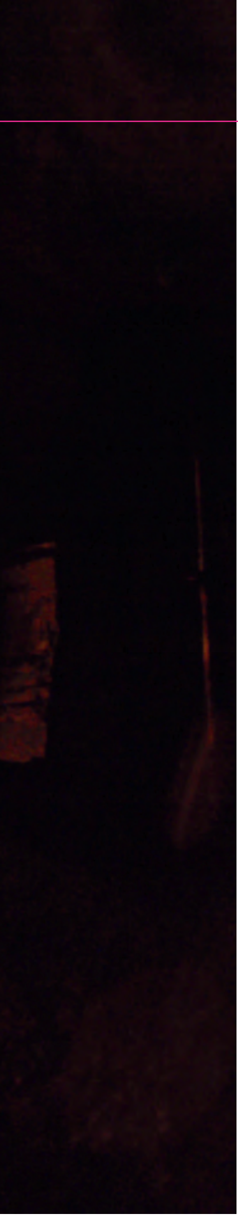
The number of currencies Primetals Technologies trades in on a regular basis

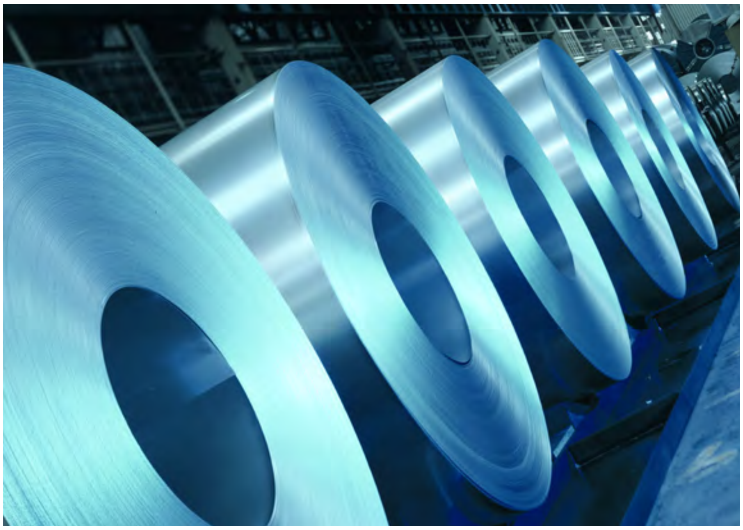
Japanese side was mainly downstream – the rolling and processing which defined the high quality of the end-steel product. "It would have been strenuous for each company to subsist on its own and even compete," adds Hamon. "And at the end of the day the steel business is mainly domestic, as it is mostly made and delivered in the country that needs it directly.

Hence our geographical coverage created synergies. Providing what amounted to a service business on site, we reached a large proportion of the global market."

In October 2019, Mitsubishi-Hitachi Metals Machinery, a Mitsubishi Heavy Industries group company, announced it would acquire the Siemens stake in Primetals, and the transaction was completed at the end of January 2020. Although the firm's headquarters are in London, Primetals' treasury operations are mostly run from Linz in the aftermath of Brexit. Hamon, who had already been structuring an integrated treasury operation as Head of Group Treasury, was then additionally made CFO of Primetals Technologies Treasury in February 2018, before becoming Head of Group Finance in December 2020. Once the company was wholly owned by the Japanese firm, he found himself having to centralise the treasury operation.

Images: Joseph Krpelan, Primetals Technologies





"They placed a lot of trust in me. Every day I learn a tremendous amount from Japanese culture, such as the dedication people bring to their company," he reflects.

Implementing treasury

Back in early 2015, when Hamon began building the Primetals treasury up from scratch, he was effectively given a blank sheet of paper. "There was nobody and nothing in place, as everything was centralised in Siemens, with a Siemens-developed system for cash management," he recalls. "I was asked to implement a treasury management system (TMS) in as lean a setup as possible, while having to reach best-in-class standards."

Over a five-year period, he took the treasury from "nothing, no people, no bank accounts and no process" to a fully functioning structure that centralises nostro accounts and can handle ESG-based FX trading.

Once Primetals was wholly owned by Mitsubishi Heavy Industries in January 2020, he was asked to expand the function to the wider group.

The core treasury team rose from zero to eight, with more colleagues spread across the UK, Austria, Brazil, China and India. Once his role expanded to Head of Group Finance, it brought the numbers up to 30 globally. He installed the BELLIN cloud-based TMS platform because it was "so easy to use". Customisation followed as the treasury function developed, with BELLIN founder Martin Bellin and Hamon working together (evidenced by a number of engaging videos on the former BELLIN website) on the improvements. "We worked together on building a payment factory and artificial intelligence capability on fraud prevention, as I always try to pioneer as much as possible to get the development that centralised treasury departments need," he says.

Hamon explains in a BELLIN video, titled 'Is an in-house bank the right option for you?', that there are two main points in the in-house banking process:

- An internal one of mapping one standard payment format in an affiliate to any format required outside; and
- An external one of sending that format aligned with each bank to the many banks around the world.

Daily routine

What of Hamon's daily routine for keeping on top of everything? Unsurprisingly for a millennial 'Generation Y' professional, the first port of call is his iPhone: "The first two things I see each day on my phone are the cash position and then the FX rates." While he checks that the company can manage everything it is contracted to deliver, he has to keep on top of the FX risk during a customer journey. At the beginning of a bidding phase for a potential customer project, a price has to be committed. However, Primetals doesn't know until the end of the bidding process whether the project will proceed. If it does, it is important that the pricing ensures the company is selling within the right range. Otherwise, with FX moving in the wrong direction, the company could end up selling at a loss.

Hamon makes a point of avoiding non-essential meetings, keeping his calendar free for managing exceptions. "I don't want my day mapped out," he admits. He also keeps administration to a minimum by ensuring there is just one bank account per currency for the group and that everything runs through that account. "I don't like bank accounts in general, which is strange for a treasurer," he smiles. But there is a practical rationale behind it – a small number of banks where the relationship is intuitive, the technology state of the art and the pricing sustainable is much easier to manage, particularly when the main need is liquidity provision and FX services. "It will be detrimental on the mid-run to the quality of the rates we get if there are too many banks all quoting against each other," he explains. "A bank, at the end of the day, will give us a good rate for a month and after acknowledging the adverse effect will end up adjusting margins accordingly."

FX needs

Primetals trades in more than 20 currencies on a regular basis, so banks are selected for their strength in each currency and their ability to net their exposures in that respective currency internally. As Hamon notes, "that has an obvious impact on the pricing". FX structuring expertise is particularly important to him and "really supportive whenever we need more of a deep dive into the strategy we are trying to implement".

He uses Deutsche Bank's Maestro on Autobahn platform for routine FX flows traded on the multibank platform. This takes all the reported exposure Primetals has on a group level and alerts Hamon of the FX trades needed to mitigate them.[2]

"Just imagine our treasury system where we have many people in the world every day inputting their foreign currency risk," he says. "They're adjusting cash flows and timelines because business is moving, customers prolong payments, or we might have to supply earlier than planned. All this data – thousands of lines of it – goes into Maestro, and based on this Maestro tells you that you need to perform these certain currency swaps." This, explains Hamon, is the essence of managing the liquidity and dealing with non-strategic hedging.

A typical case where he would turn to the FX Structuring team at Deutsche Bank for strategic input would be when deciding whether to bid or not bid on a project. "Suppose we bid on a project in Mexico with a customer and the rates move against us because of Covid-19; we end up signing a project that is lossmaking from the outset. So we need to deal with this and potentially hedge ourselves with optionality accordingly."

> There was nobody and nothing in place – I was asked to implement a treasury management system in as lean a setup as possible, while having to reach best-in-class standards

Climate change

For Hamon, there are two megatrends in the steel industry: digitalisation and sustainability. Crude steel production makes up 8% of global greenhouse gas emissions. However, even if it became possible to extract it with zero emissions, iron ore still has to be got out of the ground, he adds. Two disasters in Brazil highlight the environmental and social costs of getting iron ore extraction wrong.[3]

In 2015, the collapse of the Fundão tailings dam, which was holding millions of litres of wastewater from an iron ore mine, devastated the local area and polluted the water supply for hundreds of thousands of people in the region, while the Brumadinho dam disaster in 2019, which ranks as Brazil's worst industrial accident, resulted in the deaths of 270 people and destroyed an entire village.

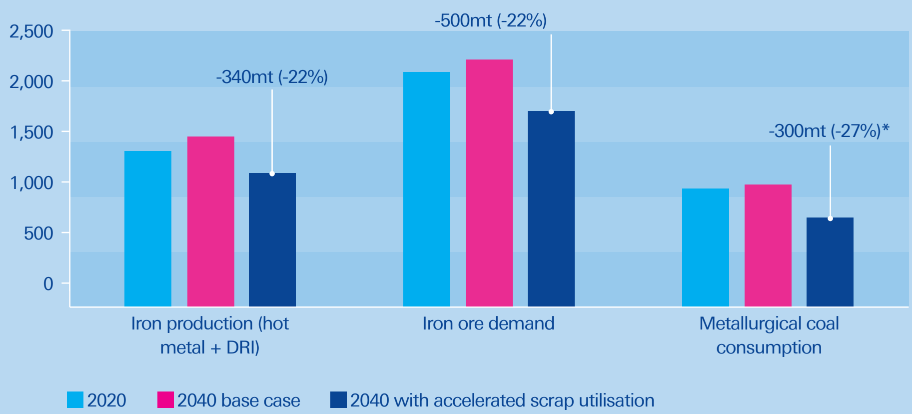
Everyone wants stronger alloys for steel, so mining is not going to go away – but it needs to be done more responsibly, Hamon stresses. "Until a few years ago, the availability of scrap steel for recycling was still low in China, while most production required freshly mined pig iron, but now more steel can be used from scrap on more environmentally friendly solutions."

This is helpful but falls short of fully meeting demand. As analysts Wood Mackenzie put it, "Virgin ironmaking is emission-intensive, so the first logical step to reduce emissions is to reuse available scrap. But scrap cannot meet all metallics requirements – stock is limited, collection infrastructure is fragmented, and scrap quality can restrict recycled steel's use."[4]

The Wood Mackenzie analysis goes on to explain how "the two main ways to produce iron will follow different paths to decarbonisation":

- Smelting. But because coal is an integral part of the process, emissions are unavoidable and technology development is focused on the capture and re-use of CO_2;
- Direct ore reduction using gas. Synthetic gas and natural gas have long been used in these processes, but the focus has now shifted to the use of hydrogen, which offers near-zero Scope 1 emissions. However, at the moment it is a trade-off with higher Scope 2 emissions from

Figure 2: Virgin iron production and raw materials demand (million metric tonnes)



Source: Wood Mackenzie

*Metallurgical coal is not consumed in DRI, which offsets part of the decline in hot metal production

> hydrogen produced from natural gas. "Low-carbon hydrogen will have to scale up massively before it can offer meaningful emissions-reduction in the steel industry."

In summary, the Wood Mackenzie analysts reflect that "steel decarbonisation will be a technological evolution where three levers will come into play – scrap, alternative ironmaking and carbon capture". Hamon returns to his observation that the Paris Agreement was 20 years too late. If the environmental impact had been considered before China's boom in steel production, technological expertise could have found a way to build zero-emissions steel plants if supported by the right financial incentives for steelmakers. Right now, he adds, there is clearly insufficient green hydrogen,[5] but this could change when the cost of production comes down.

The opportunity to be part of this solution is something Hamon finds very exciting: "As a technological provider, we are ready to support steelmakers." But to do this, there needs to be more regulatory support. While the EU Taxonomy is, in his view, "a really good move" and "financial players are facing responsibilities and identifying what is ESG and what is not in terms of what they support", greening steelworks is currently still a greenfield project.

Aligning ESG to FX hedging

When Deutsche Bank approached Primetals to outline what would become the world's first hedging concept that links currency options to sustainability goals, Hamon jumped at the opportunity. "I took this as a personal challenge," he enthuses. Signed on 5 November 2020, the framework agreement enables Primetals to hedge its currency risk with FX options with Deutsche Bank over a four-year period.

If the company fails to meet the agreed sustainability targets, Primetals Technologies pays a predefined sum to a contractually defined non-government organisation. Any currency hedges executed by Primetals must comply with the criteria of the new *Sustainable Finance Framework* that Deutsche Bank published in July 2020. This sets out the classification of ESG financing, which is aligned on a best-effort basis to the EU Taxonomy Regulation.[6]

The targets – in this case framed by Sustainable Development Goals 9 and 13 – were developed in consultation with external independent consultancy Environmental Resources Management, which will be monitoring Primetals' ambitious targets, with a remit to annually assess whether or not the targets have been met. Hamon explains these targets are mostly "share of green technology sold expressed in percentage of total order entry" and "research and development expenses on green technology".

The process of getting buy-in for the deal, says Hamon, helped bring about more cohesion and purpose in not only his own treasury team but also within the wider team: "Although we know our technology, a lot of us didn't know how to quantify in sales terms for example how green – or not – the products are that we were sending to customers, so going through this exercise was hugely beneficial."

When he was in discussions with Deutsche Bank Corporate Bank's CFO and Chief Sustainability Officer, Gerald Podobnik, they agreed that every corporate banking product could prompt this sort of initiative. "I wanted to somehow convince other treasurers they could take this step and engage their finance organisation in this sort of commitment," Hamon says.

"We plan to develop more and more financial products that are linked to sustainability targets," said Podobnik when the deal was announced. "In so doing we will assist clients like Primetals Technologies in implementing their sustainability strategies and monitor their achievements over the longer term."

Hamon had to manage nervousness about what could happen if key performance indicators were too ambitious for such an industry and encountered reputation risk as a listed Japanese corporate, as reputation matters more than the financial benefit of the scheme. And although Primetals can't position itself as a green technology business entirely, it can demonstrate that it helps its customers deliver energy savings in their transition to greener steelmaking. "We are on the right track," he says modestly.

Hamon's concluding railway metaphor seems rather apt given his early interest in trains and transport infrastructure, and the fact that Primetals has been instrumental in engineering machinery that is producing long-rolling products forming many of the world's railways. With Hamon in the driving seat, it's clear that Primetals' Treasury team is travelling firmly in the right direction.

CV: Jeremy Hamon

December 2020
Head of Group Finance, CFO, Primetals Technologies Treasury, Linz (Austria)
February 2018
CFO, Primetals Technologies Treasury, Linz (Austria)
January 2015
Head of Group Treasury, Primetals Technologies, London (UK)
2012–2015
Associate Senior Risk Consultant, Siemens Financial Services GmbH, Munich (Germany)
2008–2012
Financing Consultant North West Europe, Siemens Financial Services GmbH, Camberley (UK)

EDUCATION

2007–2009
Institut d'études politiques de Paris
MA, Public Affairs
2006–2007
University of Warsaw
International Relations
2004–2007
Institut d'études politiques de Paris
BA, Political Sciences

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[4] See https://bit.ly/32KrmRD at woodmac.com
[5] For more on green hydrogen, see https://bit.ly/3dL1lbe at flow.db.com
[6] See https://bit.ly/3xlB8l0 at db.com

Regulation and splinternet

A concept first envisaged a decade ago, the splintering of the internet is moving closer to reality as regulation attempts to impose both limitations and new responsibilities, reports Boon-Hiong Chan of Deutsche Bank Corporate Bank's Market and Technology Advocacy team

Recent years have seen a growing realisation regarding the great economic and manipulative power of data and information. They have also been marked by a series of human tragedies[1] involving encrypted data, high-profile computer compromises, audacious cybercriminal ransomware hits, the monetisation of hate speech, and increased geopolitical dynamics; each exposing uncomfortable cross-border dependencies. These have led to greater legislative enforcement against abuses and regulatory scrutiny of cyberspace/digital activities, requiring firms to adapt to a fluid and ever-changing landscape.

As a result, the trending global regulatory focus on cyberspace and its participants addresses a diversity of areas encompassing cybersecurity, transparency of online content governance, personal data privacy, non-personal data confidentiality, data localisation and mirroring, outsourcing and the use of cloud service providers, encryption backdoors, decryption, competent authorities' access to data (whether at a national level or overseas), and measures to rebalance the digital 'winner-takes-all' business models. Recent examples* of regulatory attention include:

Cybersecurity

The Budapest Convention, which came into force in 2004, is an international treaty that focuses on cybercrime, which 65 countries have ratified. The Convention seeks to harmonise laws related to cybercrime and support international cooperation in the fight against cybercrime, while it also serves as a limited mutual legal assistance treaty. An update[2] to the Convention is ongoing to reflect new criminal justice challenges and to support more effective cross-border cooperation on issues such as electronic evidence. The final protocol is expected later in 2021.

In late July 2020, China's Securities Regulatory Commission issued a consultation paper on new rules for the reporting, investigation and management of cybersecurity incidents in the securities and futures industry.[3] It aims to improve incident classification methods and accountability and incident handling, among other areas. The consultation period closed on 11 January 2021.

The European Commission published a new EU Cybersecurity Strategy[4] in December 2020, which covers three action areas:

- Resilience, technological sovereignty and leadership;
- Building operational capabilities to respond to and deter cyber threats; and
- Increasing cooperation for a more global and open cyberspace.

A further two legislative proposals were also issued – a new draft Directive on the resilience of critical entities, and a revised Directive on measures for a high common level of cybersecurity across the Union.

Decryption

A new decryption platform was launched in December 2020 by the European Union Agency for Law Enforcement Cooperation (Europol), developed with the European Commission's Joint Research Centre, that increases Europol's capabilities to decrypt information lawfully obtained in criminal investigations.[5]

Its decryption goal has much in common with Australia's Telecommunications and Other Legislation Amendment Act of 2018, under which law enforcement and intelligence agencies can request technology companies to provide technical assistance including decryption.

A similar policy direction was also reflected in the latest (October 2020) call by the UK, US, Canada, Australia and New Zealand – the so-called 'Five Eyes' countries – together with India and Japan, for the introduction of encryption backdoors for law enforcement.

Transparency

The Digital Services Act (DSA) was published in draft form by the EU in December 2020.[6] The DSA defines four categories of online services, with each having increased regulatory obligations. They include transparency reporting,

Image: iStock

details of automatic means used for content moderation, disputes, advertising transparency such as identifying the sponsors of advertisements, and transparency of the main parameters used in recommendation systems.

Transparency reporting as proposed in the DSA is similar to transparency reports that US-based technology companies began issuing around 2014, when they won the right to publish reports on the volume and type of national security requests they receive.

In the US, the SAFE TECH Act announced in February 2021[7] outlines amendments to Section 230 of the Communications Act of 1934.[8] Its central proposition is that social media platforms should have accountability for certain types of content; for example, if promoting paid advertising that was harmful.

Antitrust

The EU published the draft of the Digital Markets Act in December 2020.[9] This proposed regulation will focus on the largest digital platforms to calibrate competitive and bargaining powers. Those entities coming within its auspices will be subject to requirements that include no combining of personal data from different (related) platforms without consent; no restrictions on users who want to switch to third-party apps and services despite using the platform's operating system; and data portability.

China published the final version of the Anti-Monopoly Guidelines for the Platform Economy[10] in February 2021.[11] These guidelines support regulators in applying restraints on internet platforms engaging in monopolistic practices. They define in-scope platforms and identify four types of antitrust activity, including abuse of a dominant market position and using administrative power to restrict competition.

Data sovereignty

India's authorities have consulted on the proposed Non-Personal Data Framework since publication of the draft in July 2020.[12] This comprehensive framework covers anonymised personal data and aggregated data created and collected in India. It would govern "inextricably linked" personal and non-personal data, an expanded definition of what constitutes data business, the

> The European Commission published a new EU Cybersecurity Strategy in December 2020

concept of "high-value datasets", and proposed public, community and private non-personal data classification to guide the level of compliance. Data transfer across borders could potentially be impacted. The Framework also introduces new roles and responsibilities, including those for data custodians and data trustees.

In 2020, China proposed a global initiative on data security, regarded as a counterproposal to the US's Clean Network coalition-based initiative to address ongoing threats to data privacy, security and confidential information from aggressive intrusion. The Chinese proposal called on states to "foster an open, fair and non-discriminatory business environment", and suggested that countries should "stand against ICT activities that impair or steal important data of other states' critical infrastructure". How both initiatives by the world's two largest economies subsequently develop will be important for industries and businesses.

In the landmark Schrems II judgment, the Court of Justice of the European Union invalidated the EU-US Privacy Shield framework, and ruled in favour of stricter requirements for the transfer of personal data that uses standard contractual clauses.[13] As a result, companies in the EU cannot legally transfer data to US-based companies through the Privacy Shield framework. An EU Parliamentary publication[14] had previously highlighted concerns regarding "cryptanalytic and quantum computing" impacts on encryption effectiveness.

In January 2021, ASEAN launched the ASEAN Model Contractual Clauses (MCC) for Cross Border Data Flows.[15] Recognising the different development stages of ASEAN member states, the MCC is a voluntary scheme that provides a standard for ASEAN private sector companies to follow when it comes to the transfer of personal data.

'Splinternet' impact

Such related regulatory initiatives are far-reaching. In the foreseeable future, they include the fortification of jurisdiction boundaries through a country's exercise of greater autonomy over its part of the global internet, and the cyberspaces of China, India, Europe, the US, and even ASEAN are becoming distinctive. What in 2010 *The Economist* first dubbed the "Balkanisation of the internet" through regulations – also called "cyber-Balkanisation" and "splinternet" – is becoming more visible today.

This trend will extend to the operating models of businesses, including cross-border scalability, and back-up and recovery planning. For example, uses of application programming interfaces across jurisdictions and the data that can be pulled, processed and stored can be affected. Machine learning training needs to factor in potential gaps in data sets, while cross-border uses of distributed ledger technology for financial activities and digital asset transactions can run into complex legal and regulatory matters.

Businesses' policies, processes, systems and standards will need to be continuously updated in line with digital operational resilience regulations, and overlapping extraterritorial reaches. The heavy penalties for non-compliance will necessitate informed attention from C-suite executives.

**Regulatory updates as at 31 March 2021.*

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All-in for Europe

To achieve its economic potential, should Europe move away from its 'taking part is everything' stance and compete to win? Deutsche Bank's Stefan Hoops considers who holds the chips

At the beginning of the 21st century, technological, geopolitical and societal factors, complemented by exogenous shocks and crises such as the Covid-19 pandemic, have brought about rapid structural change in the economy. For most companies across most industries, the pace and scale of the associated adjustments pose a significant challenge.

At the same time, the upcoming transformation is developing into a global race in which market shares are shifting and market structures are being reshaped. It's clear that, in free markets, the better idea and the successful orientation of the business model should decide the competition. However, this only applies if the framework conditions are as equal as possible for all market participants.

Is this currently the case, or are European companies now confronted with a series of locational disadvantages? Should Europe ensure equal opportunities for its companies, and if so, how? And what contribution can European financial institutions make? What strategic options are there to ensure Europe's sovereignty in important areas such as data and payments? How should Europe position itself in a bipolar world dominated by the US and China?

In order to ensure the long-term competitiveness of European companies, these questions must be answered swiftly and a decisive game plan for the coming years must be defined. The respective strategies and tactical approaches of the other major economies should be taken into account.

Royal flush?

Imagine a poker game between the US, China and Europe. The US is clearly the chip leader; it has the most chips on the table, which allows it to play with complete confidence. It studies the facial expressions and behaviour of the other two players, uses all the tricks, bluffs, and sometimes goes all-in to force a decision. It does everything it can to keep its leading position.

China, on the other hand, behaves like the successful self-made millionaire who is happy to play a game with friends from former university days. China smiles at fellow players, sometimes it calls and sometimes it folds, and a clear strategy is not always recognisable to outsiders. Above all, China always remains relaxed, because it knows, "I have the deepest pockets, I have the most money – and at some point during the evening, I will win."

Europe is, in theory, best prepared. Europe has read every book on poker and has absorbed the mathematics behind the game. It knows exactly who bids how much and what (applying the rules of probability) the next move will be. However, Europe never bluffs. What's more, Europe believes that none of the other players ever bluff either. Europe plays rationally at all times, never misleads and assumes that the other two players behave likewise.

You can probably guess how the poker evening will end. Europe leaves the table as the loser. At home, Europe confesses to its partner that, while it did not win, it always stuck to a mathematically sound game strategy and therefore actually played the best. The others had cheated or simply been lucky – and who would want to win like that anyway?

Similarities between the course of this hypothetical poker game and developments in the real world at the beginning of the 2020s are not coincidental. With its economic, technological and military strength and the dollar by far the most important world reserve currency, the US dominates global politics and the world economy just as the chip leader dominates poker. In a massive race to catch up, China has emerged as the second global superpower, with a gigantic domestic market of 1.4 billion people and a political leadership that is patiently, but consistently and adroitly, exploiting its economies of scale. In doing so, China sometimes behaves cooperatively, sometimes adopts a wait-and-see approach, and can sometimes be threatening. At times the leadership goes 'all-in' – for example, in the case of Hong Kong, where there are no compromises.

> "China has emerged as the second global superpower, with a gigantic domestic market of 1.4 billion people and a political leadership that is exploiting its economies of scale

Europe may also behave consistently as a rule, but this is especially true when it comes to adhering to rules, values and agreements. Even when others fail to comply with these rules, Europe does not change its behaviour – at least, it has hardly done so at all to date. This attitude may be due in part to the heterogeneous nature of Europe, or to a lack of unity within the EU27 circle of countries.

However, Europeans have a growing awareness that their strategy and the pace of its implementation so far are hardly fit for the future. Several global trends are having a considerable impact on the economy, shaking up previous structures, questioning traditional behaviours and setting a new course for the coming decades.

Drivers of change

While some influencing factors are unique to individual countries, others impact the future competitiveness of companies and therefore require a significant transformation of many industries. In addition to a permanently low interest rate environment, these drivers include a change in consumer demand, 'glocalisation' (semantically, a combination of globalisation and localisation), the influence of digitalisation on business models and the inclusion of environmental, social and governance (ESG) criteria in capital allocation.

Whether the Covid-19 pandemic has triggered or merely accelerated sustained changes in consumer behaviour can be passionately debated. Combined with societal trends such as the fight against climate change, which has an impact on both the demand for goods and the mode of production, the implications for the development paths of different industries are enormous.

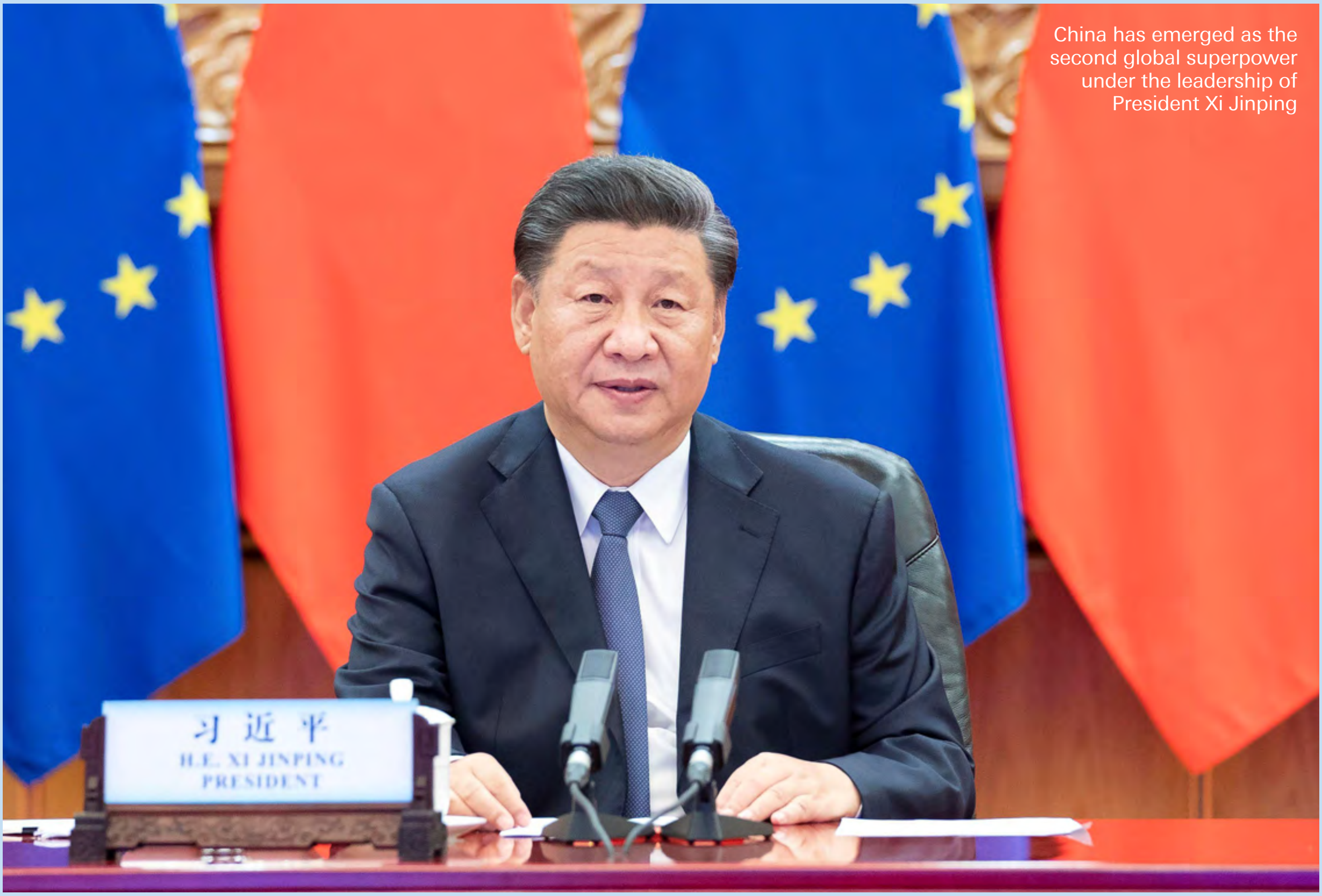
Comprehensive transformation programmes are the result. Industries that have been large and successful, such as aviation, now struggle to survive. All automotive manufacturers and their suppliers are reducing their focus on the internal combustion engine and – following corresponding political requirements and changes in consumer demand – are investing in electric vehicle technology. The automotive sector is probably the most obvious example of an industry that needs to reposition itself. But it is by no means the only one that has to follow a new development path if it wants to operate competitively and profitably in the future. Traditional industries and sectors are no longer guaranteed to survive in this new environment. Painful adjustment processes are sometimes unavoidable.

Another trend that affects an export-oriented economy such as Germany's is the so-called glocalisation. In past decades, companies could assume that the world economy would develop more or less in step with ever-increasing globalisation. Some individual world regions may have grown faster, others somewhat slower, but any deviation from the dynamics of the world economy was limited.

After a phase of deglobalisation, Covid-19 led to a rapid renaissance of the local and regional. This was triggered by the fact that the lockdowns had severely disrupted international value and supply chains, with no quickly implementable alternatives. The very different growth and recovery dynamics in individual countries reinforce the local aspect of glocalisation. It is therefore increasingly important for companies operating globally to understand which local conditions, demand impulses, and also rules they have to follow for international success.

The fourth globally relevant trend is increasing digitalisation. In many cases, this means much more than just a further sales channel for products and services. In addition to optimising and accelerating existing processes, it is creating entirely new business models or ways of doing business.

One major development enabled by digitalisation is service-based business models, the so-called 'Asset-as-a-Service'



China has emerged as the second global superpower under the leadership of President Xi Jinping

(AaaS) offerings. The starting point for AaaS was the behaviour of a rising class of consumer that places less value on owning a car, a holiday home or another product. These consumers prefer to use the asset (and pay for it accordingly) only when they need it. Due to its obvious advantages, this calculation is now spreading in industry as well. If, for example, a company no longer has to buy printers for offices or forklifts for warehouses, but pays for the use of these items, it converts fixed capital expenditure into variable expenditure for business operations. For the providers of these AaaS models, there are a variety of implications; for example, with regard to data management, financing structures, logistics and payment processing.

ESG frameworks

A final overarching trend that is becoming increasingly relevant for business is sustainability. This is often described using the abbreviation ESG, i.e. sustainable business under the criteria of environment (environmental protection), social (socio-politically responsible business) and governance (sustainable and transparent corporate management and supervision). The way in which these criteria are dealt with increasingly determines which companies get access to equity and debt capital and on what conditions. It is now standard practice for most major international capital-gathering institutions to analyse and evaluate a company's ESG performance before making investment decisions. According to estimates by Deutsche Bank Research, by 2030 around 95% of all investment money managed worldwide will be invested with the help of ESG criteria.[1] Companies must therefore develop a sustainability strategy and establish active stakeholder management if they want to attract capital flows.

Banks are challenged by these global trends in a variety of ways. On the one hand, they must adapt to these developments, and on the other hand, the regulatory environment continues to tighten. They must therefore adjust accordingly. More importantly, they have to create financial services for the new economic world and at the same time enable companies to finance comprehensive transformation and restructuring programmes.

Obviously, the free market should determine success and failure in competition. In order for the better ideas and the better management to win the competition, global equality of opportunity must be ensured. But are the framework conditions actually fair, or to the detriment of European companies? In what ways can European banks help to compensate for competitive disadvantages?

The framework conditions for financing in Europe differ considerably from those in the US or China.[2] The US, for example, has the advantage of a much broader and deeper capital market through which companies can comparatively easily obtain venture or mezzanine capital, and thus also financing for structural change projects. In China, the state undertakes this task extensively and provides companies with the necessary funds in a variety of ways. But what might work effectively there cannot also be a viable path for Europe from a regulatory perspective due to the negative experience of strong state intervention.

Nevertheless, Germany and its European neighbours reveal a number of weaknesses in the financing of substantial transformations. It is true that state institutions provided capital quickly and abundantly during the Covid-19 crisis. However, this has mainly been in the form of senior secured bank loans, with often conservative guidelines on the use and repayment of funds. While this solves liquidity problems, it primarily maintains the status quo. Genuine venture capital, which could be used to invest on a large scale in research and development or the strategic repositioning of a company, is also necessary.

Broader support

One of the most urgent tasks for European financial institutions is therefore to develop a much broader and more innovative set of debt and equity options and make them available to companies. A fully integrated capital and banking union in Europe is needed to strengthen the clout of European financial players. However, the final establishment of such a union will still take some time due to the large number of issues involved. In the meantime, a collaboration of private and public capital can make a much-needed start and improve the supply of debt and equity options. One approach here is cooperation via support programmes that enable targeted transformation investment, while at the same time using market mechanisms wherever possible.

Additional requirements and opportunities for banks also arise from the phenomenon of glocalisation. In this changed environment, multinational companies can only exploit economies of scale if they also meet local framework conditions. In doing so, they must comply with a multitude of regional specifics, which often also affect specific types of finance, such as supply chain and trade finance. Banks have the task of serving as a global 'Hausbank' for companies by combining local knowledge with a global understanding of customer needs through their presence in many countries.

Rules and structures

A particular challenge for the European economy is the issue of payment infrastructure. For simplicity, this is understood broadly here to include both technical infrastructure and the 'provision' of a currency to enable payment flows in the first place. While the former, in our perception, is mainly offered by private companies, payment flows in its own currency allow the state to exert influence. Since much of international trade finance, commodity trading and a high proportion of capital market issues is denominated in US dollars, these payments fall within the territory of US regulators. The US can therefore pick and choose who uses its currency and in recent years has increasingly exercised this power of intervention.

The area of technical infrastructure, defined here in simplified terms as the range of payment options, is also dominated by American companies. In most cases where European consumers make digital payments, they use US-controlled payment systems, either one of the popular credit cards or, increasingly in recent years, PayPal or Apple Pay. China has not accepted such US dominance and has long since established its own payment options, such as WeChat Pay and Alipay. Europe, on the other hand, has no payment system of its own for private individuals that can be used Europe-wide, apart from individual national offerings such as the German Girocard.

Theoretically, this could work, at least in a world where everyone abides by the rules and fair play is the highest priority. In reality, however, the current payment infrastructure set-up has long since proved to be a weighty disadvantage to the bloc. As in poker, Europe is becoming more vulnerable to bluffs and all-ins. After all, whoever controls the payment infrastructure also has, in effect, sole authority to interpret critical issues such as money laundering. It would be better to have a close international exchange to establish a common understanding and a coordinated approach.

Europe's weakness became apparent during the US sanctions against Iran. While the European Commission (EC) encouraged companies to do business with the country, the Americans prohibited this and threatened sanctions for anyone that did so. The result was clear: Europe's economy complied with the American instructions and not with the recommendations of the EC.

The power to set the rules for international payments has become a potent geopolitical tool. China is placing great emphasis on a digital central bank currency in order to be able to offer an alternative to the US dollar,

Increasing digitalisation is creating entirely new ways of doing business at least in the digital world. Europe, on the other hand, still seems to trust that this strategy should not be necessary between friends. However, giving up our own pipelines through which financial resources flow is comparable to a situation in which our domestic water and electricity pipes are controlled by our neighbour. Would we really take the chance that they would not cut off our electricity in the event of a neighbourly dispute? Or would we prefer to have sovereignty over our pipelines?

Europe's building blocks

To ensure Europe's sovereignty, three building blocks are key in the area of payment infrastructure:

- The digital euro;
- A usable European and Europe-wide alternative to American credit cards and online payment options; and
- The denomination of global flows of goods – i.e. trade and trade finance – in euros.

This will only be possible through concerted action by politicians, regulators, commercial banks and businesses. In this way, the digital euro can help Europe retain sovereignty and autonomy over the use of currency and data. To make this possible, the focus should not only be on the necessary rules and regulation, but also on the potential future benefits for end consumers and trading companies. The EC has set itself the goal of strengthening the international role of the euro and making it more resilient. It therefore calls for and promotes euro-denominated investments and trading contracts, commodity derivatives and reference indices.

A highly developed technical infrastructure is needed for another reason. The increased digitalisation of the economy and the emergence of new business models such as AaaS are generating enormous amounts of data. While the digital linking of products (the Internet of Things) is still in its infancy, one can already guess what insights the resulting data will offer. But one central question remains unanswered: who actually owns the data generated by the Internet of Things? And who can use it, and for what purposes? Europe has accepted that American big tech companies have a near monopoly on collecting and analysing consumer data. But should Europe also give up the data generated by AaaS business models without a fight? Some joke that while the US has the 'Internet', Europe has the 'Things'. Yet this is actually a starting point that can be built upon, or – to stay with the card game analogy – a pretty good hand.

> "The increased digitalisation of the economy and the emergence of new business models such as AaaS are generating enormous amounts of data

In this context, banks need to enable the execution of AaaS models through a variety of innovations. What is required, for example, are data trusteeships, including the ability to technically record exactly whether and for how long a corresponding product has been used, and by whom. The implementation of payments with very small amounts is also required. Then there is the need for new forms of financing for AaaS providers.

Take a large manufacturer of 3D printers who wants to offer these machines in future, not only for sale but also on a usage basis. Who should then own the machine, which can easily cost upwards of half a million euros? The manufacturer, the end customer or possibly a third party? How should it be financed? And finally, how should the use be recorded and billed?

Banks must find answers to these issues if European companies want to tap into the opportunities of AaaS for themselves.

Similarly, banks are something of a natural partner for companies in ESG management. After all, the more able companies are to convince the capital markets that their supply chains are sustainable, that they produce in an ESG-compliant manner, and that they prepare the corresponding data and information transparently, the easier it is for them to access equity and debt capital. Advice on green bonds and bank loans is an obvious starting point for banks here. In addition, however, an even broader range of ESG-compliant financial services needs to be created by banks to support companies in their individual ESG transformations. Examples of this are financial contracts with ESG-dependent conditions, or options for the verification of sustainability-relevant supply chain data. All this requires an intensive dialogue between banks and companies. This will deepen not only the exchange of data, but also the advisory dialogue.

The structural change and need for adaptation triggered by these global trends is considerable, no question. However, it also offers great opportunities for European companies and their banking partners. The basic prerequisite for this is, of course, that Europeans – to return to the poker game analogy – also play their hand consistently. This should start with us finally going all-in on the subject of the single market; more people live in the 27 EU member states than in the US. But in many areas there is still no real common market. As a result, companies are not achieving the economies of scale available.

Position of strength

The completion of the European single market should therefore be driven forward quickly with harmonisation of patent laws and data standards, and the establishment of a capital market and banking union, to name but a few structural milestones. This would not only boost growth and the integration of economies (which are still largely national) into a genuine European domestic market, but also help the EU to remain attractive to its member states and help it defend its values internationally.

Last but not least, a strong position in the European home market is also the basis for tapping growth potential in other parts of the world. This is especially true when serious changes occur, such as those in the Middle East. The US had already begun to withdraw from this region under President Barack Obama, not least because it is steadily less dependent on oil imports. It can be assumed that the new administration under President Joe Biden will continue this course. Conversely, China is expanding its influence in the Middle East. In the meantime, the government in Beijing has concluded several economic agreements with states in the region and will probably further intensify relations, for example with Saudi Arabia.

China is acting in the Middle East like the patient poker player with deep pockets. The Middle Kingdom is benefiting from the fact that this region is on its way from being

The US currently dominates global politics and the world economy

a net capital provider to a net capital taker. In recent years, individual countries there have issued government bonds for the first time – mainly due to the comparatively low oil price. The trend is likely to continue in this decade.

Regional partners

The new constellations formed after the Arab Spring in the Middle East also offer opportunities for European industrial companies and banks. However, this presupposes that Europe does not remain in the previous role of a largely passive poker player, but plays the game more proactively and courageously. The withdrawal of the US has created considerable space, offering opportunities for strategic partnerships.

The same is increasingly true for Africa. China has systematically and adeptly established itself as a strategic partner there over the past decade. In addition, it has secured raw materials from the continent for the long term with many generously financed infrastructure projects, from dams to roads and from railways to ports. One of the reasons seems to be the extremely favourable conditions for project financing. Through various Chinese development banks, heavily subsidised loans are given to African state clients, with the side condition that a Chinese company with Chinese labour carries out the project.

European companies could have implemented these infrastructure projects at least as well in terms of quality and price. However, the financing conditions and the complex requirements to even do business with Europeans are clearly less attractive than the Chinese overall package. Europe has behaved in Africa in a similar way to that described in the poker game I began this article with. Compliance with the rules was the top priority, for business as well as for politics.

Just to avoid misunderstandings: rules in business must be followed. Contracts that come about through corruption, to name just one example, are and remain taboo.

> “The new constellations formed after the Arab Spring in the Middle East also offer opportunities for European industrial companies and banks

Since there are systemic problems with corruption and deficits in the rule of law in some African countries, it is therefore only logical to be extremely cautious when doing business in these states. However, European companies are currently doing this in a way that leads to many African actors being unilaterally cut off from the Western financial system. Consequently, these countries are blocked from economic development – or driven into the arms of China.

So shouldn’t we look for a more constructive approach? A set of rules that will enable Europe to cooperate with those forces ready to act in accordance with the rules in Africa, and thus ultimately advance a free society? Of course, this is more difficult than categorically insulating oneself against potential financial crime risks. However, it would be in the interest of sustainable, democratic African economic development – and of Europe’s strategic weight in the world. A clear Europe-wide commitment to investment in this growth continent, combined with a dialogue at eye level between politics and business on both continents, is called for.

Beyond Africa and the Middle East, a third group of countries offers growth potential for Europe. These are those states that, like Europe, maintain close economic ties with both the US and China. They are thus equally non-aligned in the middle of a bipolar world. Even though countries such as Australia and Japan have joined the Asian free trade agreement (RCEP), they might have a natural interest in developing common rules of the game together with Europe. A third example would be India, which withdrew early from the RCEP negotiations. Elements for cooperation could be common trade corridors or a neutral common payment infrastructure to support each other.

For such regions, Europe’s economy offers a wealth of interesting trade and cooperation opportunities against the backdrop of the global trends outlined – especially since ‘Made in Europe’ has a comparatively strong position worldwide, notably in important categories such as high-quality and sustainability-conscious production.

Future-proof Europe

Compared to China and the US, Europe also offers its economic partners unbiased equal opportunities. The reason: in the

Images: Alamy

past decades, Europe has established a tradition in which diversity has developed into a strength and a canon of values has emerged that respects other positions. These are unique and have the potential to deliver real competitive advantage. Europe follows rules, remembers established values and norms despite all future-oriented transformation, and keeps its promises. In international cooperation, these pillars of trust are extremely important and stand the test of time.

Europe brings with it strong starting conditions – probably stronger than we think. Among other factors, Europe benefits from a large single market of 450 million consumers and has shown that it can find effective financial solutions, even in a crisis. In addition, Europe is built on a strong foundation of established democracies and the rule of law, and has a large pool of well-educated talent in its workforce.

To realise this potential, it is important to ensure that these strengths are played to the full, that sovereignty is secured in key areas, that any locational disadvantages are addressed and that opportunities for growth are seized. While at first glance this may appear to be a complex and extensive catalogue of tasks, the individual elements are tangible and well known.

The joint approach to financial support during the pandemic demonstrated how quickly Europe can make decisions when it wants and needs to.[3] With the same determination, projects such as the banking and capital markets union must be implemented swiftly to develop the full advantages of the community. To preserve European sovereignty in areas such as data protection and payments, a variety of initiatives are being implemented, such as the creation of a pan-European payments infrastructure for consumer payments. These issues should not be seen as desirable projects but as geostrategic necessities and be given appropriate focus.

> The joint approach to financial support during the pandemic demonstrated how quickly Europe can make decisions when it wants and needs to

Sydney, Australia. Europe's ties with countries such as Australia must be strengthened

In addition, Europe should strive for fair framework conditions for European companies. This is a prerequisite for the company with the best idea to win the competition and not the one with the best location factors. In the short term, for example, the location disadvantage of 'transformation capital' must be addressed in order to make the upcoming structural change in many sectors financially possible. This push is not based on a call for 'more state'. Rather, it is about the state's own task of setting the right framework conditions for the economy and providing the necessary infrastructure so that companies in the region can develop their full potential.

Furthermore, opportunities for growth must be consistently exploited. Cooperation with the Middle East, Africa and countries such as Japan, India and Australia should be strengthened. In addition, the emergence of true 'European champions' should be facilitated. The collapsed merger of engineering corporates Siemens and Alstom was a good example of how Europe is stifling its own potential.[4] It needs large companies that can rival the much larger Chinese and American ones in terms of investment resources to defend Europe's role in the global economic order.

We Europeans must finally compete to win, not just to take part. The next few years will set the course for the second quarter of the 21st century, and standing up for our values can only be done from a position of strength. To play to our considerable potential – the strong cards we hold – we need a combination of pragmatism, courage and confidence in our own strengths. We have it in our own hands: all-in for Europe.

Stefan Hoops is Head of the Corporate Bank at Deutsche Bank

Sources

[1] See https://bit.ly/33OsjZD at dbresearch.com
[2] See https://bit.ly/3frEiBG at flow.db.com
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Beyond the greenwash

More could be done to address the social reasons why unsustainable trading activities continue, argues Rebecca Harding. Having systems in place to check mirror trade data and supporting communities with alternative sources of income are good starting points

US$1.7trn

global assets under management in sustainable funds

(Morningstar)

After a year dominated by the pandemic, the focus in 2021 has returned to where it was when 2020 began: how do we make everything we do in business greener, fairer and more viable in the future?

As policymakers, businesses and banks everywhere look forward to a post-Covid-19 world, there is a sustainability-framed sense of purpose creeping into fiscal recovery measures, trade policy and investment that was absent when the world was recovering from the global financial crisis of 2008–2009.

While this is to be welcomed, it is important to distil what might look good in financial and governance reporting with what is actually happening on the ground and what measures are in place.

Investor appetite and government policies

The EU's €750bn recovery fund agreed in July 2020 is likely to contain at least €225bn for green bonds, and investors expect €500bn in issues this year to create a green recovery.[1] Estimates of the growth in so-called 'green' investing vary, but global environmental, social and governance (ESG) funds have undoubtedly been the big winners over the past year. According to data from Morningstar, Global ESG fund inflows increased from US$165bn in 2019 to US$350bn in 2020,[2] with the total assets under management in sustainable funds standing at a record of almost US$1.7trn by the end of the year.[3]

By 2022, climate-related disclosure by large corporates will be mandatory in the UK, the EU has already introduced sustainability disclosures from March 2021,[4] and in the US, President Biden gained office on a promise to integrate sustainability into every area of government policy, including the tariff regime. In September 2020, New Zealand announced that it would be the first country to introduce sustainability financial reporting requirements,[5] possibly as early as 2023. With as many as 78% of major European businesses alone reportedly falling below acceptable disclosure standards on the climate risk they pose,[6] regulatory changes are much-needed steps towards cleaning up the balance sheets of large corporates.

There is a big issue with the policies so far, however. Sustainability is not just about climate change. While an important and necessary part of sustainability, the United Nations Sustainable Development Goals cover society and human conditions as well. 'Green' issues and impacts are perhaps easier to measure, and one could argue that we need to start somewhere.

Trade data is a good place to start because it shows us the scale of the problem. Trade in products associated with sustainable development (negatively or positively) is at the core of any new reporting that is introduced, but it is also likely to be a major force for change, as tariff regimes will increasingly start to penalise non-sustainable sectors following the lead taken by the US administration.[7] Countries themselves clearly have a lot to do, as the following data shows.

Figure 1: Trade in tropical hardwood not elsewhere specified – top 10 flows by imports globally (US$) and mirrored differences (%), 2019

	Imports 2019 (US$m)	Exports 2019 (US$m)	Imports mirrored difference (%)	Exports mirrored difference (%)
China	$2,081.6	$13	-0.7	4.5
India	$419.8	$3	15.7	2375.6
Japan	$39.8	$0	3.3	No data
Vietnam	$29.6	$5	621.8	36392.5
Indonesia	$29	$14	No data	1959.6
France	$21.8	$2	10.3	119.7
Netherlands	$21	$13	-1.0	63.8
Republic of Korea	$18.2	$0	0.3	0.5
Belgium	$15.8	$26	13.7	100.2
Germany	$15.2	$5	192.0	62.1

Source: Coriolis Technologies

Figure 2: Trade in rough hardwood not elsewhere specified – top 10 flows by imports globally (US$) and mirrored differences (%), 2019

	Imports 2019 (US$m)	Exports 2019 (US$m)	Imports mirrored difference (%)	Exports mirrored difference (%)
China	$1,006.4	$6.7	12.1	174.2
Areas NES	$590.9	$.08	No data	No data
India	$376.8	$92.1	12.8	66.0
Canada	$69	$73.9	13.7	84.4
Egypt	$46.7	$.03	-0.01	No data
Indonesia	$42.3	$4.3	1.5	No data
Germany	$39.9	$59.4	44.5	17.6
China, Hong Kong, SAR	$37.1	$3.8	24.3	37.0
Belgium	$35.5	$96.1	35.2	9.5
Austria	$21.2	$16.7	152.4	158.6

Source: Coriolis Technologies

Tropical hardwood data

Take illegal logging as an example. Everyone accepts that the destruction of rainforests cannot continue, and trade in logs associated with deforestation is illegal. Anyone involved with tropical hardwood harvesting, processing, or distribution or sales activity that has links with deforestation is liable for prosecution. Yet the process continues because people's livelihoods in the world's poorer communities rely on short-term activities that destroy their long-term future. Meanwhile, consumers in bigger markets continue to demand the products of illegal logging, making this a vicious circle that is hard to break.

Figure 3: Top 10 exporters of untreated oak (US$) and mirrored differences (%), 2019

	Exports 2019 (US$m)	Exports mirrored difference (%)
US	$210.4	-1.3
France	$199.2	87.0
Belgium	$74.8	3.2
Germany	$63	55.5
Russia	$48	30.4
Slovenia	$18.8	4.4
Slovakia	$18.3	23.0
Hungary	$16.3	15.9
Denmark	$14.9	580.6
Canada	$13.7	219.3

Source: Coriolis Technologies

Figure 4: Top 10 importers of untreated oak (US$) and mirrored differences (%), 2019

	Imports 2019 (US$m)	Imports mirrored difference (%)
China	$368.5	21.9
Vietnam	$45.7	28.0
Belgium	$42.6	0.0
Canada	$33.4	1.1
Austria	$21.6	-1.0
Czech Republic	$18.7	6.1
Germany	$18.1	32.6
Spain	$17.6	-2.9
Netherlands	$16.5	5.7
Italy	$15.4	67.4

Source: Coriolis Technologies

The best way of measuring this illegal activity in trade terms is to consider the difference between what a country says it is exporting or importing and the 'mirrored' flow with its partner. If Country A exports more to Country B than Country B says it is importing, this suggests at best that the trade lacks transparency, or at worst that it contains illegal trade.[8] By understanding the size of the gap, a country's policy stance towards illegal logging becomes evident – the larger the gap, the looser the regulatory framework to prevent illegal logging.

Figure 1 (see page 31) aims to illustrate the problem for the tropical hardwood 'not elsewhere specified' sector. This is a generic sector that captures the tropical hardwood products omitted from more specific classifications. It is a sector on the EU watchlist for illegal logging trade.[9]

Figure 1 shows the top 10 largest import flows in this sector by country for 2019. As imports are usually subject to tariffs they give a better picture of any inconsistencies between what a country says it is importing and what happens when all the trade is mirrored. It tells us that China appears to record its trade in this sector accurately, but other countries are falling short. Vietnam, for example, is highly divergent, and Germany has a divergence of nearly 200% on what it appeared to be importing officially and what it actually imported once everything was totalled up.

Rough hardwood data

The same pattern applies for rough hardwood not elsewhere specified, another watchlist product. Figure 2 (see page 31) indicates a non-specific country, 'Areas not elsewhere specified' (Areas NES), which is the second largest importer of this product. It isn't possible to determine the difference between what this region says it is importing and what it actually imports in percentage terms is, because all of its data is mirrored – that is, it does not report as an entity itself, but countries export to it. In other words, it embodies the illegal flows in this particular high-risk product.

Behind all of this is the fundamental paradox observed earlier: in emerging economies, as long as people's lives depend on illegal trade, it will continue; and while consumers in developed world markets continue to demand the products of that illegal trade, there is no incentive to change.

If we intend to make a difference and create sustainable trade in every sense of the word, then sustainability targets need to include access to healthcare, protection against fraud and crime, educational and work opportunities and the right to housing and clean water as basics. In short, while the regulations, such as those 'preventing' illegal hardwood trade are welcome, they do not address the issue of communities needing alternative sources of revenue.

Deciduous woodland data

As if to reinforce the point that it is developed world demand that is causing deforestation, untreated oak is also a watchlist sector, with deciduous woodland deforestation

Images: Alamy

A satellite image showing the effects of deforestation in the Gran Chaco region, Paraguay

dominant across Europe, Russia and into China, as well as in North America.

Figure 3 on page 32 shows that seven of the top 10 untreated oak exporters have a major discrepancy between what they say they are exporting and what they actually export, once the mirrored flow is taken into account. Only the US, as the largest exporter, is actually over-reporting its exports, since the difference is negative.

By contrast, France, Germany and Russia are respectively the second, fourth and fifth largest exporters globally of this type of deciduous hardwood, but there is a major discrepancy between what these countries say they are exporting and what they actually export; amounting to 87% for France, almost 56% for Germany and just over 30% for Russia. Worse still, Denmark and Canada show mirrored differences of 580% and 219% respectively – given that they are small values overall, this suggests they severely under-report their exports.

The largest importers of untreated oak are China and Vietnam. Around 80% of France's exports of oak go to these two countries where it is processed and sent back to Europe. Much of this trade is not measured however – France's exports as shown in Figure 3 are not reported reliably and China and Vietnam had not provided export data for processed oak hardwood. Their imports are divergent by nearly 22% (China) and 28% (Vietnam), suggesting again that there is considerable irregularity in reporting in this closely scrutinised sector (see Figure 4, page 32).

What is also striking about Figure 4 is that Italy has such a high difference between what it says it is importing and what it actually imports after the mirroring process is taken into account. Italy is a major manufacturer of furniture and imports about 80% of its timber. It is therefore highly exposed to the illegal log trade and it appears to be particularly severe for untreated oak.[10]

Regulatory challenge

Clearly, there is a regulatory challenge, which goes beyond the economic development challenge highlighted above and runs through the trade system itself. It has to be addressed both via business reporting requirements and through effective incentivisation. The current and proposed requirements put pressure on businesses for sustainability disclosure.

Rather, there needs to be a shift in the way financial services provision works with the regulators to incentivise sustainability throughout the supply chain. This is manifested most explicitly through the compliance function: if a company is not complying with reporting standards, that is easy to measure and monitor and decisions can be made accordingly. However, there is far more that needs to be done. For example, sustainability standards and benchmarks need to be agreed consistently across the world so that banks can manage their own and their clients' legal and regulatory risks.

What is clear, however, is that governments, businesses and banks are beginning to align around the complexity of this agenda. There is an understanding that this task cannot be undertaken by one part of the system alone. For example, if the credit system is to be used to encourage compliance with a more complex definition of sustainability, there needs to be a shared definition both of sustainability, and of what can be usefully measured within that definition, and a tough global regulatory system alongside it. This goes beyond existing know-your-customer and anti-money laundering considerations to a broader concept of sustainability 'kite marks' that are comprehensive and accepted by all. An equivalent on the consumer side is the 'Fair Trade' mark allocated to businesses for compliance to a code of sustainability criteria. Applying a sustainability kite mark from a credit assurance process would require collaboration, measurement and tracking on a colossal scale using the methodologies of 'spatial finance'.[11]

> Trade in products associated with sustainable development is at the core of any new reporting that is introduced

This framework would ensure that the process of allocating accreditation would be outside of sensitive transactional or commercial frameworks between banks and their clients, and therefore independent and replicable.

The issues of sustainability, economic inclusion and equality of opportunity are much harder to track, yet this data shows that the information is out there somewhere. Digging deeper into these issues is essential if the investment and regulatory systems are to step up with a framework that everyone can both understand and embed in their businesses.

Dr Rebecca Harding is CEO of Coriolis Technologies and an independent trade economist

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Net zero in the North Sea

As oil exploration and production companies restructure their operations to achieve net zero targets, ESG-aligned commodity finance is supporting them along the way. *flow* shares the experiences of Lundin Energy and Harbour Energy

Energy is needed for the production of all industrial and consumer goods, and has traditionally been sourced mainly from oil, gas and coal. Renewable forms of energy, from solar, wind and hydropower, all the way to pioneering processes for the production of hydrogen by electrolysis, contribute to more sustainable energy generation.

But according to the International Energy Agency's (IEA's) *World Energy Outlook 2020* report, oil will still comprise a significant portion of the energy mix in 2040 (23%, versus today's 33%), alongside other forms of energy. Despite the uncertainty brought on by Covid-19, the broader energy transition is taking place across the entire energy, resources and industrials sector. In order to meet the Paris Agreement's 2°C target, upstream oil and gas production emissions need to decrease by 50% by 2040 compared to 2020 levels.

The IEA explains: "For any pathway to net zero, companies will need clear long-term strategies backed by investment commitments and measurable impact. The finance sector will need to facilitate a dramatic scale up of clean technologies, aid the transitions of fossil fuel companies and energy-intensive businesses, and bring low-cost capital to the countries and communities that need it most. Engagement and choices made by citizens will also be crucial, for example in the way they heat or cool their homes, or how they travel."[1]

With around 7.8 billion people already on Earth, and the figure projected to be approaching 10 billion by 2050, such transformation will take years – and the right finance structures will be needed to support producers as they transition along this path. Transactions can support the use of renewable forms of energy for the extraction and processing of conventional raw materials, or the sustainable expansion of existing business models.

> Lundin and Harbour are role models in their sector when it comes to environmental ambitions
>
> Yann Ropers, Head of London for Natural Resources Finance, with global responsibility for RBL finance, Deutsche Bank

"Sustainability is essential, and includes high environmental, social and governance (ESG) standards in the commodity sector," says Deutsche Bank's Head of Natural Resources Finance, Sandra Primiero. "On the environmental side, a reduction of CO_2 emissions is a key focus area and it is very positive to see how many corporates in the sector embrace their responsibility and work closely with financing partners who support them on their path."

In other words, providers of natural resources finance are working towards getting their clients 'Paris aligned', and should not stop financing oil and gas, but rather support producers as they transition to cleaner energy production processes. "Continued financing of our commodity clients reflects our joint responsibility to form the energy transition, which will only happen hand in hand," Primiero adds.

This article shares two Deutsche Bank ESG-linked commodity finance transactions where the margin paid by the client increases or decreases depending on their ESG performance to agreed metrics. Both companies involved are examples of a new breed of agile, independent oil exploration and production (E&P) entities with a strategy of reaching once inaccessible or undiscovered reserves in a sustainable manner.

Lundin Energy

Two years ago, in *flow*'s review of reserve-based lending in the North Sea,[2] we touched on Lundin's reputation as one of the largest independent E&P companies operating in the Norwegian Continental Shelf (NCS). The company has grown from generating US$250m EBITDA in 2015 to around US$1.5bn in 2020. Lundin has enjoyed remarkable exploration success in the NCS, including in the giant Johan Sverdrup field, which has gross proven (2P) reserves of more than 2,650 million barrels of oil equivalent (MMboe). At its peak level of production (expected in 2022) its Johan Sverdrup asset alone will account for one-third of all petroleum production from Norway.

Thanks to its solid management and exceptional oil discoveries, Lundin has grown nearly eightfold over the past five years, with Deutsche Bank's Natural Resources Finance team having deployed reserve-based lending (RBL) transactions to support the development of the Edvard Grieg, Alvheim and Johan Sverdrup fields. Despite the pandemic, it has continued to perform well, and it was given an inaugural investment grade rating of BBB- by S&P in July 2020. As anticipated for a company that is investment grade and similar to its peers (Aker BP and DEA Erdoel), Lundin is moving towards a more corporate capital structure to provide greater flexibility.

As a final step before completely moving from secured lending to unsecured debt issuance, the company refinanced its existing US$5bn RBL facility with secured multicurrency term and revolving facilities totalling US$5bn. The deal, involving 16 banks (including Deutsche Bank), was announced on 14 December 2020.[3] Importantly, these facilities also include a margin grid based not only on Lundin's external credit rating, but also the company's performance in achieving its ESG target key performance indicators (KPIs) on carbon intensity and renewable electricity generation as a proportion of electricity consumption. This transaction was important in order for Lundin to continue to grow as an investment grade company with the appropriate level of flexibility in its capital structure.

Lundin's energy transition

Lundin has set itself a clear and ambitious target of achieving carbon neutrality by 2025. It is already off to a very good start, producing oil at around 4kg of CO_2 per barrel produced, compared with 24kg of CO_2 per barrel for peers and 18kg of CO_2 for the entire industry. It aims to halve this to 2kg per barrel by 2023. "If all oil in the world was produced this way, it would save two billion tonnes of CO_2 per year, equivalent to removing over one billion passenger cars from the road," states the company.[4]

Lundin is also aiming to have 100% of electricity consumption coming from renewables by 2025. In addition, it is the first company to provide a CarbonClear™ certification on barrels in one of its fields; the world's first assured standard that certifies the full-life carbon footprint of

Figure 1: Lundin's path to carbon neutrality

2020–2021	2022	2023	2024	2025
Emissions reduction/energy efficiency	Electrification using power from shore >95% production by 2023		Renewable energy investments 100% power usage in 2023	Natural carbon capture Offset remaining emissions from 2025 Lundin Energy carbon neutral from 2025

Lundin Energy's Edvard Grieg platform

a field, including emissions from exploration, development and production.

As a testament to the company's commitment, the refinancing transaction has ESG KPIs and a margin grid linked to renewable electricity generation and carbon intensity, making it one of the very first ESG-linked transactions in the oil and gas industry. In 2019, the group was rated highly by several ESG rating agencies, including some related to human rights. These include:

- Vigeo Eiris – Top 10 ESG in Europe, top five on human rights globally;
- ISS ESG – Prime status;
- MSCI – AA;
- Sustainalytics – Outperformer; and
- CDP – B.

Transaction structure

The facility combines a five-year US$1.5bn revolving credit facility and US$3.5bn of term loans, split across two-, three-, four- and five-year maturities, replacing the current US$4.75bn RBL and US$500m of other credit facilities. Interest reduces to 1.6% above the London Interbank Offered Rate (Libor), from the current RBL rate of 2.5% above Libor. It also includes the option to bring in additional commitments in an accordion option of up to US$1bn.

All facilities are secured through share pledges, asset security and security over collection accounts. Lundin's medium-term plan is to issue unsecured bonds in the capital markets that will progressively replace the term loans upon issuance. Upon its first such issuance, all security will be released automatically, provided certain conditions related to credit rating and application of proceeds are met. Protective covenants will continue to apply.

"For the first time we are also including ESG KPIs in our debt framework, which will serve to offer an economic incentive to continue improving our carbon emissions performance. This further demonstrates the financial value which can be realised from industry-leading sustainable operations," said Lundin's Chief Financial Officer, Teitur Poulsen, commenting at the announcement of the deal.

Harbour Energy

On 31 March 2021, Harbour Energy was born from a merger between Chrysaor, the UK's leading North Sea independent oil and gas company and largest net producer, and Premier Oil plc, a UK-listed (FTSE)

23%

The proportion of oil in the global energy mix by 2040

(International Energy Agency)

Harbour Energy's UK Jasmine Platform

Images: Lundin Energy, Harbour Energy

independent E&P company. The transaction was a reverse takeover under the Financial Conduct Authority's (FCA's) Listing Rules for Premier Oil.[5]

The new group has now become the largest independent oil and gas producer in UK North Sea waters with a proforma production of 254 thousand barrels of oil equivalent per day (H1 2020), and reserves of 695MMboe (2P).

Over the past few years, the former Chrysaor entity had consistently reduced greenhouse gas (GHG) emission intensity across its assets, and it has an additional target for further reductions. The new merged company has committed to continue Chrysaor's legacy of industry-leading ESG objectives by reinforcing its health and safety standards, and taking part in ambitious projects on the path to a net zero UK economy in terms of GHG emissions by 2035. Measures to achieve this include pioneering blue hydrogen with carbon capture and storage using depleting North Sea fields.

Combined group assets are located mainly in the UK (91%), as well as Indonesia (5%) and Vietnam (4%). The new group has a cash-generative diversified UK business and operates with a lower carbon intensity than the average UK oil and gas producer.

Transaction structure

Deutsche Bank joined as a lender in a sustainability-linked seven-year US$4.5bn RBL refinancing transaction, which was signed in November 2020 in advance of the Chrysaor–Premier Oil merger. The RBL also includes a US$750m accordion, not pre-committed, to increase the facility size to US$5.25bn.

As noted, the merger was, in fact, a reverse takeover under the FCA's Listing Rules for Premier Oil, in which Premier's US$2.7bn of gross debt and other liabilities had to be repaid and cancelled. In addition, the new RBL amends and increases Chrysaor's existing US$3bn RBL, and funds capital and operational expenditure of the new merged Harbour Energy entity.

Fully underwritten by Bank of Montreal, BNP Paribas, DNB Bank, and Lloyds Bank, this was very much a landmark deal, representing the first RBL to include ESG-linked KPIs in Europe. The structuring includes interest margin adjustments within a range of five basis points linked to

> For the first time we are also including ESG KPIs in our debt framework
>
> Teitur Poulsen,
> Chief Financial Officer,
> Lundin Energy

pre-agreed carbon emissions and reductions targets – all verifiable by an independent ESG auditor.

Path to net zero by 2035

Leveraging Chrysaor's ESG legacy of pioneering in CO_2 capture and storage solutions in UK projects and nature-based offsets in Southeast Asia, the new group's strategy is to become a key energy player, with UK North Sea assets playing a pivotal role in its energy transition. It has announced a goal of 30% reduction in GHG emissions by 2025, with a further 20% reduction by 2028 and a net zero scope 1 and 2 emission by 2035. By way of background, the three scopes of GHG emissions, according to the leading GHG Protocol Corporate Standard,[6] are:

- Scope 1 – Direct emissions from company-owned and controlled resources.
- Scope 2 – Indirect emissions from the generation of purchased energy from a utility provider.
- Scope 3 – Indirect emissions not included in scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions.

Scope 1 and 2 are mandatory to report, whereas scope 3 is voluntary and the hardest to monitor. However, companies successfully reporting all three scopes will gain a sustainable competitive advantage.

Before the merger, Chrysaor was a founding partner of the major Acorn CCS and Hydrogen Project at the St Fergus gas terminal in North East Scotland. This comprises a partnership with Shell and Total that is led by Pale Blue Dot Energy and supported by the UK and Scottish governments and the European Union. This North Sea based-project, now under the auspices of Harbour Energy, is essential for meeting the Scottish and UK governments' net zero targets. The first phase of Acorn is targeting storage of 340,000 tonnes of carbon a year from the St Fergus gas terminal. A second phase, with the production of 'blue' hydrogen, could see the capture and storage of much larger volumes.

Harbour also has a foothold in the UK's green energy plans through the Acorn project stake and the Humber Zero project. "We do have a focus on ESG and we have made a commitment to be net zero by 2035, we take that very seriously," said CEO Linda Cook in an interview with the *Financial Times* on 1 April 2021.[7] She confirmed that part of the plan is to snap up any assets the oil majors are offloading, as they streamline their portfolios and increase the focus on renewable energy. The newspaper noted that "since October, when Harbour and Premier first agreed their deal, oil has risen from about US$40 a barrel to US$65."

Asset electrification projects are underway to assess low-carbon electricity supply options to power platforms. However, the company is mindful of its new shareholders, so the focus is on cash generation while ensuring investment is sustained for the long-term energy transition.

"Despite the engaged energy transition, hundreds of billions of US$ per annum of investments continue to be required in the oil and gas upstream sector just to meet forecast demand over the next two decades," says Yann Ropers, Deutsche Bank's Head of London for Natural Resources Finance, with global responsibility for RBL finance.

He adds: "We remain committed to our North Sea clients in their ESG transition and development of long-term solutions for CO_2 emissions reduction (such as carbon capturing and other carbon offset solutions). Lundin and Harbour are role models in their sector when it comes to environmental ambitions. The energy transition is a journey, and each step counts."

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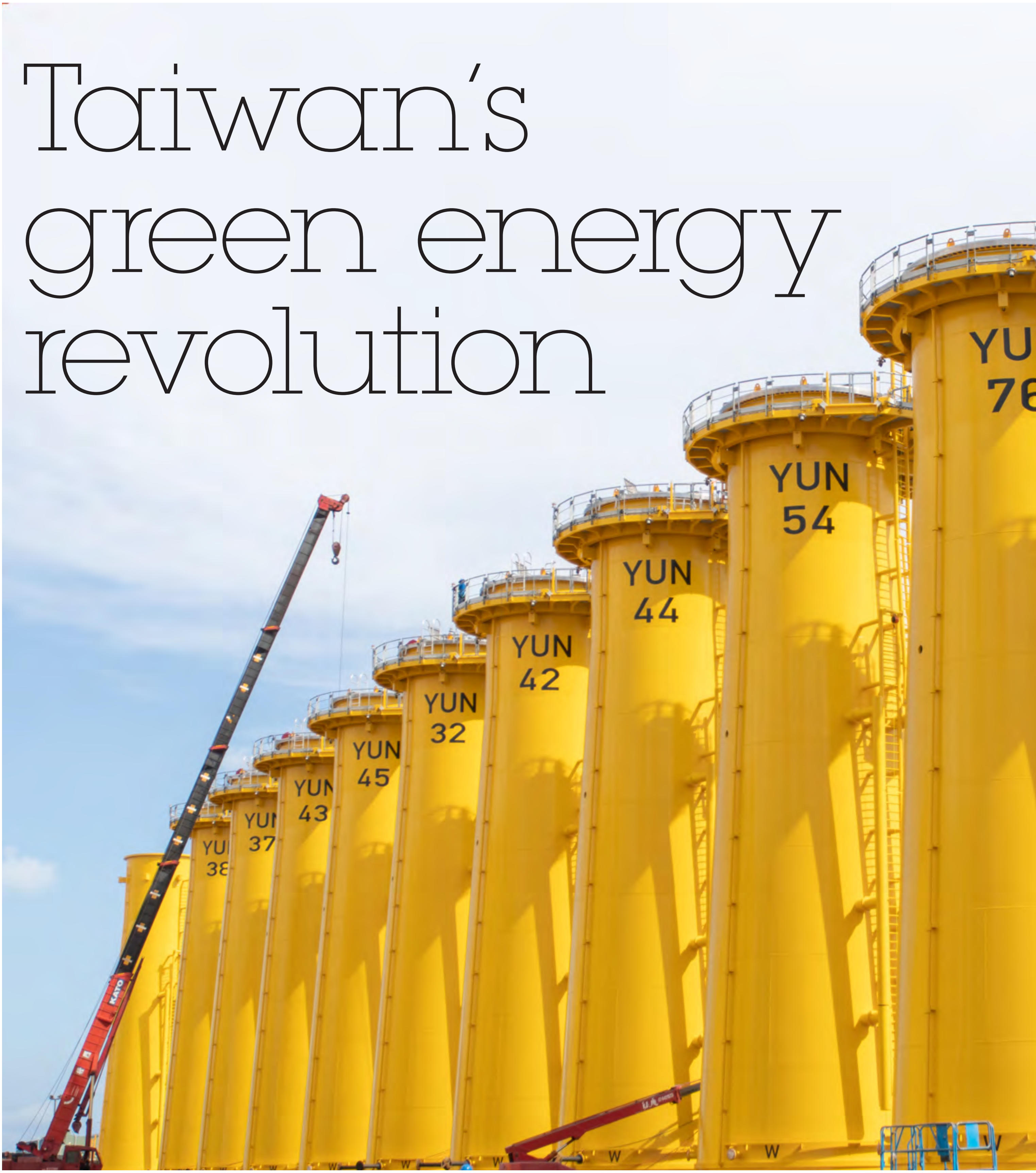
Taiwan's green energy revolution



Transition pieces for the Yunlin wind farm project, manufactured by CTCI-M, at Kaohsiung port

By attracting international corporates and financing with a partnership approach to offshore wind farms, Taiwan is driving renewable energy growth. *flow*'s Clarissa Dann provides an overview of two large, syndicated export credit agency deals

When Taiwan's first female president, Tsai Ing-wen, swept to power in 2016, she made the phasing out of nuclear power and the expansion of renewable energy a strategic priority. Green energy was one of the 'five pillar industries', with climate protection central to her government's policy.

"This was very exciting," says Ingrid Chang, Head of Corporate Coverage at Deutsche Bank AG's Taipei Branch. She explains that the government set ambitious renewable energy targets to be met by 2025, when 20% of the country's electricity supply must come from renewable resources.

According to the Brussels-based Global Wind Energy Council's (GWEC's) *Global Wind Report 2019*, which was published in March 2020, the global offshore wind industry installed a record 6.1 gigawatts (GW) of new capacity in 2019, bringing total offshore capacity to 29.1GW. "This growth was led by China, which remains in the number-one position for new offshore capacity with 2.3GW installed in 2019. In terms of cumulative offshore wind capacity, the UK remains in the top spot with 9.7GW, accounting for nearly one-third of the 29.1GW of total global capacity," the GWEC announced in a press summary at the time.[1]

Asia is therefore very much regarded as a growth opportunity. Denmark's Ørsted, the world's largest owner of offshore wind power sites (previously known as DONG Energy), told Reuters in 2018 that Taiwan is seen "as a stepping stone into Asia Pacific".[2]

Attractive feed-in tariffs, a stable regulatory framework, supportive government policies and the country's strategic location have attracted a number of top offshore wind developers to invest in renewable energy infrastructure in the country. Among them is Germany's Bremen-based wpd. Set up in 1996, it has installed 2,200 turbines around the world with a total of 4,450 megawatts (MW) of combined offshore and onshore capacity. The company's offshore Yunlin project in Taiwan is set to deliver 640MW by 2022.[3] Its Chief Operating Officer, Achim Berge Olsen, notes that "the success of projects in Taiwan is key to its role as a preferred market for investors and a hub for the region".

As a client of Deutsche Bank that has much of its onshore installed capacity in Germany, it was natural that wpd turned to the bank for support in developing capacity in the country. "It was a privilege to be part of the team helping the Taiwan government reach its renewable energy target" says Chang, who, as an on-the-ground Mandarin-speaking Taiwanese, is well placed to work with the government, its energy regulator and local banks.

Market opportunities and challenges

Taiwan's offshore wind resources have helped it establish itself as an attractive market for offshore wind in Asia, with speeds of up to 12 metres per second in the Taiwan Strait. However, frequent earthquakes and typhoons can, notes law firm Watson Farley & Williams, "reduce the window for construction, increase the risk of component fatigue and affect how risk is allocated between the parties".[4]

In January 2018, Taiwan's government announced its intention to achieve a target of 5.5GW of offshore wind energy capacity by 2025. According to the GWEC, it has since added a further 10GW to its offshore wind capacity target for 2026–2035.[5] This, says Chang, "provides the long-term visibility needed to generate a local offshore wind industry and supply chain".

To support the development of renewable energy, in 2009 the government passed the Renewable Energy Development Act, which provides for a feed-in tariff system and offers a range of incentives to renewable power producers.

The country's Electricity Business Act was also subject to substantial reform in 2017, including provision for the future liberalisation of the electricity market. It also addressed the development

Location of Yunlin and Changfang and Xidao offshore wind projects in the Taiwan Strait, in relation to the larger Changhua sites

"The success of projects in Taiwan is key to its role as a preferred market for investors and a hub for the region

Achim Berge Olsen, Chief Operating Officer, wpd

of renewable energy by providing for preferential measures – for example, priority grid connection and dispatch – for renewable power producers. Further regulatory changes, such as incentives and subsidies, helpful land-use zoning, and construction arrangements, have sought to facilitate the expansion of Taiwan's offshore wind sector.

As well as legislative and regulatory measures, the government has announced steps to streamline approval of Watson Farley & Williams' planning processes for new developments, and has earmarked significant investment in infrastructure to facilitate the development of renewable energy.

"Generally, Taiwan's markets are relatively open and are thus attractive to the European players," says Chang. "Plus, the scale of the offshore projects in Taiwan requires very substantial balance sheets and competent developers, and European companies are currently the most advanced in the offshore wind market."

While Taiwan's legal framework for the renewable energy sector is relatively friendly compared to other countries in Asia, one issue developers are facing is the localisation requirement, where developers have to use local equipment and services for the construction of their projects. This creates a concentration risk among local suppliers.

"Increasing local content requirements may result in reduced export credit agency (ECA) participation, testing international lenders' interest," reflects Chang. However, Taiwan's Bureau of Energy, Ministry of Economic Affairs has recognised that domestic suppliers, along with local banks, need to work collaboratively with international providers, with the collective expertise and scale making it possible to attract ECA support.

Environmental impact

Despite the Taiwanese government's ambitious offshore renewable energy targets, there is no corner-cutting when it comes to checking and monitoring environmental impact. Projects selected by the government are subject to environmental assessments, which involve consultation with various authorities to gain Environmental Impact Assessment (EIA) approval. Once the approval is granted, the projects are then awarded grid capacity. All of this must be in place before financing can be signed off.

Through the environment and social impact due diligence process, the assessments submitted to gain EIA approval are designed to align with the following standards:

- International Finance Corporation (IFC) Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement;
- IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

Deutsche Bank engagement

Chang reports that Deutsche Bank has been active in Taiwan's wind farm projects

Images: wpd

Yunlin monopiles made by Steelwind Nordenham arriving in Tainan, Taiwan

29GW

Global installed offshore wind farm capacity, 2019

(GWEC)

since 2006. However, over the past two years, this activity has intensified, with ECA deal structuring and the bank acting as the sole deal contingent interest rate swap hedge arranger in the Yunlin project financing. "Deutsche Bank's competitive advantages lie in strong market risk appetite and execution capabilities, along with established expertise," she notes.

By leveraging its deep expertise of offshore wind farm projects in Europe, Taiwan Country Chief and Head of Investment and Corporate Banking, Cynthia Chan, was keen for the bank to build its renewable energy portfolio in the country, and she encouraged Chang to make it happen.

Due to their lack of expertise in the offshore wind farm sector, and deterred by the complexity of non-recourse project financing, state-owned local banks were initially reluctant to participate in offshore wind farm project financings. But their participation was critical for the industry's ongoing development as they had Taiwanese dollar (TWD) liquidity. One of Chang's first tasks was to explain to them how the industry worked, and provide support on risk mitigation, such as managing interest rate volatility with swaps. This involved giving a number of 'roadshows' and training courses.

"We have a very close dialogue – I would say partnership – with the government," says Chang. "We always get the very latest regulation updates and are more like a consultant in the industry right now." She believes this also differentiates Deutsche Bank Taipei from other foreign banks in the capital.

Yunlin

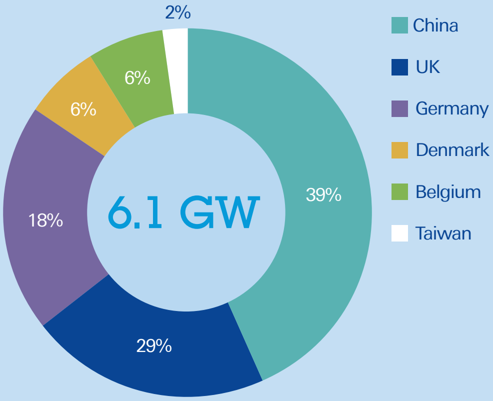
The work to attract local banks paid off, and the region's first deal that really moved the needle was the 18-year tenor award-winning[6] Yunneng Wind Power TWD82bn (€2.3bn equivalent) EKF, Euler Hermes, and Atradius-covered loan and commercial loan financing, signed with 19 Taiwanese and international banks on 24 May 2019.

The Yunneng Wind Power Co. was a special purpose vehicle (SPV) established to run the construction and operation of a 640MW offshore wind farm project located near Yunlin County on the west coast of Taiwan. The SPV was jointly owned by wpd AG (73%) and a Japanese consortium led by the Sojitz Corporation (27%).

Syndication of the financing was successfully closed with a 34% oversubscription four months after the launch. Given the tight timeline for drawdown after the 24 May signing, Deutsche Bank, together with the initial group of lenders, pre-funded the financing prior to close of syndication.

As Chang indicates, Deutsche Bank acted as the sole hedge coordinator and arranged a 10-year deal contingent interest rate swap hedge solution to enable the client to lock in a TWD fixed interest rate cost. By way of background, a deal contingent hedge is one of the most sophisticated solutions that allows a client to hedge a critical risk linked to a transaction

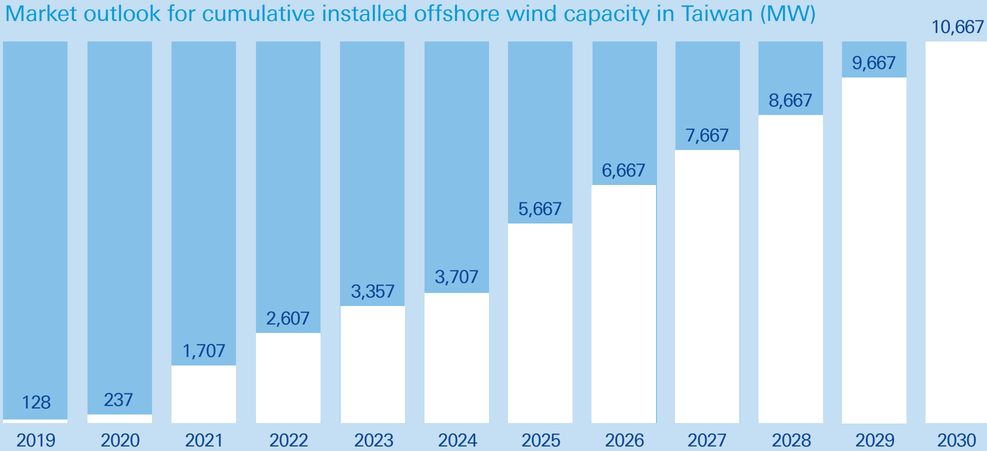
2019 offshore wind installation capacity by country



Forecast installations for key markets to 2024 (MW)

Market	Forecast installations (MW)
North America	5,720
China (mainland)	19,000
Taiwan	3,579
Japan	860
Vietnam	1,100
South Korea	560
Total	30,819

Market outlook for cumulative installed offshore wind capacity in Taiwan (MW)



Source: GWEC, *Global Offshore Wind Report 2020*

Monopiles offloading at Mailiao Harbor, Yunlin, Taiwan. The Mailiao monopiles will be welded by Taiwanese company Formosa Heavy Industries

before the underlying transaction is confirmed, with the client bearing no liability or cost for the hedge should the transaction fall through.

Construction of the project is currently underway with foundations being laid, and it is scheduled to be completed by the end of 2021. The production of the foundations is split between local companies and suppliers in Europe.

When completed, Yunlin will be one of the largest wind farms in Taiwan and will provide ‘clean’ electricity to more than 450,000 Taiwanese homes, while offsetting 916,000 tonnes of CO_2 emissions each year. It will be home to 80 SG 8.0-167 DD offshore wind turbines manufactured by Siemens Gamesa Renewable Energy, and will be the first wind farm in the APAC region to use such turbines.

Changfang and Xidao

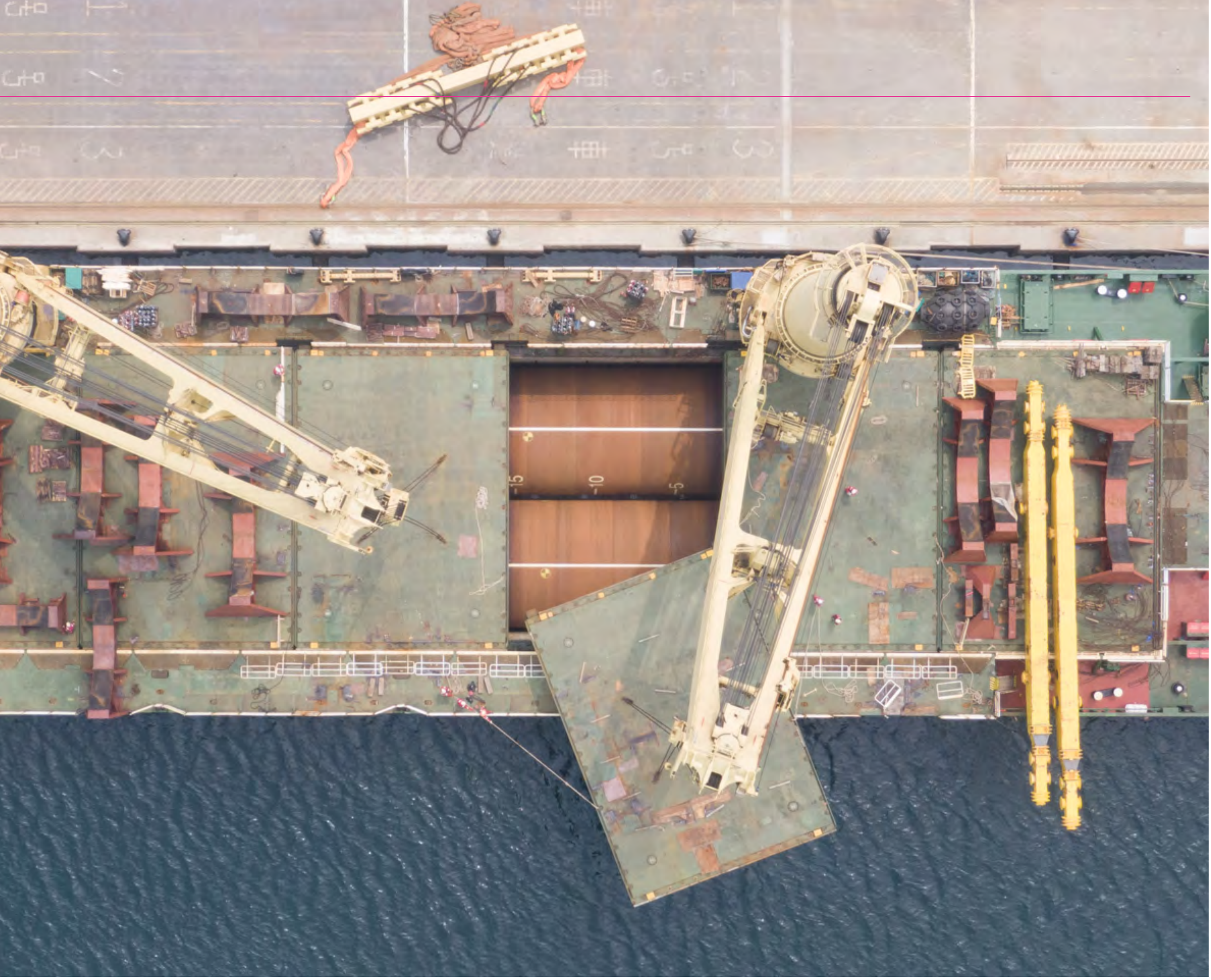
After the success of Yunlin, the Deutsche Bank team continued the momentum, acting as mandated lead arranger and hedging bank for the 589MW Changfang and Xidao offshore wind farm. This time, the project owner was Copenhagen Infrastructure Partners (CIP) alongside two Taiwanese life insurance companies that held a minority share.

Closed in February 2020, this was another 18-year tenor large financing, to the tune of TWD90bn (€2.6bn), inclusive of commercial loans, ECA-covered loans, a decommissioning bond facility, a performance bond facility and a contractor guarantee facility. Lenders also had the comfort of a long-term fixed price offtake agreement with the state-owned Taiwan Power Company (TPC), ensuring future revenues could repay the loan.

The deal comprised equity and senior loans from a consortium of 25 international and Taiwanese banks and financial institutions (including CI-II, Taiwan Life Insurance and TransGlobe Life Insurance), as well as six export credit agencies, demonstrating increased confidence from ECAs in these projects. They comprised:

- GIEK (Denmark);
- NEXI (Japan);
- EKF (Norway);
- Atradius (Netherlands);
- UKEF (UK); and
- K-Sure (South Korea).

CIP had acquired the Changfang and Xidao project in 2017 and it obtained grid allocation the next year. In 2019, the project entered into a 20-year power purchase agreement with the TPC. Commercial operations are planned to start in Q1 2024, once the construction phase is complete.



"This project, besides being a remarkable one in Taiwan where it marks the continuation of the offshore wind build-out, is part of leading the way for the complete APAC region going into offshore wind,"

> It was a privilege to be part of the team helping the Taiwan government reach its renewable energy target

Ingrid Chang, Head of Corporate Coverage Taiwan, Deutsche Bank

said Anders Eldrup, CIP APAC Chairman, in a press release when the deal was closed. "Reaching financial close marks a major milestone for the Changfang and Xidao project and we are really excited about entering the construction phase," added CIP Partner Michael Hannibal. He noted that once commercial operations start, the wind farm will "provide clean energy to more than 600,000 households in Taiwan".[7]

A sizeable force

The track record established by project financing deals such as Yunlin, together with Changfang and Xidao, has clearly played its part in confirming Taiwan as the most attractive offshore market in the APAC region. As Somik Das, Senior Power Analyst at GlobalData, commented in August 2020, "Taiwan is blessed with high offshore potential, providing greater market size and stability, [a] conducive policy environment, [an] established power purchase agreement market, and project financing ease."[8]

It would seem that the country's aims of reaching total offshore wind capacity of more than 5.5GW by 2025, and 15.5GW by 2035, are currently on track. Given that, as at 2019, there was only 29GW of installed offshore capacity in the whole world, that has got to be a game-changer.

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Image: Alamy

International trade: THE SUEZ SHUTDOWN

SUEZ STATS

- The Suez Canal in Egypt, which is 120 miles long, connects the Mediterranean to the Red Sea, and is one of the busiest trade routes in the world, with an estimated 12% of all global trade passing through it each day
- The vital trade artery represents the shortest sea link between Europe and Asia. The alternative route requires a lengthy detour around South Africa
- Around 50 shipping vessels pass through the waterway each day

THE CRISIS UNFOLDS

- On 23 March 2021, the Ever Given, which is registered in Panama and operated by the Taiwanese shipping company Evergreen Marine, ran aground close to the southern entry of the canal and became wedged sideways across the waterway, blocking it off
- The 400-metre-long container ship, which was carrying 18,300 containers filled with cargo bound for companies including IKEA and Aldi, was grounded on silt for almost a week, creating a backlog of over 400 stranded ships
- Data from shipping expert Lloyd's List reveals that the blockage was holding up an estimated US$9.6bn of trade for each day it was stranded, equating to US$400m and 3.3 million tonnes of cargo an hour, or US$6.7m a minute

Treasury transmission

An internship with BMW led ElringKlinger's treasurer, Matthias John, to the automotive component manufacturer, where he centralised its treasury systems and improved free cash flows. He tells *flow*'s Graham Buck about the importance of giving back

While the revenue contraction resulting from the Covid-19 pandemic has been felt most by the retail and travel sectors, the auto industry has not escaped unscathed. In 2020, new motor registrations fell by about 25% across Europe's five largest car-buying countries, with a 19% decline in Germany surpassed by steeper drops in the UK, France, Italy and Spain.[1]

A three-point turn in its fortunes in 2021 would be good news for German automotive parts manufacturer ElringKlinger AG, a supplier to many of the industry's big names. The company's Q3 2020 interim report notes the pandemic impact. "Lockdowns and interruption to production at customer sites led to a substantial downturn in business in the second quarter," it states. However, Q3 saw "significant business upturn on the back of recovering markets".[2]

81

patented ideas applied for in 2019 alone

(ElringKlinger *Sustainability Report 2019*)

e-mobility transition

The "broad range of innovative premium-quality products for vehicles powered by any type of drive system" (in the company's own words) includes lightweight components, battery and fuel cell technology, electric drive units, gaskets, shielding systems, transmission control plates, dynamic precision parts, components made of high-performance plastics, tooling technology, and development services. While combustion engines currently dominate, the gradual transition to hybrid and full electric models to reduce CO_2 emissions and combat climate change in the long term is under way. Investment in battery and fuel cell technologies (as well as project time allocation) has been ramped up as ElringKlinger adapts existing operations and infrastructure to meet changing demand.[3]

The Q3 2020 report also highlights how the company's fuel cell technology was "propelled forward by two strategic partnerships"; namely Airbus, "to redefine hydrogen-based fuel cell for the aviation sector", and one with French automotive supplier Plastic Omnium "in a concerted effort to evolve the market for fuel cell vehicles".[4]

Engine power

ElringKlinger's genesis goes back to the 19th century and Paul Lechler, a businessman, social reformer and philanthropist who founded the company in 1879, declaring his belief that "faith must not simply be a matter of ideology; it must be lived out through our actions". Initially trading in gaskets and technical products, it subsequently began manufacturing gaskets in 1914.[5]

Six years after the Lechler business was established in Stuttgart, Richard Klinger set up an engineering workshop in Vienna. The first Lechler cylinder-head gaskets were produced in 1924 and the Klinger plant followed suit in 1930.

Fast forward to the mid-1960s and production and distribution of Lechler

Images: ElringKlinger

ElringKlinger concept car

gaskets was consolidated within Lechler Elring Dichtungswerke. Expansion outside of Germany began in 1971, when Elring acquired shares in the Spanish company Guma S.A., now ElringKlinger, S.A.U. A South Africa joint venture, Elring Gaskets (PTY) Ltd, followed in 1983 and a South Korea joint venture, Jeil Elring Co. Ltd, was added in 1990. Three years later, the company expanded into China through its joint venture Changchun Elring Gaskets Co. Ltd.

In 1994, the automotive divisions of Richard Klinger GmbH and Elring GmbH then merged to create ElringKlinger GmbH, which was still based in Dettingen/Erms. By October 2000, the company had united with its parent ZWL Grundbesitz- und Beteiligungs-AG and adopted the new name ElringKlinger AG.

Passionate about finance

Matthias John, ElringKlinger's Corporate Treasurer, saw the opportunity to develop his project management skills in operations-based finance when he joined the company five years ago. A keen volleyball and football player, he also reveals "a passion for finance" that developed from an early age (he was already studying the stock market and corporate news pages in his teens). "I dreamed of a role in corporate finance and my studies in finance and management led to an internship with BMW through its MBA programme," he recalls.

This early experience in the motor manufacturing sector meant that a proposal from ElringKlinger's CFO, Thomas Jessulat, to join the company as a project manager and work on the centralisation of its treasury operations immediately caught his eye. Initially there were a number of options as to how the project would progress and what its ultimate goal would be. "The central task was to oversee the implementation of treasury management system (TMS) software, and we looked at which activities could be better handled by having a centralised treasury function," John explains.

Since then, while still a project manager, John has also become treasury manager. He is now in the process of improving the company's corporate banking structure, reporting directly to Jessulat, with a focus on electronically connecting to the core banks.

"We've progressed to the maintenance stage and are looking at what payment formats need to be changed and how," explains John. "Rationalising our bank structure makes everything much easier. For transaction banking, we now have just three relationship banks but have retained slightly more for our financing. We're still in the midst of the centralisation process and having completed Europe, we're well on track in the US–Mexico–Canada region. Our next challenge is Asia."

Treasury has grown in line with the company's expansion through a combination of organic growth and acquisitions. As a supplier, ElringKlinger has locations close to the main car production plants, minimising environmental impact by keeping supply chains short. Several of these subsidiaries have very straightforward finance structures and it made sense to bring these together. "Five or 10 years ago, head office was the source of as much as 50% of total income, but as we've steadily grown and expanded it made sense to centralise," adds John.

Pandemic resilience

Outside of Germany, ElringKlinger has production units in European countries such as the UK, Spain, Hungary, Romania and Turkey, while further afield it operates in countries including the US, Canada, Mexico and Brazil. It also has units in Asia's two main economies – China and Japan – as well as South Korea, Indonesia, Thailand and India.

For John, managing risk effectively is the key to sustainable profits, and absorbing the US dollar foreign exchange (FX) risk is key for an industry that sources its raw materials from major commodity companies. "As we produce locally, we're close to our customers and sell to them in the local currency, so the dollar fluctuation risk can impact on prices," he says.

FX risk is largely handled through natural hedges, which is mainly a controlling exercise with the ability to pass on much of the impact of fluctuations through price-changing clauses. Any leftover financial risk is hedged through derivatives, most of which are cross-currency swaps.

The company's recent quarterly reports have noted how its free cash flow has provided it with resilience during the pandemic, and John admits that it has proved even better than he was anticipating. Key to this success has been harmonisation, he explains. "We have

ElringKlinger supplies battery systems for solar vehicles made by Sono Motors. Below, ElringKlinger fuel cell stack NM12

reduced our bilateral loans to diversify our funding portfolio with a promissory note loan (Schuldscheindarlehen) and a syndicated loan, which is the backbone of our financing."

Even before the rapid spread of Covid-19 across Europe last spring, the treasury's cash strategy was to pay down debt, so in early 2020 the firm was "well positioned and able to sit through the crisis fairly comfortably", to the extent that the treasury team was able to focus on its investment and cost-efficiency programmes.

Game changer

John says that his role as Treasurer has expanded as various processes have been transferred to head office and developed organically. "By implementing the TMS we established a central point of information, so that treasury effectively acts as the gatekeeper," he explains. "It means

> We established a central point of information, so that treasury effectively acts as the gatekeeper

Matthias John,
Corporate Treasurer,
ElringKlinger AG

that the finance managers in our local companies come to us first before they approach the banks.

"So, as Treasurer, you are also the gatekeeper and position yourself within the workflow. The role – and that of the treasury department – has grown thanks to central financing and also through compliance with the banks' know-your-customer processes. From the perspective of project management, which still accounts for 50% of my time, we can respond promptly, as we did when Hungary recently announced changes to its electronic invoicing requirements."

John also appreciates Deutsche Bank's FX4Cash, which provides an automated platform for handling global cross-currency payments. The service is, he believes, a "game changer" and something that would be good to have from every bank. "It has given us full transparency for the first time as we know both the bank fee and the applicable margin," John adds. "You can't look at every single FX transaction, but you do want to have a system in place that enables you to know what's going on. Too often, fees aren't fully transparent."

ESG in action

With an increasing focus in recent years on corporates' environmental, social and governance (ESG) performance, ElringKlinger walks the all-round walk, rather than relying on its fuel cell and battery technology to demonstrate a commitment to clean mobility.

The long-standing connection between ElringKlinger and the Lechler Foundation goes back to its founder and his son, Paul Lechler Jr., who in 1928 set up the foundation that now bears his name and – through his trading company – for ElringKlinger AG. To this day, the Lechler family, which owns the majority of ElringKlinger AG's shares, has maintained the tradition established by Paul Lechler of donating a part of its income to charitable causes through the Lechler Foundation.

John reflects on the overall culture of supporting people who face disability and learning difficulty challenges in Dettingen/Erms, where the company has its headquarters. Right across the street from the office is the BruderhausDiakonie. ElringKlinger AG has a business relationship with the workshop to assist disabled people, and the two foundations cooperate on various other projects. "I was born locally, so doing good work at this company is a source of great pleasure, and the company adds a second bottom line through its social responsibility," he says.

And if there is any positive legacy to come from the pandemic, he adds, it is the way in which everyone – and not just the pharmaceutical companies developing vaccines – has worked together in response to the crisis. "You think about your suppliers and you value them. In a time of crisis like this that's great to see." He likens the response to a huge chain of people joining hands. "In the end you all want to make a profit, but you are all dependent on each other," John says, a belief that's reflected in the Lechler Foundation's motto that "Doing good brings us together."

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Central bank digital currencies: the game changers

Despite their volatility, cryptocurrencies are gaining acceptability as an alternative asset class. However, mass adoption is unlikely, and in the meantime, central bank digital currencies are gaining traction, reports *flow*'s Graham Buck

While the world grappled with Covid-19 in 2020, central bank digital currencies (CBDCs) quietly moved forward, largely unremarked upon. By contrast, private cryptocurrencies such as bitcoin continued to attract publicity.

The Bahamas, which in 2018 announced a project to develop its own CBDC with the declared aim of promoting financial inclusion and access across the islands, was first off the starting block. The nation of around 390,000 people officially launched the so-called 'Sand Dollar' through the Central Bank of The Bahamas in October 2020,[1] although reports suggest a low-key launch, with around US$130,000-worth of Sand Dollars in circulation over the early weeks, against US$508m in traditional Bahamas dollars. As Deutsche Bank research analyst Marion Laboure notes, "with The Bahamas having 90% penetration for mobile devices and one of the highest per-capita incomes in the Americas, the adoption rate of the Sand Dollar is likely to be high and quick. Furthermore, the Sand Dollar is pegged to the US dollar (USD); in effect, it can be seen as a pilot release of a digital USD by proxy."

A CBDC initiative is also well advanced in the Eastern Caribbean, under the supervision of the Eastern Caribbean Central Bank. The International Monetary Fund (IMF) has encouraged the development of a common digital currency across the region to lessen dependence on cash and cheques. The test phase of a digital Eastern Caribbean dollar has been run over a private permissioned blockchain on IBM's Hyperledger Fabric.

But both are relatively small-scale CBDC initiatives and could be regarded as the *hors d'oeuvre* before the main course, which will be served when the world's main central banks are ready to launch their own CBDCs.

The People's Bank of China (PBoC) is well ahead of Western institutions, following a transition in the Chinese authorities' attitude towards digital currencies. The PBoC began reviewing the concept in 2014. By 2020 it was ready to commence trials of a PBoC-backed 'digital yuan' as part of the government's push for a cashless society, with a full-scale release expected ahead of the Beijing Winter Olympics, which opens on 4 February 2022. As Laboure notes, the Chinese adoption rate of the government's CBDC – influenced by existing consumer habits and demographics – is likely to be faster than in most other countries.

Along with China, another front-runner is Brazil,[2] where Roberto Campos Neto, President of the Banco Central do Brasil (BCB), has said that a BCB-backed

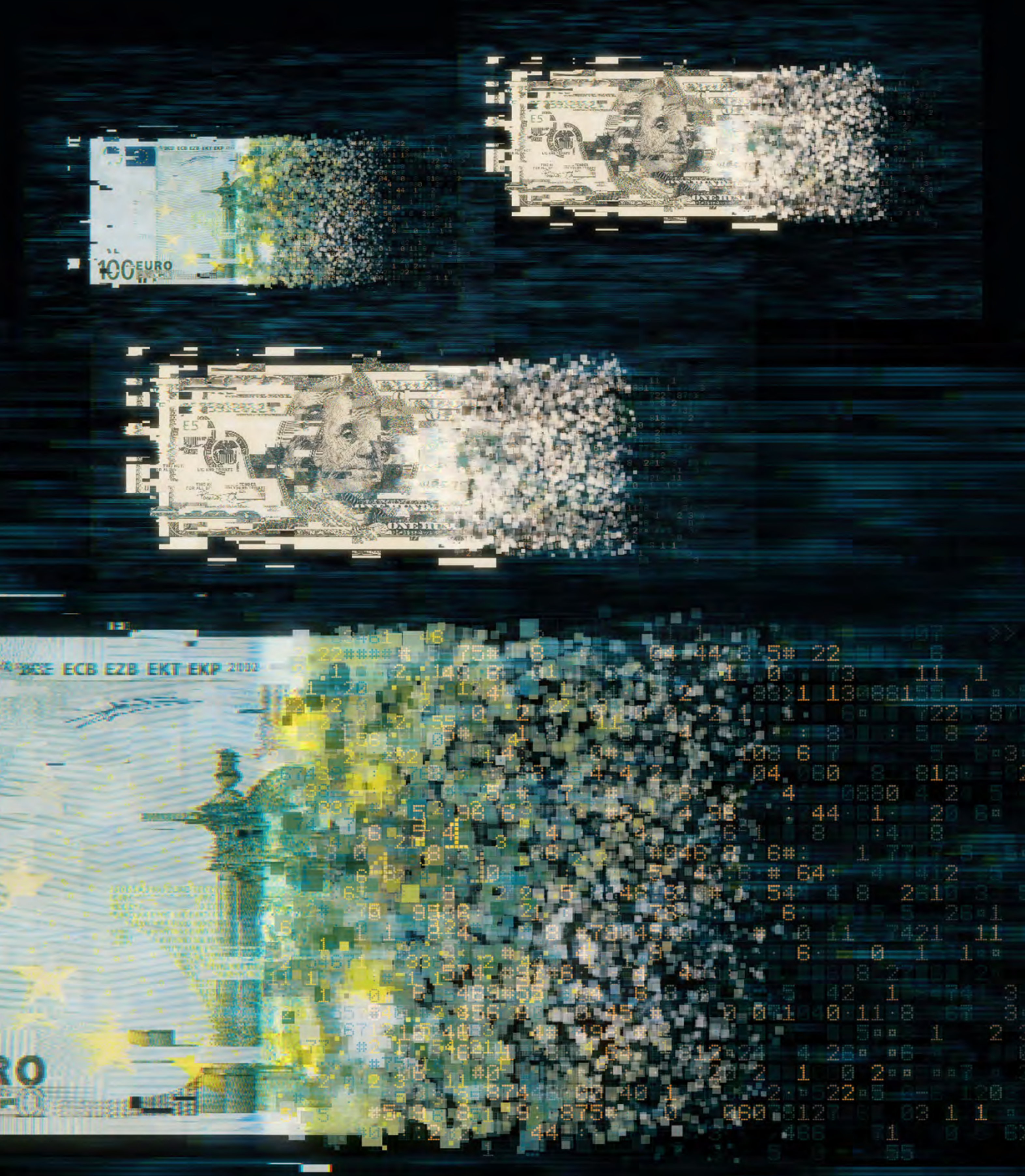
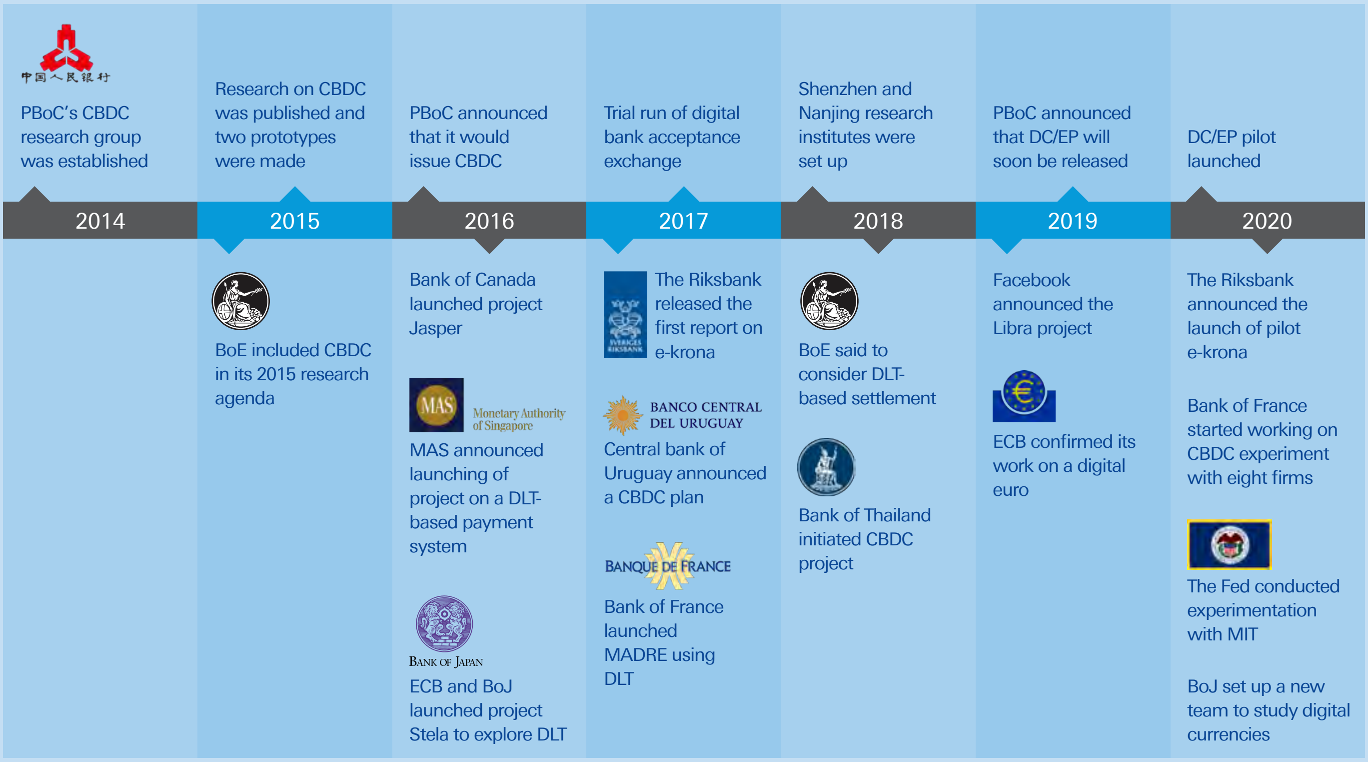

100 EURO
ECB EZB EKT EKP

Figure 1: Timeline of CBDC research and experiments in various countries



Sources: Deutsche Bank, Goldman Sachs and various websites

digital real may be ready for entry into mass circulation as early as 2022.[3] "To have a digital currency, you need an instant payment system that is efficient and interoperable; an open system, where you can create competition; and a currency that has credibility, is convertible and international," he added. As part of its digital agenda, in February 2020 the BCB launched its official payment network, Pix, for instant money transfers and QR code scanning. Mass adoption of Pix is scheduled during 2021 and last October, Brazil's Economy Minister, Paulo Guedes, announced that the initial public offering of the digital bank Caixa Econômica Federal was provisionally pencilled in for April 2021 (although this has now been put back to "early 2022"[4]).

Fed and ECB more circumspect

By contrast, in the US the Federal Reserve (Fed) declares itself to be unperturbed by such progress elsewhere in the world and under no pressure to respond with a Fed-backed CBDC. Fed Chairman Jerome Powell maintains that a launch should go ahead only once concerns over potential vulnerability to cyberattacks and counterfeiting are addressed. "This is one of those issues where it's more important for the US to get it right than to be the first," he told the IMF in October 2020. More recently, Powell has spoken of it taking "years rather than months" until the Fed is ready, adding that, in the meantime, it is investing heavily in the supporting technology and addressing the questions posed by CBDCs.

The European Central Bank (ECB) has also been studying the concept of a CBDC, which it believes could mitigate the risks to financial stability and monetary sovereignty posed by private cryptocurrencies.[5] It published a draft report in October 2020 and is expected to clarify its attitude towards a digital euro by summer 2021. In January 2021, ECB President Christine Lagarde spoke of a digital euro being launched within five years,[6] although she noted that it will "take a good chunk of time to make sure it's safe". Participating in an online conference organised by Reuters, she also called for global regulation of bitcoin, adding: "For those who assumed it might turn into a currency – terribly sorry, but this is a highly speculative asset which has conducted some funny business and some interesting and totally reprehensible money-laundering activity."

> It's more important for the US to get it right than to be the first
>
> Jerome Powell, Chair, Federal Reserve on central bank digital currencies

There have also been calls for the Bank of England (BoE) to be at the forefront of developing a digital pound. Like the ECB, the Bank has been reviewing the possibility of a digital version of its currency for several years, and in April 2021 announced the joint creation, with HM Treasury, of a Central Bank Digital Currency Taskforce to coordinate the exploration of a potential UK CBDC.[7] BoE Governor Andrew Bailey has also dismissed the idea that private cryptocurrencies will gain widespread acceptance. Speaking at the World Economic Forum in January 2021,[8] Bailey commented that, while digital innovation in payments would continue, bitcoin and other private cryptocurrencies lacked the essential features to make them more than transitory.

The fact that the world's central banks have warmed to the idea of backing a digital currency marks something of a sea change over the past decade. Writing in February 2020,[9] *Euromoney* Editorial Director Peter Lee commented: "First central banks ignored cryptocurrencies, then they mocked them, next they fought them and now they are building their own. Before long, CBDCs will be in use, with possibly startling consequences."

The shift in attitude has been tracked by the Bank for International Settlements (BIS), which has monitored speeches given in recent years by central bank governors and other senior figures. As *flow* reported in December 2020,[10] the BIS found that as the number of speeches on the topic of digital currencies steadily increased, the tone had shifted from negative to rather more positive.

The BIS has noted that many forms of CBDC are possible "with different implications for payment systems, monetary policy transmission as well as the structure and stability of the financial system". The two main variants are wholesale CBDCs and general purpose, also known as retail CBDCs. "The wholesale variant would limit access to a predefined group of users, while the general purpose one would be widely accessible."

Disintermediation

"The world has shifted from asking whether digital currencies will succeed, to how and when they will become mainstream," notes Laboure in her February 2021 white paper, *The Future of Payments Series 2 – Part II*. "In the long run, CBDCs will displace private cryptocurrencies and become the norm," she predicted.

Laboure warns that "with bank accounts paying low interest rates, a CBDC has a high potential to disintermediate the banking system. People might choose to hold their money directly at the central bank. Obviously, this would disrupt legacy bank franchises and impact financial stability [see Figure 2, page 55]. Some degree of disintermediation is an inevitable consequence of a successful CBDC. Thus, commercial banks need to consider how to react to a prospective loss of deposit funding." But she adds that "currently, the digital currency model favoured by most central banks seems to be two-tier issuance. As with a traditional currency, transactions would be decentralised and supply would be centralised."

The demise of cash

If more by circumstance than design, Covid-19 has set the stage for the widespread adoption of CBDCs. In her paper, Laboure writes of the pandemic accelerating the demise of cash by four or five years – even if it is not about to disappear anytime soon.

However, she makes the point that Asia and China are leading the way and notes how, at the end of 2018, "around 73% of internet users in China used online payment services" (up from 18% in 2008) and that the World Bank says that "85% of Chinese adults who bought something online also paid for it online… This is significantly higher than other emerging economies."

Laboure also believes that emerging market economies are likely to continue to lead the race in developing digital currencies. *The Future of Payments Series 2 – Part II* considers the barriers that advanced economies must first overcome for their populations to adopt them. The principal two obstacles are low interest rates and cultural/privacy norms. Cash is still widely regarded as a "store of value" and a "safe haven", and it appears that higher interest rates for digital currencies will be needed before this perception changes.

Yet even in the first weeks of the Covid-19 crisis, Western consumers were showing greater readiness to transition to a cashless society. Concerns that traces of the virus can linger on notes and coins lent impetus to the move away from cash to contactless payments for regular daily purchases, which was further encouraged by an increase across many countries in the maximum limits applicable to 'tap and go' contactless cards. For example, the UK upper limit rose from £30 to £45

ECB President Christine Lagarde has suggested a digital euro could be launched in the next five years in April 2020, with the March 2021 Budget confirming reports of a further rise to £100.

In Sweden, the country that over recent years has gone furthest along the path towards a cashless society, the Riksbank is reviewing the possibility of making payments using the e-krona "as easy as sending a text".[11] In December 2020, Sweden's Minister for Financial Markets and Consumer Affairs, Per Bolund, announced the Riksbank had launched a study (which will run to November 2022) into the logistics of switching the country to the digital currency. This prospect has alarmed Sweden's banks, which are concerned that customers could also transfer their money from deposit accounts and into e-krona.

> The world has shifted from asking whether digital currencies will succeed, to how and when they will become mainstream
>
> Marion Laboure, Strategist, Deutsche Bank Research

Bitcoin's limitations

Although CBDCs are set to make a much greater impact over the coming years than private currencies, it is the latter – in particular bitcoin – that continue to regularly attract media attention.

This is due, at least in part, to bitcoin's chequered history since its launch in 2009 and its regular bouts of price volatility, as record highs are reached and are often followed by sharp falls. Nonetheless, after recent developments, even a conservative daily such as the *Financial Times* (*FT*) asked 'Is bitcoin going mainstream?' in February 2021. The *FT* noted that investor interest in bitcoin, which up to then had come mainly from family offices and hedge funds, was widening out.[12]

Amazon launched its first UK contactless grocery store in early 2021, in London

While more consumers are taking an interest, a reality check is needed. As Alexander Bechtel, Head of DLT and Digital Asset Strategy at Deutsche Bank Corporate Bank, notes, bitcoin is not money and thus presents no competition to fiat currencies. And the differences between the two greatly outnumber the similarities – a private cryptocurrency and a CBDC are two very different things that address different use cases. "One is a decentralised, permissionless, censorship-resistant, borderless open system to store and transfer value," notes Bechtel. "The other is digital cash, issued by a central bank, where it is unclear if it will be token- or account-based, or based on a blockchain or a centralised database.

"So the efforts around developing a CBDC are not driven by any fear that bitcoin could crowd out fiat money such as the euro, but rather by the prospect of a diminishing role for cash and increasing competition from stablecoins. Only its hardcore fans believe that bitcoin will serve as a means of payment in the future."

Moreover, the discussion about retail CBDCs is a non-technical one, focusing mainly on whether non-banks should be given access to digital cash. "Only at a second or third step might we possibly be talking about blockchain," notes Bechtel. "None of the advanced projects are using blockchain; indeed, in the euro area it looks as if we could get an account-based version of a CBDC that has nothing to do with blockchain. China apparently uses some cryptographic tools, but this is still far away from bitcoin or other cryptocurrencies."

Gaining traction

Yet, although it continues to attract plenty of adverse publicity, bitcoin has proved resilient, with major payment services providers having lent it further credence as an alternative asset class.

In October 2020, PayPal announced that customers could begin buying and selling bitcoin and other virtual currencies. More recently, BNY Mellon said that it will begin holding and transferring cryptocurrencies for its asset management clients, and Mastercard declared: "We are preparing right now for the future of crypto and payments… This year Mastercard will start supporting select cryptocurrencies directly on our network." The global payments group subsequently added, in February 2021: "Mastercard is actively engaging

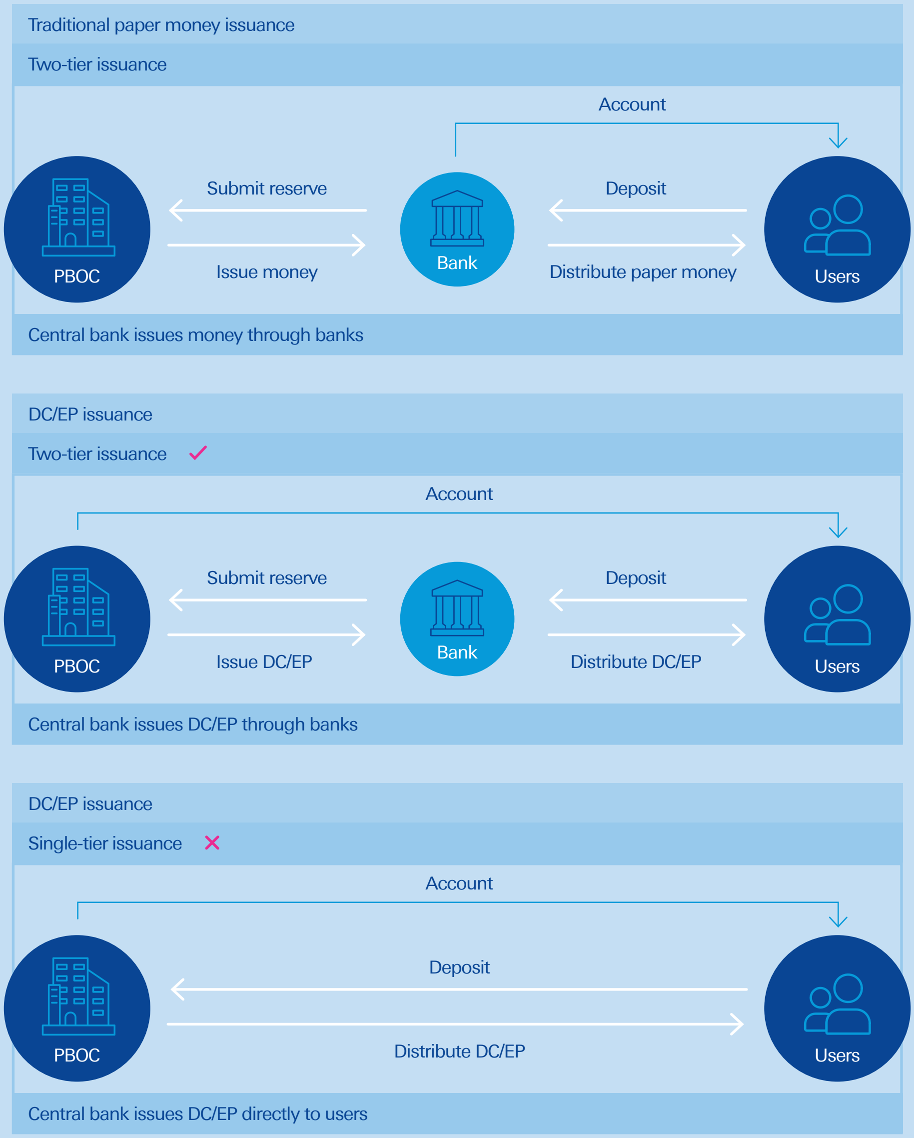
Images: Getty, Alamy

with several major central banks around the world as they review plans to launch new digital currencies, dubbed CBDCs, to offer their citizens a new way to pay. Last year, we created a test platform for these banks to use these currencies in a simulated environment."[13]

Bitcoin's pioneering of blockchain, or distributed ledger technology (DLT), for the currency's creation, distribution, trading and storage has also encouraged members of the US tech quintet of Facebook, Amazon, Apple, Netflix and Google (aka FAANG) to work on developing their own cryptocurrencies. As Katharina Paust-Bokrezion, Head of Payments Policy in Deutsche Bank's Political Affairs team, observes, there are a number of incentives. "The use cases for the industry and society are diverse and there are key benefits for money on a DLT compared to today's payment landscape," she says. "Payments today are largely digital, not just since the introduction of cryptocurrencies by FAANG. But the benefits of cryptocurrencies mainly derive from the programmability of the money itself and their usage in a cross-border context. A future-proof regulatory framework is a key basis to institutionalise DLT-based payment use cases."

To date, the most high-profile FAANG initiative has been Facebook's June 2019 announcement of plans to launch its global digital currency by mid-2020. Originally named Libra, the initiative quickly encountered strong opposition from G7 leaders, alarmed by the absence of supervision and regulation in the proposal.[14] The launch date was delayed (to "early 2021" according to reports, but this was still unconfirmed at the end of Q1) and scaled back in scope to a digital coin (now rechristened Diem) backed by the dollar, with other currencies to be added at a later date.

Figure 2: Key design features of central bank money



Source: Deutsche Bank

Amazon, having launched its first UK contactless grocery store in London in March 2021, is also working on a digital currency.[15] The group's Digital and Emerging Payments division has revealed it is developing a system for enabling customers in emerging markets to "convert their cash into digital currency".

So what will the future bring? "Capital markets are very excited about tokenised assets and CBDCs beyond just cryptocurrencies," says Samar Sen, Global Head of Digital Products at Deutsche Bank Securities Services. "But these types of digital assets are still nascent and the ecosystem requires more maturity."

Over the next five years, Sen expects some cryptocurrencies to become standard allocations in investor portfolios, while many others are as likely to fail. CBDCs "will start to gain traction, along with some approved stablecoins for use in settlements, payments and remittances," he predicts.

And will bitcoin endure? While it could still establish a long-term role for itself, some of the more ambitious claims for its future seem exaggerated, to say the least.

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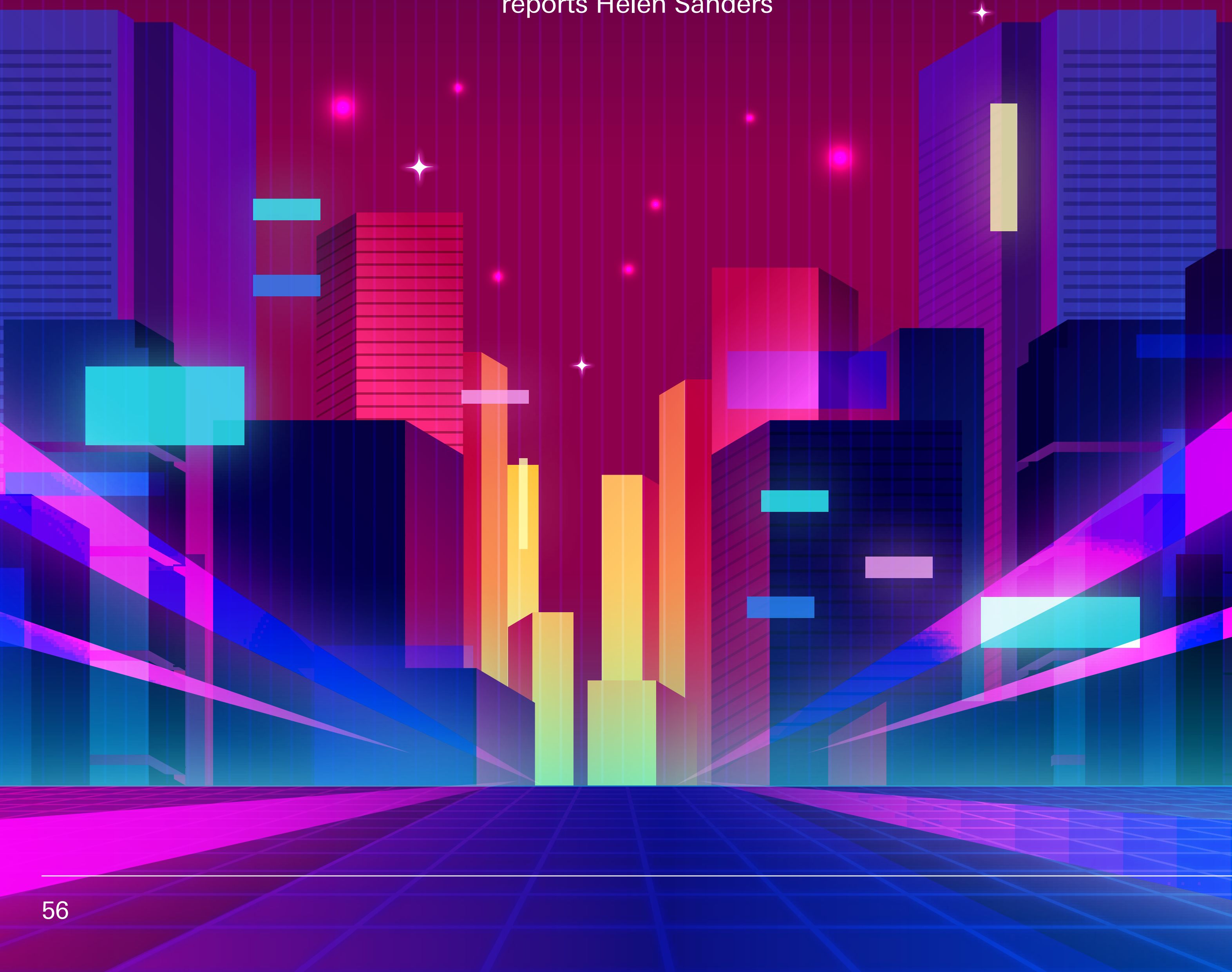
Reimagining the future of payments

The pandemic has accelerated the pace of change over the past year and bank-led merchant solutions are among the responses to a huge shift in payment methods and the boost to e-commerce, reports Helen Sanders



Among the favourite stories of editors and marketing teams is 'The Future of Payments', with graphs showing the steady but unstoppable growth in payment volumes, breathless reporting of the meteoric rise of marketing-savvy fintechs, and sci-fi forecasts about how consumers and businesses will behave in the future. Then came 2020. During the first half of the year, global payment revenues plummeted by around 22%, and despite a partial recovery during H2, a US$140bn decline in payments revenue wiped out gains achieved in each of the previous few years.[1]

But the payments story of 2020 – and equally 2021 – is not that of falling payment volumes. Rather, due to Covid-19, the future of payments as we envisaged it 18 months ago is already here. McKinsey's *Global Payments Report 2020*, published in October last year, notes that "the crisis is compressing a half-decade's worth of change into less than one year". In May 2020 alone, US online consumer spending grew by 93% year-on-year.[2] Consumer and business payment preferences, customer engagement models and payment operating models have shifted to a degree barely imagined by even the most visionary future of payments reports.

The question for corporations, banks, fintechs and other payment stakeholders is what this means for them. The answers, however, need to come quickly, in order that each can position for a new, and likely different, future of payments from the one previously imagined. One answer may be the bank-led merchant solutions that are emerging, such as that from Deutsche Bank, which is scheduled for a Q2 2021 launch.

93%

Year-on-year growth in online US consumer spending (May 2020)

(Mastercard SpendingPulse™)

The pressure on payments

For many corporations, the pandemic affected outgoing payments far less than incoming flows. Those that still used cheques in some markets could generally access an online banking system to switch to electronic payments, with both internal and payee objections quickly swept away by the shift to homeworking. While travel and entertainment expenses spend was decimated as business travel was cancelled, many companies shifted the unused credit limits on their card programmes towards purchasing cards for B2B spend.

The shift in incoming payments, however, has been far more significant given an acceleration in the digitalisation of business models (both B2B and business to consumer). Efficient merchant solutions – whether for cards, digital wallets, QR code-triggered transfers, or buy now pay later – have become a priority. For example, in 2020, 60% of point of sale transactions and 64% of e-commerce transactions in the Europe region were made by credit card, debit card or digital wallets (that are typically linked to cards).[3] Today, with the increase in contactless card limits, the rapid shifts in consumer preference towards digital payments is compelling corporations to find ways to manage the payment methods favoured by customers (see Figure 1). At the same time, they need to connect their online and offline businesses in a coherent way, and maintain both cash and working capital efficiency.

Resolving fragmentation and enhancing solutions

A challenge for many companies today, particularly those that operate internationally, is the fragmentation in merchant solutions. Different payment services providers, card acquirers and platforms make it difficult to manage incoming flows in a consistent way, with a high cost of change as new payment methods emerge. Consequently, many companies are turning to their cash management banks for a more integrated, or omnichannel, approach.

Technology is key to banks' success in driving a compelling merchant services proposition, notes Alexander Knothe, Director, Head of Client Solutions and FX Product, Deutsche Bank Corporate Bank. The bank is responding by creating a platform for e-commerce that connects digital business models with payment processors, banking services and other

Figure 1. Experiences of a European retailer: comments from Group Treasury

PRE-COVID-19:

"The ability to accept the payment methods that our customers want to use in each market is a competitive issue, but we need to balance this with cost, speed of credit to our account and the working capital issue. Working with new payment services providers and integrating flows into our payments infrastructure could be slow and laborious, so the benefits of accepting a new payment method had to be significant."

POST-COVID-19:

"With a huge shift towards e-commerce, a trend that we expect to remain, our own attitudes towards payments acceptance and integration have changed as well. No longer are long, resource-intensive projects to incorporate new payment methods acceptable; rather, the ability to process, integrate and credit digital payments quickly and easily has become a priority. This is essential both to create the excellent consumer experience from which we derive competitive advantage, and to ensure efficient and cost-effective payments processing. Increasingly, therefore, we are looking to omnichannel payments processing to avoid fragmentation, support our real-time treasury ambitions and facilitate future developments in the payments environment."

channels, enabling users to accept and manage online and offline payments.

"This means that we can support customers' global payment needs from end to end through a 'one-stop shop', including card acceptance, digital wallets, bank account-based payments and alternative methods," says Knothe. He adds that the approach provides a combination of integration, scalability and adaptability that can respond as customers' needs evolve over time.

The value of the connectivity provided by a platform is not simply the omnichannel approach to payments, but the additional services that can be integrated, such as specific solutions for marketplaces, as well as integrated foreign exchange (FX), liquidity and financing solutions. Companies selling cross-border, dynamic currency conversion in the customer's home currency create a seamless experience for the customer, without creating an FX exposure.

Companies across industries are also leveraging digital marketplaces more actively. Even before the pandemic, digital marketplaces were forecast to account for 60% of online sales by 2023, an increase of 22% each year compared to 2019 figures,[4] so solutions that connect buyers and sellers and accelerate flows are becoming essential.

In one example, Thorsten Woelfel, Global Head of Card Acceptance, Deutsche Bank Merchant Solutions, says that "the marketplace owner uses Deutsche Bank's acceptance payments infrastructure for their platform sellers so they can accelerate and automate cash management processes such as settlement and reconciliation."

Beyond the additional benefits of a single provider of merchant solutions and wider cash and treasury management services, there are also potential cost advantages where a bank is both card issuer and acquirer.

Woelfel explains, "By acting as both issuer and acquirer, we can deliver substantial savings to clients, and accelerate the flow of funds by avoiding having to route the payment through the cards network or perform additional end-consumer validation. This is also leading to an improved checkout conversion rate."

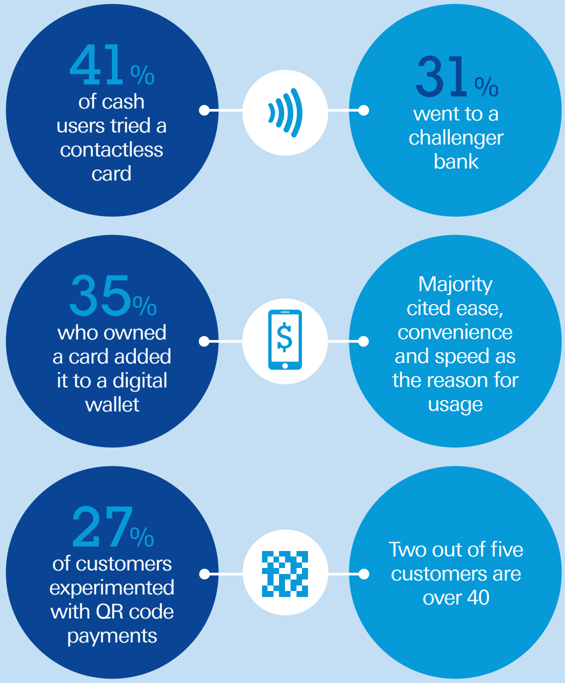
Banks' moves – such as Deutsche Bank's expansion into merchant solutions – do not mean that fintech providers are no longer relevant. Instead, it creates the opportunity to connect innovative solutions through a single channel, avoiding the fragmentation associated with multiple providers and platforms. Inevitably, no single provider, whether bank or fintech, and whatever their investment capacity, will seek to develop every element of their solution. Rather, partnerships that leverage the strengths of different parties, but are delivered to customers through a single relationship and platform, are more likely to meet the needs of corporations with complex needs and multinational operations.

Redefining the future of payments

The opportunities for integrated merchant solutions that connect buyer and seller will

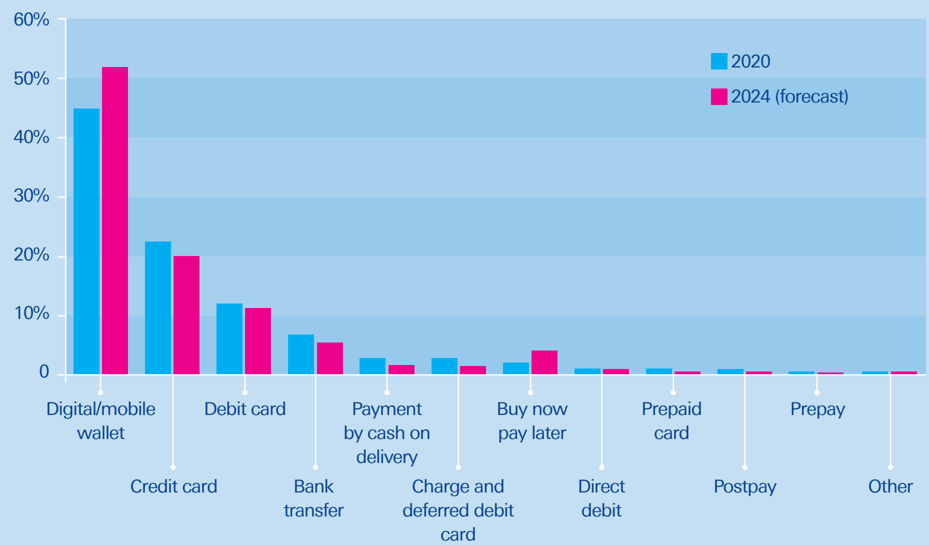
Figure 2: Ongoing shift to digital payment methods

- While the overall payment market is expected to steadily grow by 6% CAGR to US$2.7trn until 2023 (McKinsey), some payment methods benefit more than others
- Customers shift from traditional payment methods to contactless, QR code-based payments (e.g. Alipay) and wallets (e.g. Google Pay)
- Treasurers shift to new and digital payment methods:
  - Instant payments-based B2B
  - B2B payment virtual cards
  - Mobile payments and B2B wallets for vendors
  - B2B API-based payments



Source: Capgemini Financial Services Analysis, 2020

Figure 3: Global e-commerce payment methods



Source: Worldpay *Global Payments Report 2021*

> The crisis is compressing a half-decade's worth of change into less than one year
>
> McKinsey *Global Payments Report 2020*

continue to evolve beyond the traditional e-commerce models into wider ecosystem connectivity. Future mobility trends, such as public transport and electric vehicle charging, for example, will increasingly rely on the rapid, convenient exchange of value across multiple counterparties.

However, the pandemic has shown that the future of payments will not be decided by banks, fintechs or governments. Instead, these organisations simply create the conditions and solutions that enable new business models to grow, and consumers and businesses to consume goods and services in a way that best meets their needs. Consequently, a vision of the future as we might envisage it today is unlikely to look the same as the one we had even 12 months ago.

With the development of new, integrated, omnichannel solutions, from card acquiring through to digital wallets and alternative payments, FX and marketplace solutions, however, businesses can build their payments and collections infrastructure in a way that acknowledges that payment methods, and consumer and business preferences, will evolve and reinvent the way we buy, sell and pay.

Helen Sanders is an independent treasury and transaction banking specialist, formerly editor of Treasury Management International *and Director of Education at the Association of Corporate Treasurers*

Sources

[1] See https://mck.co/2ZmacYD at mckinsey.com

[2] See https://bit.ly/2NucSAW at mastercardservices.com

[3] See worldpay.globalpaymentsreport.com

[4] See endnote 1

Deutsche Bank and Mastercard expand partnership

On 24 February 2021, Deutsche Bank and card services provider Mastercard announced they are "expanding their partnership to jointly develop innovations in the area of digital payments for business clients".

The announcement explains that companies will now be able to offer their products and services to new customer demographics, develop digital business models and expand sales channels in Germany and beyond. These include digital platforms where firms can offer their products directly to consumers. To do this, they will need an efficient payment management system for mobile and digital payments, as well as a fully integrated series of payment flows into their financial and accounting systems.

"The coronavirus pandemic has triggered exponential growth in corporates' demand for digital payment solutions," said Ole Matthiessen, Deutsche Bank's Global Head of Cash Management, as the bank announced that it was strengthening its partnership with Mastercard.

"Payments is the key interface between banks and their clients," added Matthiessen. "Worldwide, only very few banks cover the entire spectrum of the payments area. This starts with card issuance and merchant acceptance and extends to cover payments clearing in the domestic and foreign markets, as well as additional services such as currency hedging, cash flow forecasting, or even fraud management services."

Peter Bakenecker, Divisional President Germany and Switzerland at Mastercard, commented: "The timing is ideal given current market developments, the imminent pandemic-induced shifts in global payments and companies' accelerated digital transformation." With Covid-19 adding to the impetus, McKinsey projects future growth in digital payments revenues of 6% per year to 2023, while Capgemini expects transaction volumes to increase by 11% each year over the same period.

> The pandemic has triggered exponential growth in corporates' demand for digital payment solutions
>
> Ole Matthiessen, Global Head of Cash Management, Deutsche Bank

FX workflow automation:
an expected journey

Colin Lambert reports on how pandemic disruption has impacted corporates' FX risk management strategies, illustrating this with a profile on Yusen Logistics' use of automation to meet its new business needs

If one positive emerged from the volatility shock to foreign exchange (FX) markets in March 2020, it was that the market structure worked. Liquidity held up and corporate treasuries were able to hedge. Spreads might have occasionally been wider than normal, but pricing was available throughout.

This meant that treasuries did not, after the initial shock of the first wave of the pandemic, need to be overly concerned about whether they could hedge exposures. A dispersed workforce and local limitations on the movement of people, however, created a very different problem. Manual processes were exposed, and the list of risks to be managed steadily grew as companies fought to ensure resources were adequate and in the right place at the right time. Logistics disruption and FX exposure were just two of these risks. Coping with business change during the early days of the pandemic could have derailed ongoing automation programmes, but it also underlined why momentum and sticking to the plan are so important. Streamlining, automating and optimising internal processes were more than a 'nice to have' benefit as remote working rapidly became the norm.

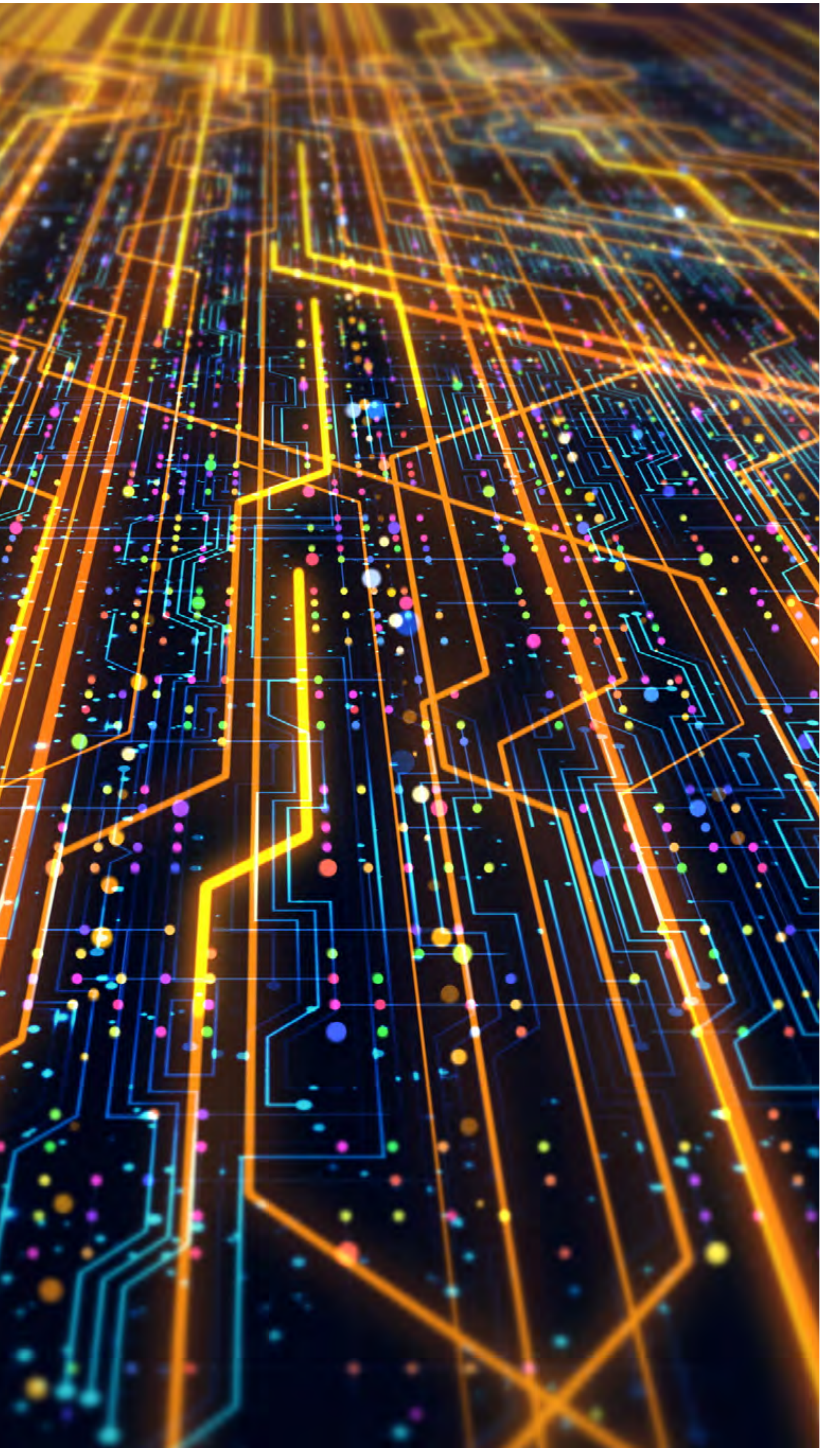
Few corporate treasuries would argue against greater workflow efficiency, but achieving it is less than straightforward and demands a collective organisational determination that also involves other finance functions and the IT department. In addition, while there are common processes, each firm has its own nuances in how it operates. This makes buying an off-the-shelf solution (such as an enterprise resource planning or treasury management software system) challenging. While it might work on 90% of the necessary workflow, adapting an already-built technology solution can be onerous and expensive if 100% efficiency is to be accomplished.

Workflow automation is, therefore, a thousand different journeys for a thousand different firms, especially in the corporate space. Yet there are plenty of junctions where those paths cross over, and here is where the opportunities lie. Rather than attempting to optimise an FX trade in a product – with a spread of perhaps one tenth of a pip – it is far better to optimise the processes that inform the decision to hedge in the first place.

Driving efficiency

Perhaps the biggest obstacle to implementing technological change is knowing when to start. No two companies are at the same stage of evolution, especially when considering the proliferation of 'new economy' corporations seeking to offer online services on a global basis. These firms are at a very different evolutionary stage to those that have existed for decades, or recently engaged in a merger or acquisition.

However, most treasuries share one common goal: a drive for efficiency. "Treasuries are highly motivated to achieve efficiencies," says Yannick Marchal, Managing Director, Global Head of Autobahn Maestro at Deutsche Bank. "For some this means beating the market



> Predicting currency movements is a very difficult business, but we are getting much more consistency in our numbers

Craig Tellwright,
Head of Financial Services,
Yusen Logistics (UK) Ltd

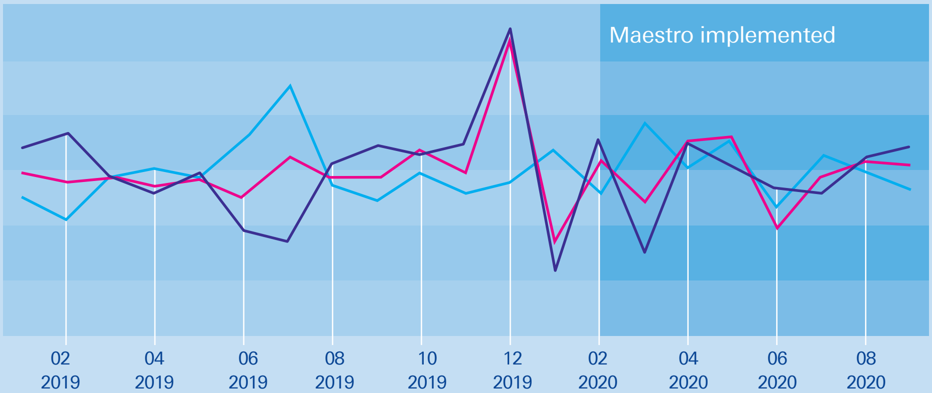
on execution, but for many others it is about streamlining and focusing on operational risk reduction." Conversely, in certain cases treasuries are willing to retain the same risk appetite when they can manage risk and related expectations with greater certainty.

Managing FX risk through automation has been the focus in recent years for Yusen Logistics,[1] the international freight forwarding, contract logistics and supply chain solutions provider and a subsidiary of the major Japanese shipping company Nippon Yusen Kabushiki Kaisha, otherwise known as NYK Line. At the Northampton head office of Yusen Logistics (UK) Ltd, operational risk reduction is the priority, says Craig Tellwright, its Head of Financial Services. It is not about profiting from FX trading; rather the company wants to reduce the volatility around its balance sheet hedging programme. Deutsche Bank worked closely with Tellwright to review his processes, prepare data for automation, and eventually launch Yusen's balance sheet hedging programme on its workflow automation platform.

"For many years our process was to try to predict closing balance sheet positions four or five weeks in advance and take out some forward contracts to hedge them," Tellwright explains. "That led to some big swings at the end of each reporting period due to exchange rate movements and an imperfect hedge. We began working with Deutsche Bank in early 2019 and now, while we still place the forward contracts, they are for one week and we adjust the hedge weekly. So, rather than try to predict the future and be exposed to exchange rate swings, our final balance sheet position is significantly better."

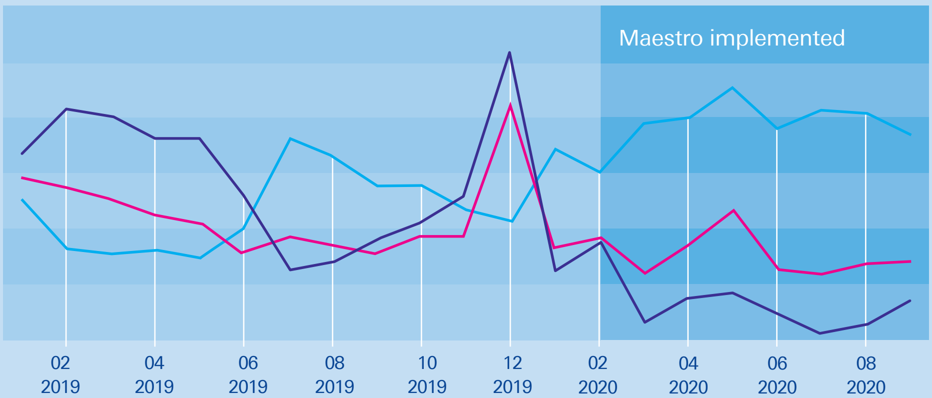
Figure 1: Yusen Logistics forex analysis, pre- and post-automation

By period



- Maestro implemented in February 2020.
- The system aims to reduce foreign exchange risk and enhance liquidity management by integrating balance sheet hedging with cash management.
- Prior to executing a new contract, the data is analysed and any under/over variance from the previous week, based on the latest position, is adjusted.
- Previously, non-deliverable forward contracts were placed based on the anticipated closing position of key balance sheet items at the period-end.
- Closing balances were estimated based on a combination of factors. However, any difference resulted in the variance value being exposed to any exchange rate movement in the period.

Year-to-date cumulative



Results:
- Movement in both realised and unrealised impacts have remained more static period by period.
- Balance sheet position is better protected (the only exposure relates to timing difference between trade execution and actual account closure) as forward trades are based on actual data, not subjective estimates.
- Flexibility to amend trades prior to execution enable currency purchases/sales at most advantageous rates.

Realised
Net
Unrealised

Source: Yusen Logistics

Tellwright acknowledges that accounting challenges remain, but the reduced volatility of returns and automated workflow mean the finance team can dedicate resources to specific targeted areas to help overcome them. "There are still risks of course. Predicting currency movements is a very difficult business, but we are getting much more consistency in our numbers," he says.

A good starting point for FX automation can come from the highest level, such as balance sheet hedging. However, as the journey proceeds, the right solution allows a treasury to implement fully integrated and synchronised workflow solutions across numerous FX activities, including hedging future expected exposures, cross-currency cash management, and cross-border payments and receivables.

There are also less obvious areas where automation can help. "While most treasuries manage their major currency cash flow effectively, they often have a lot of small exposures in regional currencies," observes Bhavna Sahay, Deutsche Bank's Head of Corporate e-FX for Western Europe ex DACH. "By identifying these balances and optimising them, within established parameters and thresholds for action, we are able to automate that process."

The next step

With an efficient and optimal hedging programme in place, what is the next step? It depends on the individual firm, but for Yusen it is getting bank balances automated. "We are working on this now, which will mean it is one less thing to worry about because our balances will be factored into our hedging programme," Tellwright explains. "It's the next step in simplifying our process and allowing us to focus on scenario planning and modelling for further changes to how we operate.

"Automation allows us to access the right data, and this is where the proactive, consultative approach really helped us. The bank talked to us about new ideas and what we could do together to help our business. This may have been about new processes or just pieces of data, but it enabled us to get our message across to non-financial people in the business and highlight how we are mitigating the risk around our FX exposures."

Rachel Whelan, Managing Director, Global Head of Transactional FX Product Management and APAC Head of Cash Product Management at Deutsche Bank, stresses the value of a holistic solution that links the hedging strategy to payment flows. "Using the hedge as part of the cash management process means a treasury is doing much more than just a currency hedge," she adds.

To achieve this though, requires working in partnership to build appropriate solutions, rather than a rush to market to buy a number of off-the-shelf technologies that have to be linked together. A consultative approach is needed, adds Whelan's colleague Johnny Grimes, Managing Director and Global Head of Liquidity Product, Transactional FX. "Technological transformation has to compete with a lot of other items on treasuries' 'to-do' lists. So transforming into the digital space needs to come at the right time for these companies. It is really about finding the right trigger point to initiate that transformation process, and that comes through open discussions."

Growth strategies

Perhaps the most persuasive argument for workflow automation is to help a company expand. Although many grow organically, as noted, others also build out through mergers and acquisitions – and this represents challenges for the corporate treasury as more complexity is introduced into processes. "As firms grow in this way it adds to the already disjointed data processes they need to support," says Marchal. "Using automation to combine these data processes is key to developing the right solutions.

"There are more parts of the business delivering data, often over different time horizons. By working closely with corporates, we can understand their transactional data patterns and develop the ideal solution to access that data, and use it to maintain effective hedging and cash management."

Geographical expansion also represents a challenge. Establishing a physical presence

> Treasuries are highly motivated to achieve efficiencies
>
> Yannick Marchal, Managing Director, Global Head of Autobahn Maestro, Deutsche Bank

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The number of Asia Pacific currency regimes

is difficult – and was even before Covid-19. As Whelan notes, Asia Pacific has many regional nuances and a wide range of currency regimes, making it more complex to do business in than other regions. A bank can help to overcome these challenges and open borders to new business.

This is especially important when it comes to restricted currencies where non-deliverable forwards (NDFs) are widely used for hedging. "A treasury using NDFs to hedge probably also needs to make and receive payments onshore," she observes. "We can help by linking the hedging programme to the payment collection function, while ensuring that local regulations are observed. Removing a major pain point from the process allows the company to focus on what it does best."

For others though, it is about new markets. In the digital age, a growing number of companies are looking to deliver products remotely, without a local presence. "Many companies in the digital space want to see how their business goes in new markets before committing physical resources," says Grimes. "These firms also still want to manage the financial side of the business at a central level. They don't want to outsource small pockets of risk, they want to manage it from a central perspective, which requires a holistic solution."

For many businesses, the current environment and length of the pandemic is putting treasury efficiency under particular scrutiny. Those adversely affected by Covid-19 could see a bounce back in growth, which in itself puts pressure on operations.

This means challenging existing perceptions about automation and being open to the potential benefits. What it does not mean is giving up control over cash management and hedging decisions. For some this will represent a big step into the unknown. Yet, as with so many successful solutions, the journey will start with a conversation about what is achievable.

Colin Lambert is a freelance financial journalist and publisher of thefullfx.com. He was previously a columnist for the FX news and events website Profit & Loss

Sources

[1] See https://bit.ly/3uvpR6z at flow.db.com

China's balancing act

China's 14th Five-Year Plan for self-sufficiency has not stopped the country's pursuit of renminbi internationalisation. *flow* examines the progress of the country's ambitious capital market liberalisation reforms, and how it is balancing investor appetite with the management of currency inflows and outflows

Since opening up to foreign investment and trade in 1978, China's GDP growth has averaged almost 10% per year.[1] Fuelled by its accession to the World Trade Organization (WTO) in 2001, its transformation into a manufacturing powerhouse, and growing domestic consumption, the country is now only second to the US in terms of purchasing power parity. Behind these milestones are a set of unique weapons in a growing arsenal of economic prowess.

China has devoted significant resources to expanding its economy and global influence. Massive infrastructure programmes – such as the Belt and Road Initiative (BRI)[2] launched in 2013 – are indicative of the country's ambitions on this front. As at September 2020, the value of BRI projects totalled US$4.3 trillion.[3] Although China has faced challenges – not least periodic bouts of stock market volatility and its strained trade relationship with the US – its economy is proving to be incredibly buoyant.

Covid-19 has provided a timely reminder of the country's economic strength. Yi Xiong, Chief Economist, China, at Deutsche Bank Research, notes that had the pandemic not happened, China would have met its 6.5% growth target for 2016–2020 set by the Communist Party's 13th Five-Year Plan (FYP), but only "by a very thin margin". Actual GDP growth for the period averaged 5.77%. "China's economy has proven to be extraordinarily resilient to Covid-19," says Xiong. "Economic growth is now more dependent on internal consumption as opposed to demand for exports."

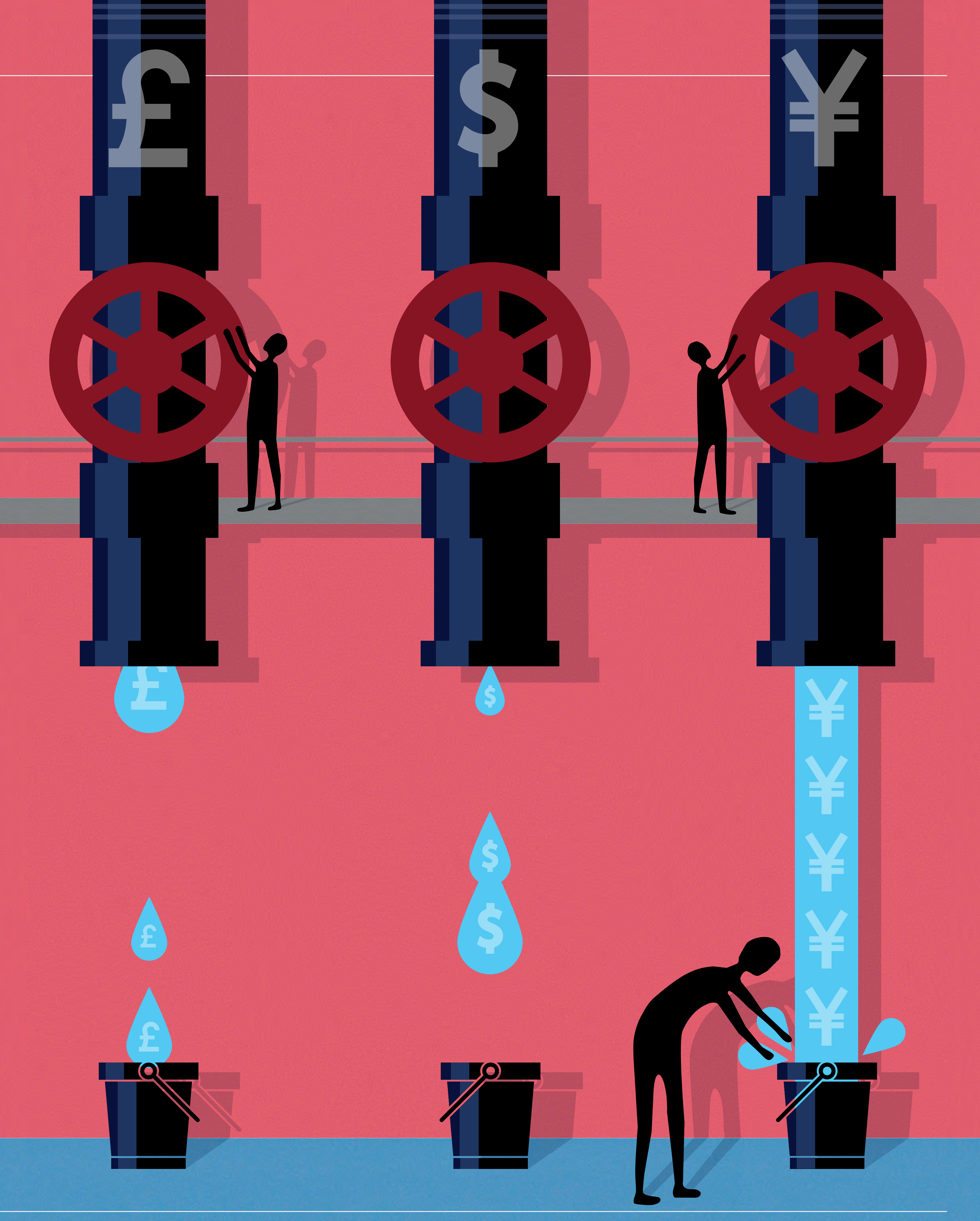
In Xiong's and Research Associate Grant Feng's March 2021 white paper, *China Macro: The 14th Five-Year Plan: 20 Targets for 2025*, they note the FYP's omission of average yearly growth targets, which were the centrepiece of previous editions. "Instead, it states that growth targets will be set each year, depending on conditions," notes Xiong. "China is wary of committing itself when it does not know whether America will choke off its supply of high-end semiconductors, among other things."

Although now less concerned with growth than self-sufficiency, China is pushing ahead with several ambitious market liberalisation reforms, as the country looks to internationalise the renminbi (RMB) by turning it into the reserve currency of choice for central banks. Greater international usage of the RMB, and providing foreign investors with more confidence in the currency, are offset by the necessity to maintain or even restrict currency inflows and outflows. This article examines how China is achieving this balance.

A market punching below its weight

The introduction and extension of cross-border platforms such as Stock Connect,[4] Bond Connect[5] and China Interbank Bond Market (CIBM) Direct[6] over the past decade have enabled foreign asset managers to access China's financial markets without the need to incorporate a local entity in the country. The result has been increased international flows into the Chinese equity and fixed income markets. For example, offshore investors increased their holdings of Chinese interbank market bonds by nearly 50% in 2020 to top US$500bn for the first time, according to Reuters data from 7 January 2021.

According to the China Foreign Exchange Trade System (CFETS) and National Interbank Funding Centre (a sub-institution directly affiliated to the People's Bank of China (PBoC) that provides a series of



Economic growth is now more dependent on internal consumption as opposed to demand for exports

Yi Xiong,
Chief Economist, China,
Deutsche Bank Research

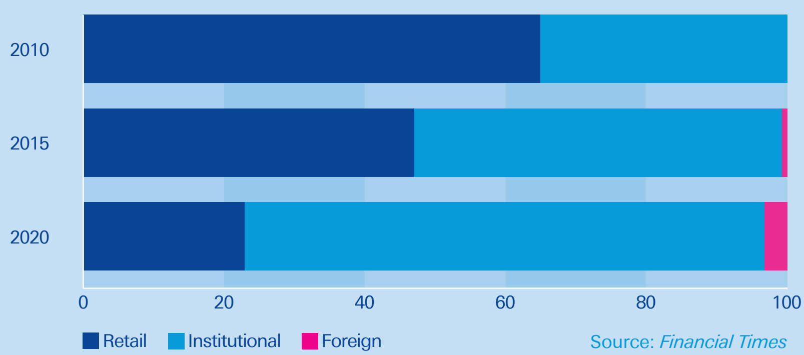
services covering issuance, trade, post-trade processing, information, benchmark and training services for interbank foreign exchange (FX) market, money market, bond market and derivatives market), foreign holdings of Chinese bonds have grown at nearly 40% per year since 2017, reaching 3.25trn yuan (¥), or €417.8bn, at the end of 2020.

These market reforms have been instrumental in convincing a number of global benchmark providers, such as FTSE Russell and the Bloomberg Barclays Global Aggregate Index, to add Chinese debt to their indices. Despite these reforms, foreign investor participation in the onshore market continues to be somewhat restrained. Again, this is stifling Chinese efforts to internationalise the RMB. According to the International Capital Market Association (ICMA), China's onshore bond market totals US$15trn, making it the second largest in the world after the US, but foreign investors hold just 3% of it (see Figure 1, below).

Tony Chao, Head of Securities Services, Greater China at Deutsche Bank, highlights several factors that explain why international investors were so underweight in Chinese bonds and equities relative to other developed markets. "China has historically been a restrictive market for foreign investors. Some global institutions have repeatedly expressed concern about repatriation risk and their ability to remit capital into and out of China," comments Chao. "This often precludes Undertakings for the Collective Investment in Transferable Securities (UCITS) funds from investing in China, as UCITS rules state that managers cannot participate in markets where there are restrictions on capital flows." In addition, the limited availability of FX hedging tools until 2020 was also off-putting for risk-sensitive investors.

To increase foreign participation in China's bond market, the CFETS has worked on expanding the interbank market's trading products and services to facilitate access. Meijing Li, General Manager of the RMB Market Department, sets out three key initiatives: "First, we are collaborating with third-party trading platforms such as Tradeweb and Bloomberg to enable foreign institutions to operate on a request for quote (RFQ) protocol from counterparties through their platforms or terminals via the over-the-counter CIBM Direct or Bond Connect channels. Second, we have introduced direct trading services under CIBM Direct, which allows foreign institutional investors to send quotation requests to domestic market-making institutions directly for spot transactions, and adopt the 'international payment' mode, which is more in line with foreign investors' trading habits."

Figure 1: Holdings of free-floating Chinese shares (%)



Source: *Financial Times*

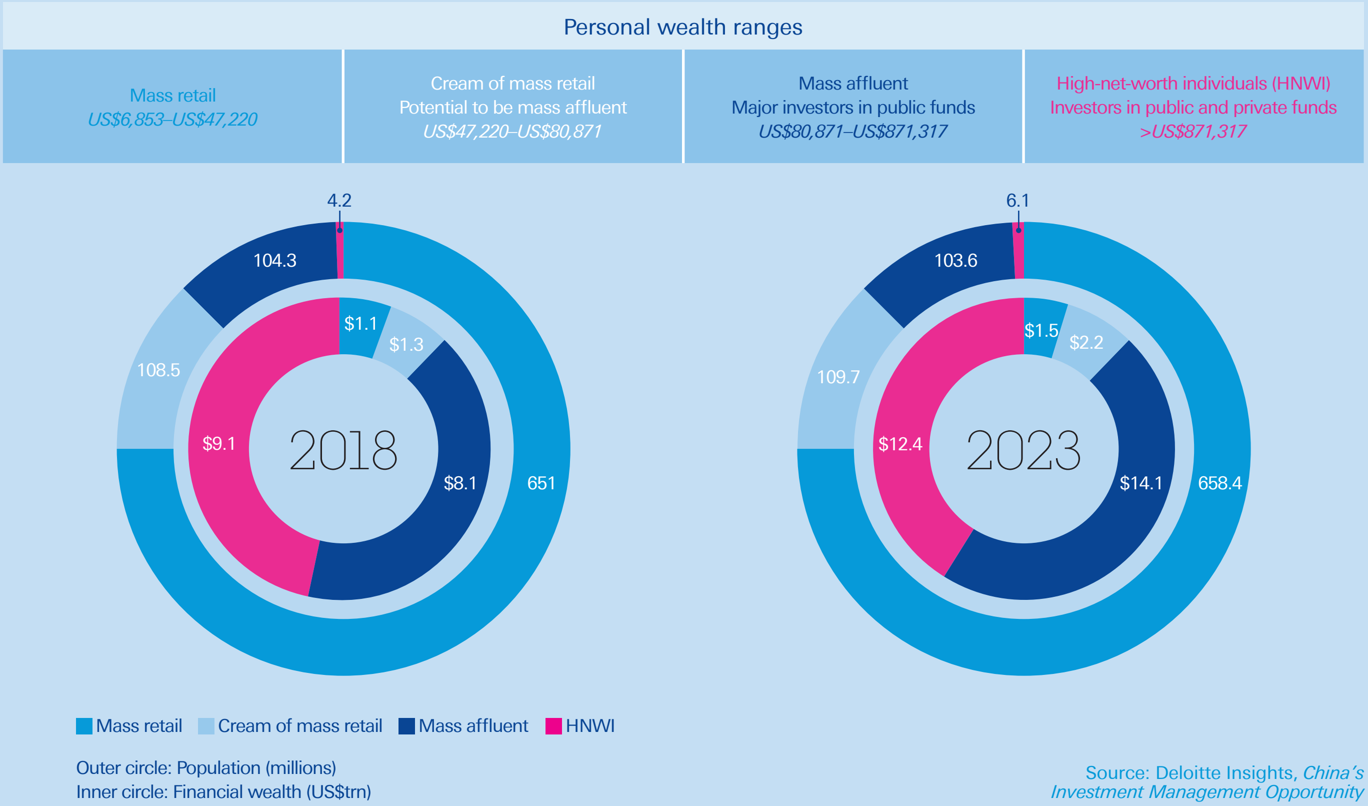
"Third, we continue to facilitate trading by optimising pre-allocation, post-allocation and list trading functions, providing a full volume of indicative quotes on the bond market, lowering the minimum trading volume of RFQ to RMB10,000 (€1,285), and extending the trading hour to 20:00 Beijing time and settlement cycle to T+N. Lastly, the overseas issuance system (ePrime) provides one-stop electronic services for book entry and pricing and allocation of various types of overseas bonds, including Chinese corporate US dollar bonds and 'dim sum' bonds."

As CIBM's important central securities depository and securities settlement system, China Central Depository & Clearing Company (CCDC) provides a full set of bond services, including issuance, registration, depository and settlement for government bonds, local government bonds, policy bank bonds, enterprise bonds, and so on. It has deposited more than ¥77trn of bonds, accounting for about 74% of the total bond market. CIBM Direct is the main channel for foreign investors to participate in the CIBM. CCDC provides the CIBM Direct service for more than 1,200 foreign investors; these investors held ¥2.88trn of bonds by the end of 2020, accounting for 95% of the total amount of RMB bonds held by foreign investors. Among the bonds deposited by CCDC, the bonds held through CIBM Direct account for 76% of the market share (Bond Connect accounts for the remaining 24%).

Wenbin Zhou, Vice General Manager of CCDC Shanghai Headquarters, explains that "In order to provide better service to foreign investors to participate in the CIBM, CCDC adheres to the international rules, such as the Principles for Financial Market Infrastructures, to build an efficient and transparent segregated account system to fully protect their rights and interests. On the other hand, CCDC cooperates with the custodian banks to provide mature and convenient multi-level services for the market. For example, CCDC launched remote electronic account-opening measures to overcome the impact of Covid-19 by building online communication platforms for global investors to improve market transparency.

"CCDC also brought out several settlement facility measures, including a non-standardised settlement cycle and recycling settlement. Repo trade for foreign investors through CIBM Direct is

Figure 2: Projected asset growth in Chinese retail investor segments



Source: Deloitte Insights, *China's Investment Management Opportunity*

also supported by CCDC (but is not yet applicable via Bond Connect). In addition, CCDC has established a connection with China's futures exchanges to support investors who use their RMB bonds as margin in futures trading."

Opening up of capital markets

Rules for international investors in China have also been simplified to attract further inflows. In September 2020, the China Securities Regulatory Commission (CSRC) confirmed that the Renminbi Qualified Foreign Institutional Investor (RQFII) and Qualified Foreign Institutional Investor (QFII) programmes would be brought together under one unified scheme, the Qualified Foreign Investor (QFI) regime, as of November 2020. This announcement came several months after the State Administration of Foreign Exchange (SAFE) abolished the QFII and RQFII investment quotas altogether.

Chao says the rule changes mean the application process for foreign investors has become more straightforward. "Before the QFII and RQFII reforms, it could take from six to nine months for international investors to set up an account. This was a major hindrance for investors. Now the application approval turnaround time has dramatically shortened, with an expanded group of eligible investors able to participate in the scheme." Similarly, some of the complicated documentation requirements have been eschewed in favour of an online application form. Other entry barriers have also been removed, namely stipulations that investors have a minimum track record in terms of their operations and assets under management. Risk management controls were strengthened too, with qualified foreign investors now permitted to appoint as many custodian banks as they choose, having previously faced limits.

In addition to making it easier for foreign investors to access onshore Chinese securities, regulators are providing overseas institutions with access to a more diverse range of RMB investment products. Further to the on-exchange, cash bond and onshore FX derivatives markets, foreign institutions can now transact in shares traded on the National Equities Exchange and Quotations market; exchange bond repos; financial futures and commodity futures; options; margin trading; securities financing; securities trading; and private funds.

Chao predicts that the government's decision to increase the number of available investment products will help generate foreign investor interest, especially from institutions that previously avoided China – citing a lack of investment choice, concerns about market liquidity, and an inability to hedge risk adequately. "We are seeing a growing number of long-term investors such as central banks and sovereign wealth funds express an interest in China," explains Chao. "These reforms will be vital in attracting foreign investors and strengthening the RMB's credentials."

A delicate balancing act

Given persistent volatility in the RMB's exchange rate, it might become necessary for regulators to maintain or even restrict currency inflows and outflows, while still seeking to encourage greater international usage. As Xiong tells *flow*: "The regulator needs to preserve a balancing act where international investors are assured that if they have money in China, they can get it out without restrictions. From what I see, the PBoC is trying to manage this while gradually increasing exchange rate flexibility."

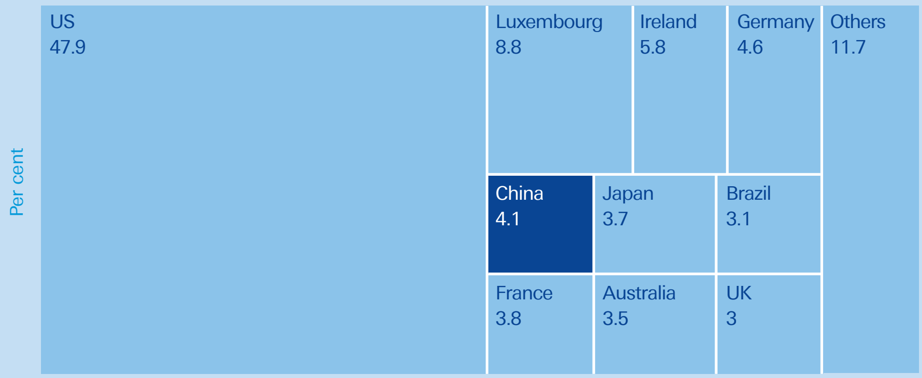
To date, regulators have managed to achieve this balancing act. "The PBoC wants a more free-floating RMB as it will allow for more freedom and flexibility in terms of monetary policy," says Xiong. "While some local companies that import or export may be worried about RMB volatility, I believe the central bank wants to gradually introduce a bit of volatility into the currency, and is keen for domestic corporates to learn how to manage currency volatility through hedging."

Money going in

More international fund managers are beginning to launch Chinese onshore subsidiaries as they look to win mandates from the country's burgeoning retail market, a demographic that Deloitte forecasts will make up US$30.2trn in investable assets by 2023 (see Figure 2 on page 67).[7] The ability of foreign fund managers to do this has been made possible by local regulators. Until recently, foreign asset managers looking to distribute products into China had to partner with a local securities provider, often through a minority-owned joint venture (JV). The wholly foreign-owned enterprise (WFOE) reforms announced in 2019 included a timeline for removing restrictions on foreign ownership of local asset management companies, putting an end to the JV requirement.

In April 2020, the CSRC accepted global asset managers' applications for wholly foreign-owned fund management companies in China. Initially WFOEs were only allowed to target institutions, but China's regulators have since confirmed they can also market to retail. This will likely prompt more global managers to establish WFOE private fund management companies in China, joining others such as Aberdeen Standard, BlackRock, Nomura and Fidelity who have already done so. "China's population is getting older and its middle classes bigger, meaning there is an increasing demand for wealth management and investing," adds Chao.

Figure 3: Top 10 domiciles of worldwide fund assets (%)



Source: *Financial Times* (European Fund and Asset Management Association; Investment Company Institute)

US$15trn

The value of China's onshore bond market

(ICMA)

According to the Asset Management Association of China, assets under management in China totalled RMB56.17trn in Q3 2020, while 1,200 mutual funds were launched last year, accumulating a record RMB3trn.[8] Research by the European Fund and Asset Management Association and the US Investment Company Institute also found that China overtook the UK, Australia and France in 2020 to become the fifth-largest fund domicile globally (see Figure 3, above).[9]

In addition, the European Union–China agreement on (direct) investment signed in December 2020 ensures that EU investors achieve better access to a fast-growing 1.4 billion consumer market, and that they compete on a more level playing field in China. The agreement includes conditions for market access covering areas such as manufacturing, the automotive sector and financial services. JV requirements and foreign equity caps have been removed for banking, trading in securities and insurance (including reinsurance), as well as asset management. In relation to providing a more level playing field, the agreement includes provisions stipulating that Chinese state-owned enterprises should not discriminate in their purchases and sales of goods or services.

Money going out

Since 2006, China has operated the Qualified Domestic Institutional Investor (QDII) scheme, a programme that enables domestic institutions to allocate capital offshore, albeit this is subject to quotas. SAFE data suggests that US$116.7bn in QDII quotas has been allocated since the initiative started.[10]

To further loosen capital controls, in 2020, China issued three separate QDII quota batches totalling US$12.72bn to financial entities such as banks, asset managers, insurance firms, securities companies and trusts.[11]

Facilitating inbound and outbound capital flows

Global banks with a licence to operate in China are facilitating these inbound and outbound flows. In December 2020, Deutsche Bank received its domestic fund custody licence from the CSRC, enabling it to provide post-trade services and other solutions for funds established in China, including WFOEs and the domestic asset management industry.

Following the QFII and RQFII changes, global banks are also facilitating offshore investors' access to new, onshore

> We are seeing a growing number of central banks and sovereign wealth funds express an interest in China

Tony Chao,
Head of Securities Services,
Greater China,
Deutsche Bank

investment products. In December 2020, Deutsche Bank successfully facilitated a margin trading and securities borrowing transaction under the new rules, on behalf of a major QFI client. "Deutsche Bank's global network makes it easier to support cross-border investment flows," explains Chao. "Not only can we help domestic investors with their overseas requirements, but we can also support offshore clients when accessing China too."

China: the recovery starts here

As many countries continue to grapple with Covid-19, China is one of the few that has successfully limited its impact. Liberalising measures and a balanced approach towards enabling inward and outward investment are having their intended effects. Assuming these policies continue, it may not be long before the RMB is fully internationalised and becomes a key central bank reserve currency and major settlement currency.

As the country forges ahead with its 14th Five-Year Plan, which was unveiled in March 2021, its future dependencies on global markets may look different in 2025 compared to 2001, when the country joined the WTO. One thing that is clear, however, is that in the race to economic recovery, foreign investors will be looking very closely at this promising market. At the same time, the growing wealth of China's domestic population should prompt more external investment as the rules around how citizens invest are further relaxed.

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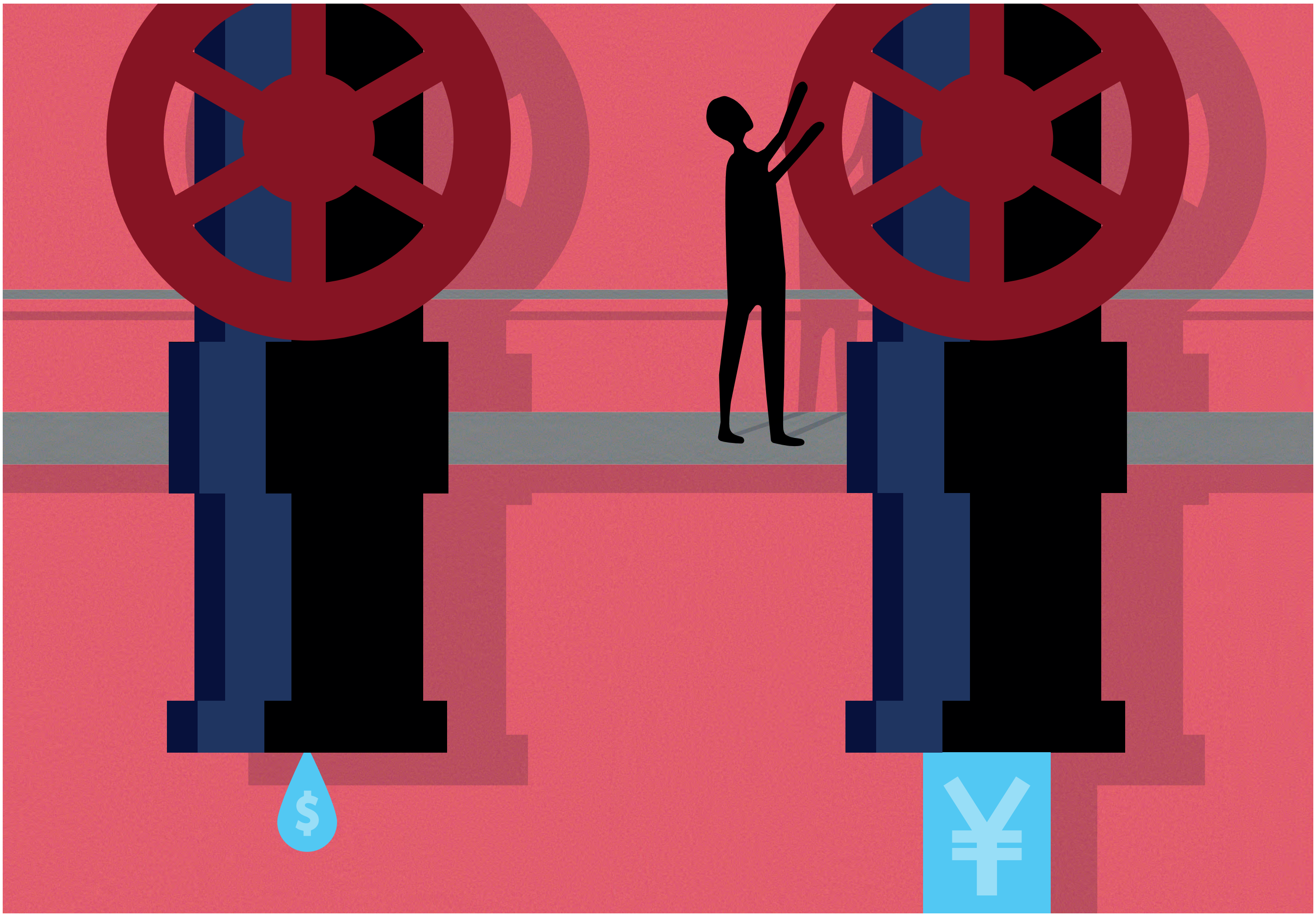


The golden touch

Gold is one of the few commodities that has seen its value soar during Covid-19. But what happens when its top-producing countries go into lockdown? Peter Steenkamp, CEO of South African gold-mining firm Harmony, tells *flow*'s Janet Du Chenne how the company is engaging investors amid the pandemic

If 2020 was a record year for gold,[1] then economic recovery and low interest rates look likely to further boost demand in 2021, given the commodity's popularity as a long-run inflation hedge, especially in emerging markets.[2] While this is good news for gold producers in these regions, it also places the burden of proof on them to show they are meeting today's higher standards in a sector that has been firmly on the radar when it comes to environmental, social and governance (ESG) concerns. South African-based gold-mining firm Harmony Gold knows this well and has a plan.

During these uncertain times, the company is bolstering its efforts to reach out to investors. "Investor engagement has never been more important than in the months since Covid-19," asserts Peter Steenkamp, the organisation's CEO. "Fortunately, we mine a commodity that is considered a 'safe haven' during unprecedented times and got to witness record-high prices."

Harmony operates nine underground mines in the Witwatersrand Basin in South Africa, which stretches from Johannesburg to Welkom in a 250-mile arc. It also owns the Kalgold open-pit mine on the Kraaipan Greenstone Belt, as well as several surface treatment operations. In addition, in Papua New Guinea the company operates Hidden Valley, an open-pit gold and silver mine in the Morobe Province, where it also owns half of the Wafi-Golpu copper-gold project.

With output from these operations, Harmony was able to increase production profit by 65% to ZAR6.8bn (US$417m) for the six months to 31 December 2020, up from ZAR4.1bn (US$280m) for the same period in the previous year. However, it has not all been plain sailing, and during the Covid-related disruptions, the company had to work hard to ensure it maintained its production targets.

As ESG themes have ascended investors' agendas during the pandemic,[3] Harmony is also enhancing its value creation story by operating safely and sustainably while delivering profitable ounces (or a high grade of gold) and increasing margins. This article explores the work of Peter Steenkamp and the investor relations (IR) team in telling that story.

Engaging investors

To begin with, their efforts leverage the company's 70-year experience in stakeholder engagement. Harmony Gold has a primary listing on the Johannesburg Stock Exchange and has maintained a listing of Deutsche Bank-managed American Depositary Receipts (ADRs)[4] on the New York Stock Exchange since 2005. In these times of disruption,

US$2,067

The price of an ounce of gold reached a record high in August 2020

investor relations have pivoted towards virtual communications, and Steenkamp comments that "platforms such as Deutsche Bank's Depositary Receipts Virtual Investor Conference have been ideal for reaching out to international investors and telling our story".

Steenkamp shared his story with *flow* during a phone call in March 2021, one year on from when Covid-19 restrictions were first enforced across the globe. "When lockdown first hit South Africa on 27 March [2020] we went into complete shutdown," he recalls. "But during that time, we were involved in a couple of virtual investor conferences and meetings including Bank of America's annual Sun City conference and we spoke to many investors."

Harmony's IR team and management also jointly hosted a large number of investor meetings in the space of two months. These meetings demanded they demonstrate their passion, enthusiasm and engagement skills to allay investor concerns about South Africa being in a hard lockdown ('alert level five') with all mining activity suspended. "Investors were asking what it meant for the company and what we were going to do about it," says Steenkamp. The team successfully managed their expectations, assuring them that Harmony was still generating income from its open-pit mines and surface operations, while selling its gold to the Rand Refinery, which was considered an 'essential service'.

In May 2020, the South African government relaxed restrictions to level four, which allowed mining operations to resume, albeit at only 50% capacity (full mining capacity was to be permitted at alert level 3).

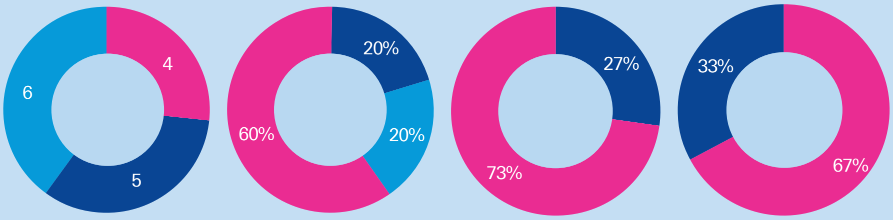
In addition to these 'crisis' meetings with investors, Harmony implemented a proactive IR campaign in March 2020 at the onset of the lockdown to assure investors of employees' safety and to mitigate any ESG concerns. This included radio campaigns and the development of a Standard Operating Procedure to help prevent transmission of Covid-19 at Harmony's South Africa and Papua New Guinea sites. "We also converted many of our hostels into isolation areas, while our medical hubs at our operations, which are run by professional nurses and doctors, were in full operation," says Steenkamp.

In line with 'responsible stewardship', which is one of Harmony's four strategic pillars, and the driving force of its ESG strategy, Steenkamp explains that the company also "looks after the community where our mines are based and explains what they need to do to protect themselves from Covid-19". The company distributes food parcels, sanitising equipment and protective face masks. "The entire mining sector pulled together and worked in unison during the hard lockdown," he recalls. "The mining industry has always been at the forefront of managing communicable diseases such as HIV and tuberculosis, to name but a few."

Harmony's mining operations are in close proximity to areas where these

Figure 1: Harmony's board composition as at 23 October 2020

Total members	Chairman and Lead Independent Director	Average age
15	✓	59



Tenure

- Less than 5 years
- Between 5 and 10 years
- More than 10 years

Independence

9 members of the board are independent, non-executive directors

- Independent non-executive directors
- Non-executive directors
- Executive directors

Transformation

11 members of the board are historically disadvantaged persons

- Historically disadvantaged
- Other persons

Female representation

5 members of the board are women

- Male
- Female

Source: Harmony Gold

conditions are rife. These diseases can potentially impact the health of the company's neighbouring communities, and vice versa. Steenkamp explains that "the mining industry has historically always been at the forefront of dealing with these social issues, and Covid-19 was another one that required we pay extra attention." As part of Harmony's Covid-19 protocol, and to promote social distancing, various safety measures, including reduced cage (elevator) capacity for transporting workers underground, and installing underground hand sanitising stations at various points, were introduced. "As a result of these initiatives, we didn't get the soaring numbers that people anticipated, given that workers are normally in close proximity to each other during mining operations," says Steenkamp.

Investor relations on the ground

Sharing these initiatives with investors is a basic fabric of Harmony's IR team. Steenkamp believes it's the role of the IR team to be the "custodians of sharing all news – both good and bad – and always looking for opportunities to share".

The IR team participates in several investor conferences and calls throughout the year in order to enact this news-sharing. Company announcements and press releases are distributed to a database, and the team also targets new investors and jurisdictions that could potentially have an appetite for an emerging market gold-mining firm. Unsurprisingly, the IR team brings together a range of different skillsets. According to Steenkamp, a "numbers person, a marketer, a writer and a lawyer" collaborate to craft a message that is externally shared through various activities. The team maintains a media schedule and a calendar dedicated to monthly communications on ESG topics and company activities in this area.

In addition, Harmony developed an ESG report for the FY19 reporting period and an inaugural Task Force on Climate-related Financial Disclosures (TCFD) report in FY20. Both of these reports accompanied the publication of the company's integrated annual report. "Our move to the TCFD was designed to improve our risk management process and to more clearly articulate the likely financial impact of climate change on the company's balance sheet and income statements," says Steenkamp. To this end, the IR team liaises with ratings agencies and completes disclosure questionnaires from these agencies.

> "Sustainability has always been a part of our DNA
>
> Peter Steenkamp, CEO, Harmony Gold

Distilling ESG messages

This proactive approach to sustainability was part of Harmony's DNA long before ESG became mainstream. The arrival of Steenkamp, a long-time mining safety advocate, in 2016 saw Harmony double down on its focus on the 'S' of ESG, which is an important objective given that the mining sector's reputation has been tarnished by past fatalities, injuries and illnesses.

A focus on issues such as health and safety, trade union relations, governance, and empowering South Africans previously disadvantaged under the Apartheid regime is something that mining companies have long considered in their messaging. Here, Steenkamp believes that active engagement is the measure of success: "Our main objective is to convince people that there is more to our business than just mining."

Harmony's dedication to employee welfare and its wider social commitments is also evident in other measures. For example, over the years it has acquired numerous mining operations from its peers that no longer complemented their strategies. Harmony integrated and optimised these assets, extending the life of mines and turning them into profitable businesses. A good example is the story of Unisel mine. Harmony acquired it in 1996 and extended its operating life by a further 24 years, thereby ensuring job security while uplifting and sustaining local communities and businesses.

The company also has a risk management framework to ensure the safety of employees is prioritised and that work-related injuries and fatalities are reduced. "Our total injury and accident frequency rate has improved over the past decade and is now at 7.69 per million hours worked as we strive towards our goal of zero loss of life," notes Steenkamp.

On the 'E' in ESG, Harmony's *ESG Report 2020*[5] seeks to address each of its sustainability impacts and what it is doing to manage them. This includes land rehabilitation and water management strategies, which are aimed at conserving

Images: Alamy

natural resources by improving water efficiencies through re-use and recycling. The company has also rehabilitated areas of land, grown sorghum as part of a biodiversity project, and uses water generation pumps at some sites to turn wastewater into potable water for surrounding communities.

"We have focused our activity on implementing key tenets of our new sustainable development framework – from growing our portfolio of assets towards profitable ounces, to managing and mitigating our water and climate risks. We continue to embed our proactive safety and healthcare strategies while building trust in the communities in which we operate," explains Steenkamp. "Over the next five years we aim to strengthen our delivery on key sustainable development indicators and adhere to the UN's 17 Sustainable Development Goals as they apply to our business."

Harmony is also planning to reduce its carbon footprint by consuming renewable energy and is building a 3x10-megawatt solar plant in the Free State with the ambition of ultimately increasing its output year-on-year.

On the 'G' of ESG, the company has adopted a corporate governance and compliance policy and framework underpinned by the principles of the King IV Code (the governing guidelines for listed entities) on Corporate Governance in South Africa. Based on these principles, the roles of the CEO and the Chairman are separate and the board composition is diverse and varied (see Figure 1 on page 72). The Chairman also has a Lead Independent Director to ensure independence and avoid conflict of interest issues.

Managing the trade-off

Given its sustainability experience, Harmony has been able to proactively address ESG concerns. "Despite the environmental impact of mining, ESG issues have always been core to a mining company," says Steenkamp. "Our social labour plan is government and union-approved and we know that in order to protect our licence to operate, we have to have these local economic development and corporate sustainability plans in place." A top rating from risk management company Risk Insights in terms of ESG disclosure and recognition in the Bloomberg Gender-Equality Index go some way towards validating the corporate's sustainability measures, and Harmony continues to work on set targets regarding its sustainability key performance indicators (see Figure 2).

Going for gold?

Going forward, in addition to stakeholder management of ESG issues, a commodities supercycle could present further ESG challenges for Harmony.[6] Steenkamp is unfazed, however: "We're not price-chasers but price-takers," he says. "We can't control the gold price, but we focus on what we can control and that is our production, costs and commitment to ESG regardless of where we are in the cycle. We are a resilient company that can add value through our existing operations and asset mix, integrated ESG practices, astute acquisitions, and green investments into South Africa."

With a focus on sustainable gold, the company's share price has increased by 305% since 2016 (as at 31 December 2020), when it introduced its strategy of producing safe profitable ounces and increasing margins. And, with increased production from surface operations over the past years, it has been able to de-risk while benefiting from the wider margins that those operations have delivered. "Ultimately, we've been able to demonstrate that we can provide value throughout all cycles, so while we can't control commodity pricing, we can focus on being a sustainable business that will still be here for many decades to come," concludes Steenkamp.

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Figure 2: Sustainable development performance is measured by group aggregate targets

Indicator	2022 target
Ownership	Minimum of 30% ownership of company by historically disadvantaged South Africans
People empowerment	50% representation of historically disadvantaged South Africans in management by 2018
Socio-economic development	Maintain 1% profit after tax for investment in socio-economic development
Training and development	Group aggregate: 6% human resources development expenditure as percentage of payroll
Number of fatalities	0 fatalities
Silicosis	0 new cases, based on current diagnostic testing
Noise-induced hearing loss	No deterioration in hearing greater than 10% among occupationally exposed individuals Total noise emitted by all equipment in any workplace must not exceed 110dB(A) at any location
Significant environmental incidents	0
Aggregate group target to reduce electricity consumption per tonne treated	5% reduction by 2022, based on 2017 base year
Aggregate group target to reduce greenhouse gas emissions per tonne treated (incl. slimes)	5% reduction by 2022, based on 2017 base year
Biodiversity action plans (BAPs) to be implemented at all sites by 2022	100% of sites to have implemented BAPs, as planned
Aggregate group target to increase affected water consumption per tonne treated	7% improvement by 2022, based on 2017 base year
Aggregate group target to reduce freshwater consumed per tonne treated	4.5% improvement based on a 2017 base year by 2022
Aggregate group target: Land available for rehabilitation	2% reduction of land available for rehabilitation year-on-year

Source: Harmony Gold


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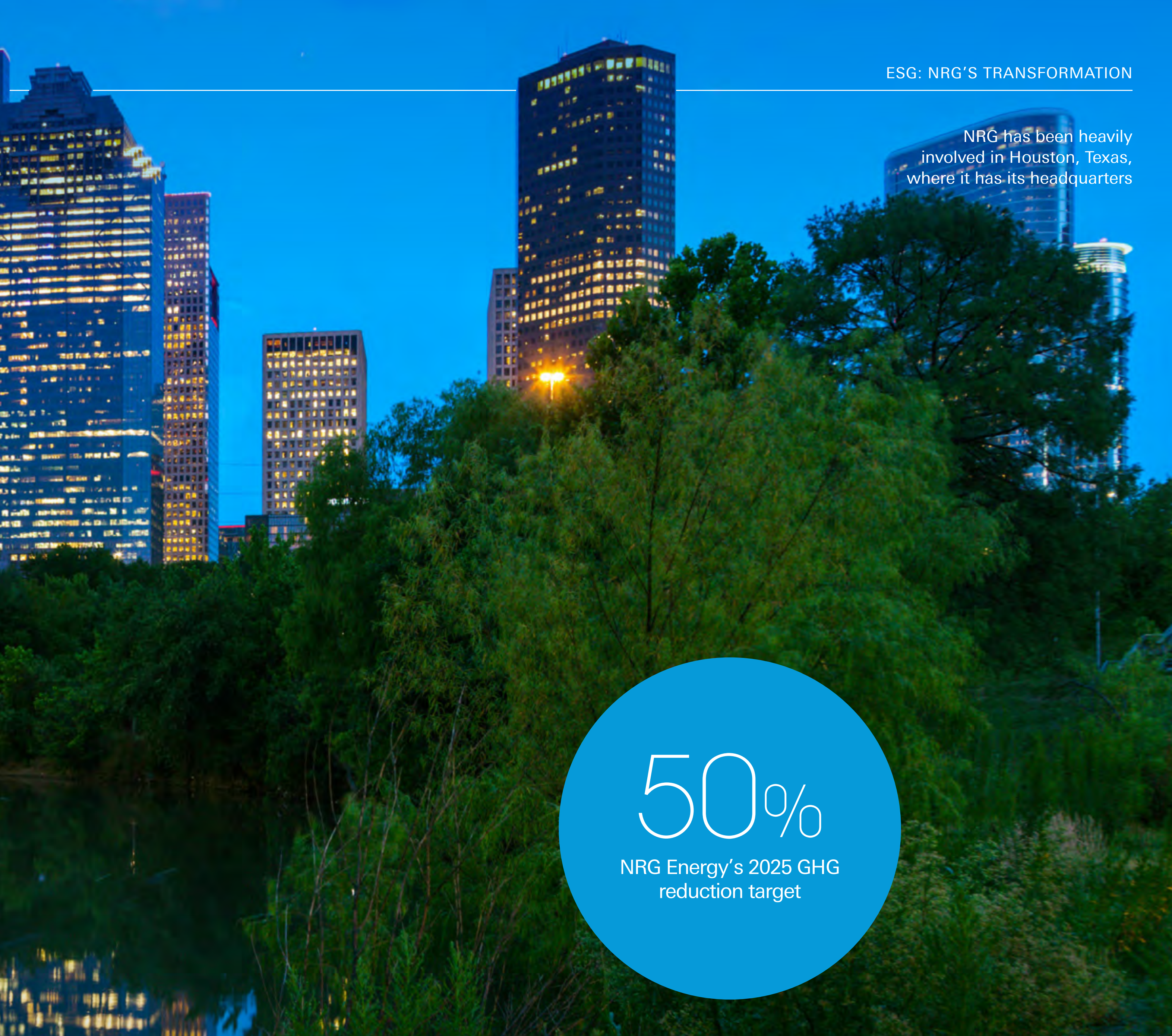
Easier energy

NRG Energy is at the centre of transforming businesses and communities by helping them buy clean energy in a way that is simple and tailored to their needs. *flow*'s Janet Du Chenne explores how the company's own transformation is enabling this initiative

When a Texas-based global food distributor with customers in 90 countries sought to reduce the environmental impact of its business operations, it set a 20% commitment to renewable energy by 2025. To meet its sustainability goals, the company looked at buying solar energy in the sunny state, but needed a simple, easy-to-execute contract, rather than the complex financial transactions and lengthy contract sizes (20 years) of power purchase agreements (PPAs). NRG Energy, which is also headquartered in Texas, stepped in to provide it with renewable energy at grid parity.[1]

To suit the company's procurement needs, NRG acted as the go-between to source the energy from the renewable generation and break it down into a simplified procurement process. Instead of a lengthy PPA with the energy facility, NRG provided the company with a simple contract for 10 years of 25 megawatts (MW) at a fixed price, allowing it to achieve price certainty in an ever-changing market. This ensured a much shorter time commitment and one single, consolidated bill. The 25MW of solar energy provided by NRG's plan supports 100% of electricity usage at 18 of the food distributor's locations, including its Houston headquarters and multiple warehouses that require significant refrigeration. Scott Hart, Vice President Supply, NRG Business, observed at the time: "This marks the beginning of widespread 'retail' renewable products – the type of plan that the competitive power market was created to develop. The result is transformative."

In another instance, the City of Houston was looking to reduce greenhouse gas (GHG) emissions, with the aim of powering municipal operations with 100% renewable energy by 2025. NRG provided the City with a simple, affordable solution that enabled it to achieve its climate commitment five years ahead of schedule. In addition to providing retail electricity, NRG is supporting Houston's larger Climate Action Plan implementation through sustainability consulting support, energy efficiency funding, and an affinity programme to help City employees purchase discounted renewable energy.[2]



NRG has been heavily involved in Houston, Texas, where it has its headquarters

50%

NRG Energy's 2025 GHG reduction target

These partnerships highlight the ways in which NRG has supported the energy transition over the past decade by simplifying the provision of retail renewable energy. At the same time, it is undertaking its own transformation from an independent power producer to a leading integrated energy and home services company. NRG's focus on serving the customer and its modern approach to power is paving the path towards a more sustainable energy future.

This transformation aligns NRG's emissions-reduction goals with United Nations (UN) Intergovernmental Panel on Climate Change guidance to limit global warming to 1.5°C in the post-industrial era. It is aiming to reduce its carbon footprint by 50% by 2025, from its 2014 baseline, on the way to achieving net zero by 2050[3] (see Figure 1 on page 79).

To achieve that goal, the company is decarbonising its existing business lines by replacing fossil fuel generators with more efficient gas-fired generators, and retiring those assets as they approach their economic end of life. Currently, gas-fired plants make up about 43% of the portfolio, with coal-fired facilities accounting for 34%.

NRG has also sold off fossil fuel assets, including 20.2 gigawatts (GW) of generation capacity, through its divestiture of its former subsidiary GenOn Energy, to creditors via a restructuring in 2017 and other announcements.[4] And, to support the move away from its power-producing roots towards an asset-light energy retailing business, NRG completed its acquisition of Direct Energy in January 2021 from British utility holding company Centrica in a US$3.625bn all-cash transaction.[5]

Uniting sustainable goals with financing strategy

In addition to the strides NRG has made in reducing the environmental impact of its operations, the company has also sought to tie its financing to the same goals. Its acquisition of Direct Energy marked the first time that a US issuer used a sustainability-linked bond

NRG provides customised renewable energy solutions that advance companies' social responsibility strategies

(SLB) to make that possible. To finance the acquisition, NRG used the proceeds of about US$3.8bn via a five-tranche bond offering,[6] which included the SLB linked to the company's sustainability targets.

A press release on the company's website says that the bond "presents the next step in aligning NRG's business and financing with company commitments towards a low emissions future by creating a direct link between its climate and funding strategies". The preference for an SLB over a green bond is that the former is "more adapted to its activities," NRG explained, referring to the Direct Energy acquisition as an example. By contrast, green bonds have ring-fenced use of proceeds requirements and must be used to fund certain low-carbon projects or investments.

A press release also revealed that the SLB will support the company's efforts to pursue growth, achieve its climate transition strategy and a low emissions future, and bring increasing value to its stakeholders.[7] By issuing the bond, NRG is linking financing to the realisation of its GHG reduction goal. The company's SLB framework[8] aligns with the UN Sustainable Development Goals (SDGs) relating namely to items 7 (Affordable and Clean Energy) and 13 (Climate Action). Its key performance indicator (KPI) is absolute GHG emissions, with a sustainability performance target (SPT) of reducing emissions to 31.7 million metric tonnes (MMT) of CO_2 equivalent emissions by the end of 2025, which is based on the company's previously issued public GHG reduction goal of 50% by 2025 from the current 2014 baseline.

Any divestments or acquisitions over the life of an SLB would not result in a recalibration of the SPT, in keeping with the overall net-zero ambition. Should NRG fail to achieve any of the targets included as part of the legal documents of any SLB, the implications could include a coupon step-up, or an increased redemption fee.

> Together we will embrace the modern low-carbon economy by leveraging best-in-class tools and technologies
>
> Mauricio Gutierrez, CEO, NRG Energy

Structuring the first US SLB

The seven-year bond[9] was part of an overall debt package used to finance the Direct Energy acquisition. The US$900m secured notes were measured against the KPI absolute emissions target of 31.7MMT of CO_2 equivalent at the end of 2025 (representing a 50% emissions reduction compared to the 2014 baseline). This covers emissions from the production of wholesale electric power at facilities owned or controlled by the company, emissions generated from electricity purchased and consumed by NRG, and emissions encompassed by employee business travel. If NRG fails to meet the target, this will result in a 25-basis point increase to the interest rate payable on the notes from and including the interest period ending on 2 June 2026, upon issuance of the 2.45% secured notes priced at 99.859%.

Working with bank partners

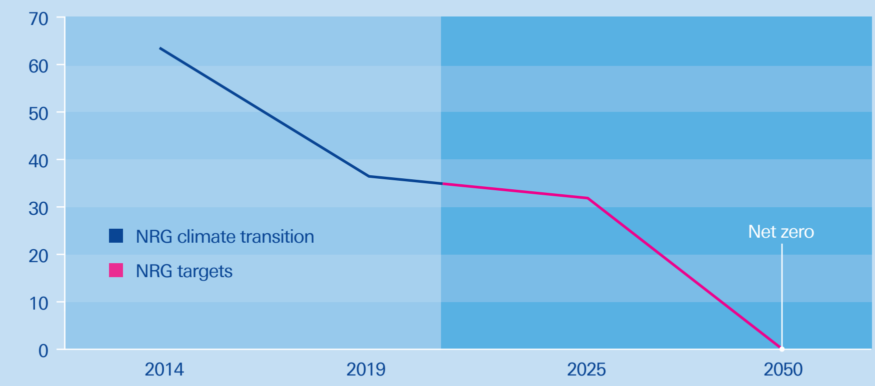
In addition to the SLB, NRG issued US$500m of senior secured notes paying 2% interest and maturing in 2025, US$500m of senior unsecured notes paying 3.375% interest and maturing in 2029, US$1.03bn senior unsecured notes paying 3.625% interest and maturing in 2031, and US$900m of

Images: Alamy, NRG Energy

Alexander Funding Trust pre-capitalised trust securities (1.841% senior secured notes), or P-caps, redeemable in November 2023. Proceeds from the P-caps offering, which will be kept locked up in the trust, are designed to support letters of credit, which NRG needed to back collateral obligations associated with Direct Energy's trades.

Deutsche Bank's corporate and institutional client coverage teams orchestrated the provision of multiple services to the overall debt package. These include trust and agency services, such as bond trustee, registrar, paying agent, transfer agent, collateral agent, administrative agent, account bank, and Delaware Trust services provided by Deutsche Bank Trust Company Americas to all of the issuances, and a letter of credit provided by the bank's trade finance franchise in relation to the P-caps.

Figure 1: NRG's climate transition strategy and goals (MMT of CO_2 equivalent emissions)



Source: NRG

Gaetan Frotte, Senior Vice President, Interim Chief Financial Officer and Treasurer at NRG Energy, describes these services as integral to NRG's funding strategy, ensuring its accountability to investors in meeting its climate goals. "The SLB, in particular, reflects our commitment to reducing GHG emissions. By tying our business and financing to our climate goals – supported by Deutsche Bank's trust and agency services, which is facilitating the overall issuance, and the bank's trade finance franchise, which is providing guarantees to support this transformational acquisition – we are well on track towards a net-zero future."

Gerald Podobnik, CFO and Chief Sustainability Officer of Deutsche Bank Corporate Bank, says that the bank is seeking to play an active role in achieving the targets set out in the 2016 Paris Agreement: "In doing so, we will assist our clients in implementing their sustainability strategies and monitor their achievements over the longer term as well."

Rating sustainable financing

NRG obtained a second-party opinion of its SLB framework by Moody's affiliate Vigeo Eiris (V.E). The benchmarking firm, which provides environmental, social and governance (ESG) assessments, data, research, benchmarks and analytics, graded the sustainability-linked pricing metric used by the company on its novel bond "advanced", which is its highest rating.

Benjamin Cliquet, Head of Sustainable Finance Business Development at V.E, notes that NRG was not the first to issue an SLB (it was preceded by Italian energy company Enel, Brazilian pulp and paper company Suzano, Swiss pharmaceutical firm Novartis, and French fashion house Chanel), and it had previously used the sustainability-linked mechanism in the loan market. "For the past three years you had many energy companies working directly with banks, which included this mechanism in loans," he says. "Then, in 2020, the bond market began to follow, and while NRG was among the first issuers of a linked bond, the company has been working on similar approaches in the loan market." Cliquet expects the SLB market to grow as other US utilities study it with the intention of issuing in 2021.

NRG also obtained an updated ESG risk rating from Sustainalytics. The company reviewed various ESG factors relevant both generally across industries and specific to NRG's business and provided an ESG Risk Rating score of 31.8 on a scale of 0–100 (with 100 being the most severe risk rating), representing a significant 7.9-point improvement from its 2019 risk rating of 39.7. The rating places NRG in the 36th percentile (172nd lowest risk out of 483 companies) of its industry group (Utilities) and in the 16th percentile (10th lowest risk out of 59 companies) within its sub-industry group of Independent Power Producers and Traders.

The ratings provider also noted that NRG "exhibits strong corporate governance performance, which reduces its overall risk. The Carbon – Own Operations category is NRG's second most material ESG issue after Emissions, Effluents and Waste, and this Framework outlines the steps NRG is taking to address this issue. Furthermore, NRG is noted for not having experienced significant controversies".

Powering ahead

On 5 January 2021, Mauricio Gutierrez, CEO of NRG, highlighted the acquisition of Direct Energy as a "new era" in the company's transformation into a sustainable energy retailer. "Together we will embrace the modern low-carbon economy by leveraging best-in-class tools and technologies to better serve our customers," he said in a video interview about the deal.[10]

The company also provided a glimpse of what businesses, homes and communities in America can expect it to deliver in support of their sustainable goals. Going forward, it will be easier for them to access over 1.8GW of renewable power contracted, on demand. Households can also look forward to charging home vehicles. As the saying goes, real transformation requires effort. And as NRG is showing, it needs the right energy too.

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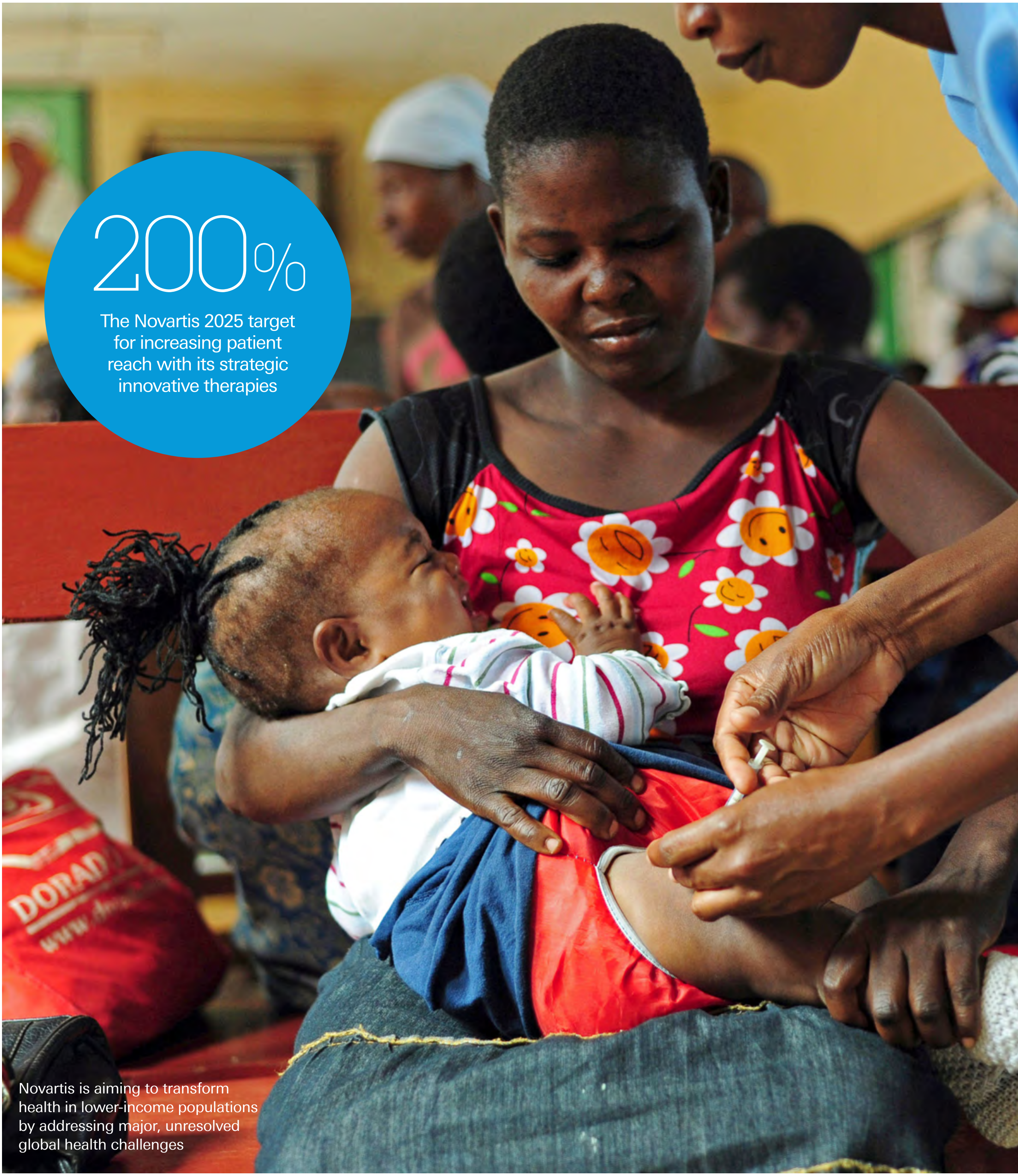

200%

The Novartis 2025 target for increasing patient reach with its strategic innovative therapies

Novartis is aiming to transform health in lower-income populations by addressing major, unresolved global health challenges

Pharma karma

Novartis is taking bold steps to increase access to medicines and tackle complex global health challenges. *flow*'s Janet Du Chenne explores how a social bond focuses the pharma company on achieving ambitious targets for getting medicines to low- and middle-income countries

Covid-19's dominance of the global healthcare agenda continues to hinder access for low- and middle-income countries (LMICs) to prevention and treatment efforts for many other diseases. Two billion people worldwide have no access to basic medicines and healthcare,[1] while a World Trade Organization/World Bank study found that, even before the pandemic, 100 million people each year were impoverished by uneven healthcare expenditure.[2] Weak healthcare systems in LMICs also hinder timely diagnosis and treatment. Swiss pharma company Novartis is focused on tackling these challenges.

In September 2020, as part of its environmental, social and governance (ESG) agenda (based on ethical standards, pricing and access, global health challenges and responsible citizenship), the company issued a sustainability-linked bond (SLB) with specific targets for global health and access to medicine. It is aiming to increase the number of patients in LMICs reached by its innovative therapies by 200% by 2025, and by its treatments for leprosy, malaria, sickle cell disease and Chagas disease by 50% over the same period. More than 24 million additional patients could be reached if Novartis achieves both targets.[3]

In the bond's prospectus, the company says that the eight-year €1.85bn SLB creates a direct connection between progress towards achieving these targets and its funding strategy and cost of capital.[4] Bernd Bohr, Partner at Mayer Brown, Novartis's legal counsel on the bond issuance, comments on this rationale: "We're still not at a point where there are any real commercial advantages for issuing an SLB," he explains. "Historically, AA-rated issuers such as Novartis could raise money in the capital markets whenever they wanted to at very low interest rates. The company issued this bond at a zero coupon, so it is paying no interest, but the bond is core to Novartis's vision of reimagining medicine to improve and extend people's lives and finding areas where it can add the most value to society." Novartis enlisted Deutsche Bank as one of the managers, as well as fiscal agent and principal paying agent on the bond, which priced at 99.354% of the aggregate principal amount.

The bond was only the second to be based on the International Capital Market Association's (ICMA's) SLB Principles[5] (published in June 2020), and the first to be linked to achieving social sustainability performance targets. "Unlike energy utilities such as Enel, which [in September 2019] issued the first bond linked to renewable energy targets and the reduction of greenhouse gas emissions, Novartis picked social sustainability performance targets that are core to its business as a medicines company," says Bohr.

Building trust with society

The targets are thus linked to one of Novartis's five strategic priorities: building trust with society. (The other four are unleashing the power of people, delivering transformative innovation, embracing operational excellence, and going big on data and digital.)

One of the ESG key performance indicators (KPIs) is based upon Novartis reaching carbon neutrality across its entire supply chain by 2030. In November 2020, the company signed five virtual power purchase agreements (VPPAs) with three developers – Acciona SA, EDP Renewables and Enel Green Power – to add more than 275 megawatts of clean power to the electrical grid, which will be produced by six new wind and solar projects located in Spain.[6] This move means that Novartis is set to be the first pharmaceutical company to achieve 100% renewable electricity in its European operations through VPPAs.

Reimagining medicine

These KPIs are aligned with Novartis's vision of "reimagining medicine to improve and extend people's lives". As a leading global medicines company, it uses innovative science and digital technologies to create transformative treatments in areas of great medical need.

For the SLB, Novartis chose two KPIs – reaching more patients with its flagship programmes, and improving access to innovative therapies in LMICs – that are based on its 2025 patient access targets and are key parts of the aim to reach patients in various demographics and geographic areas (see Figure 1 on page 83). The flagship programme target builds on Novartis's approach to transforming health in lower-income populations by addressing major, unresolved global health challenges. Novartis is researching and developing a portfolio of drug candidates for the treatment of neglected tropical diseases that afflict around 1.6 billion people worldwide, as well as for sickle cell disease.

This flagship programme KPI reflects the approach to healthcare that Novartis adopts in its core business. For example, the company is using remote diagnostics and mobile phones to detect, prevent and treat the rising number of cases of leprosy in the Philippines in communities that are often hard to access. The detection system enables frontline healthcare providers to send images of suspected leprosy lesions and symptoms to a specialist via SMS or an app.[7] The company is also investigating the role of the P-selectin protein in sickle cell disease, developing innovative new medicines to treat the disease, and working to expand people's access to diagnosis and treatment.

Bohr describes how the approval process for medicines in certain regions adds a layer of complexity and risk to the bond's KPIs. "Pharma companies such as Novartis need to get the drugs approved in these countries and work with local insurance companies, health ministries and non-profits to familiarise doctors with the product so that they can prescribe and administer them."

Novartis's second KPI is designed to address unequal access to the latest medicines. This challenge has come into sharp focus since the beginning of the Covid-19 pandemic, with the affordability of vaccines affecting LMICs' ability to access them. Local regulations and weak healthcare systems in certain countries may also impede the approval and distribution of such medicines.

> Novartis picked social sustainability performance targets that are core to its business as a medicines company
>
> Bernd Bohr, Partner, Mayer Brown

Novartis is set to be the first pharmaceutical company to achieve 100% renewable electricity in its European operations through VPPAs

Images: Alamy

Given these disparities, in the past, pharma companies have often decided to focus on getting their medicines approved first in commercially attractive markets such as the US, Europe and Japan, neglecting access strategies for LMICs. "The unfortunate reality is that there has historically been a massive gap between when new drugs get admitted in these markets and in the LMICs," says Bohr.

Novartis is looking to reduce the launch time lag between developed and developing markets for its innovative therapies by systematically integrating these access considerations into its launch process. Specifically, it is implementing affordability strategies and health system strengthening programmes and pursuing adaptive research and development for LMICs. In addition, it is using e-commerce and online pharmacies to lower distribution costs.

Measuring target relevance

Novartis received second-party opinions on its bond from the Access to Medicine Foundation and from ESG ratings and benchmarking consultancy Sustainalytics to validate the robustness and relevance of the bond's KPIs and targets based on the ICMA SLB principles.

Lili Hocke, Product Manager, Sustainable Finance Solutions at Sustainalytics, shares insights on how these principles were applied to the KPIs. "As an independent party, we assess if the bond is aligned with market expectations; that is, how well it is aligned with the relevant principles that have been put in place in the market by the buy side and the sell side. The alignment with the principles forms the common denominator of what we can consider to be relevant to assess."

In the first part of the assessment, Sustainalytics considered whether the patient access targets on which the KPIs were based were material, relevant and ambitious (i.e. whether they build on business as usual) and linked to the issuer's sustainability strategy. Hocke explains: "Since access-to-medicine targets are reported differently by each company, we based our assessment of ambitiousness on the comparison of the target with Novartis's historical performance on the KPI. We assessed whether the current target goes beyond the historical performance trend." In an ideal scenario, a KPI is also comparable to peers' performance and to system boundaries.

Figure 1: Patients reached with innovative and generic Novartis therapies

	Year ended 31 December			
	2017	2018	2019	2020
Strategic innovative products patient reach:	238,021	382,714	547,664	696,669
Flagship programmes patient reach:	39,589,335	28,509,151	15,069,483	43,912,162

Source: *The Novartis in Society ESG Report 2020*

In addition, since the SLBs are a performance-based instrument, issuers need to link the bond's financial or structural characteristics to the achievement of the targets: "It's about what we can expect when they achieve these access to medicines targets, and what happens should they fail." While the bond runs to 2028, Novartis will increase the coupon by 0.25% if the company fails to meet both 2025 patient access targets.

The second part of the assessment is focused on what Sustainalytics deems relevant in enabling investors to decide whether to invest in Novartis's bond beyond the alignment with the relevant market principles. "Here we look at the strength of the sustainability strategy of the issuer, where the company is in its sustainability journey, how well it is managing overall risks that are related to sustainability, and how important these medicines are in the areas that are targeted by Novartis," says Hocke.

Resetting pharma's reputation

Novartis's passion to deliver medicines to LMICs saw it carving out a specific role for itself during the Covid-19 crisis. Vas Narasimhan, CEO of Novartis, noted the general effects of Covid-19, which affected patient visits, and that some therapeutic areas were more impacted than others. During a CNBC interview in January 2021,[8] he observed that "there's a second pandemic ongoing, or a syndemic,[9] so to speak, that's really impacting patients' ability to get non-communicable disease treatments in a timely manner."

He added that "the pandemic has been a reset for pharma's reputation". Here, the company is doing its job of supporting LMICs in achieving herd immunity by expanding access to medicines. Instead of developing its own vaccine (having sold its vaccines unit to GlaxoSmithKline in 2015), Novartis is helping other companies to make them, and signed an initial agreement in January 2021 to provide manufacturing capacity for the Pfizer-BioNTech vaccine.[10] It will take bulk mRNA active ingredients from BioNTech and fill vials under aseptic manufacturing facilities at its site in Stein, Switzerland for shipment back to BioNTech for distribution to healthcare system customers around the world.

In March 2021, Novartis signed an agreement to manufacture the mRNA and bulk drug product for the Covid-19 vaccine candidate CVnCoV from CureVac, and it will supply up to 50 million doses by the end of 2021, and up to a further 200 million doses in 2022.[11] Delivery from its manufacturing site in Kundl, Austria is expected to start in summer 2021. In addition, Novartis is making 15 drugs that treat key symptoms of the virus available to LMICs at zero profit until a vaccine or curative treatment becomes available.

Going forward, with the confluence of Covid-19 and other diseases, Novartis is seizing the moment to build trust with society as countries race towards recovery. And, with its patient access targets aligned to its core business and ESG objectives, it aims to ensure that in that race, no patient gets left behind.

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Driving data quality

Corporate clients are demanding insights and predictive analytics built on high-quality data from their banks, and there is good reason for this, as many have a global footprint, complex flows and a large product suite. Cian OMurchu shares the Deutsche Bank journey

According to European Commission statistics, the value of the data economy in its 27 EU countries, together with that of the UK, will exceed €550bn by 2025.[1] The European Commission defines the data economy as representing the overall impacts of the data market on the economy as a whole. It involves the generation, collection, storage, processing, distribution, analysis, elaboration, delivery and exploitation of data enabled by digital technologies.

What does this mean for corporate and business financial services provision? In short, the winners will be those with the best analytic competencies backed by strong data quality. Organisations are becoming more data-centric, rather than application- or process-centric, as they increasingly rely on data for decision-making.

Four years ago, McKinsey noted that the majority of the world's largest banks were employing advanced analytics. According to McKinsey, "more than 90% of the top 50 banks around the world are using advanced analytics. Most are having one-off successes but can't scale up. Nonetheless, some leaders are emerging".[2] This article charts Deutsche Bank's progress.

Regulatory drivers

Inefficient technology architecture, multiple sources of data, inconsistent taxonomies, numerous data formats, disparate processes, lack of golden source reference data adoption and insufficient data ownership are common root causes of data quality issues.

Fines from regulators will often have their origins in incorrect and inaccurate reporting – successive acquisitions bring with them incoming data sets that create difficulties when the acquired business becomes part of a larger enterprise. Problems have typically arisen from data truncations, lack of completeness, mapping issues and varying data quality.

The other driving force behind improved data frameworks comes from regulatory requirements such as Payment Services Directive 2 (PSD2),[3] which stipulates that payment service providers must have a robust framework and structure within the data that satisfies new use cases. And to comply with the General Data Protection Regulation,[4] financial services providers have needed a much more granular grasp of specific sets of personal and private information. The other issue is that while good data sets can be used to drive strategic insights for clients, they must be used with awareness and controls for public and private side separation, and for potential conflicts of interest. Artificial intelligence applications and ethical implications must also be controlled.

From a prudential regulatory perspective, the Basel Committee on Banking Supervision's 14 'Principles for effective risk data aggregation and risk reporting' (BCBS 239)[5] is a framework that is actively used to assess firms' approach to data quality. Regulators review firms' approach with an eye on accuracy, completeness and timeliness. These are considered to be 'hard' checks, in that they can be defined by metrics.

Rethinking data management

As the *flow* article 'Tomorrow's technology today'[6] explains, Deutsche Bank created a new Technology, Data and Innovation division in October 2019 to get the technology transformation process under way, with the aim of reducing administration overheads, taking further ownership of processes previously outsourced, and building in-house engineering expertise. Its mission is to "provide and use the right common data, skills and tools for everyone to make decisions and enable innovative solutions that create value for clients and the bank".

What does this look like when done well? Finding the balance between security and stability – coupled with the agility to deliver the analytics and value that help customers – is not easy, but it is something that is shaping the new competitive landscape (see Figure 1 on page 86).

> Data is a living, breathing thing and never perfect, but when it stops someone from doing something, it becomes an issue

David Gleason, Chief Data Officer, Deutsche Bank Corporate Bank

Clients are asking for increased transparency on financial and non-financial metrics and data-driven insights and recommendations, not to mention harmonised information flows across banks. But corporate treasurers from large commercial clients are now looking to their banking partners to be data and technology innovation partners, in addition to providing traditional banking services.

Banking partners including Deutsche Bank are investing in analytics to examine where and how businesses can make efficiencies and run a more streamlined operation. They can highlight, for example, where cost is leaking from a business and where more value can be squeezed from.

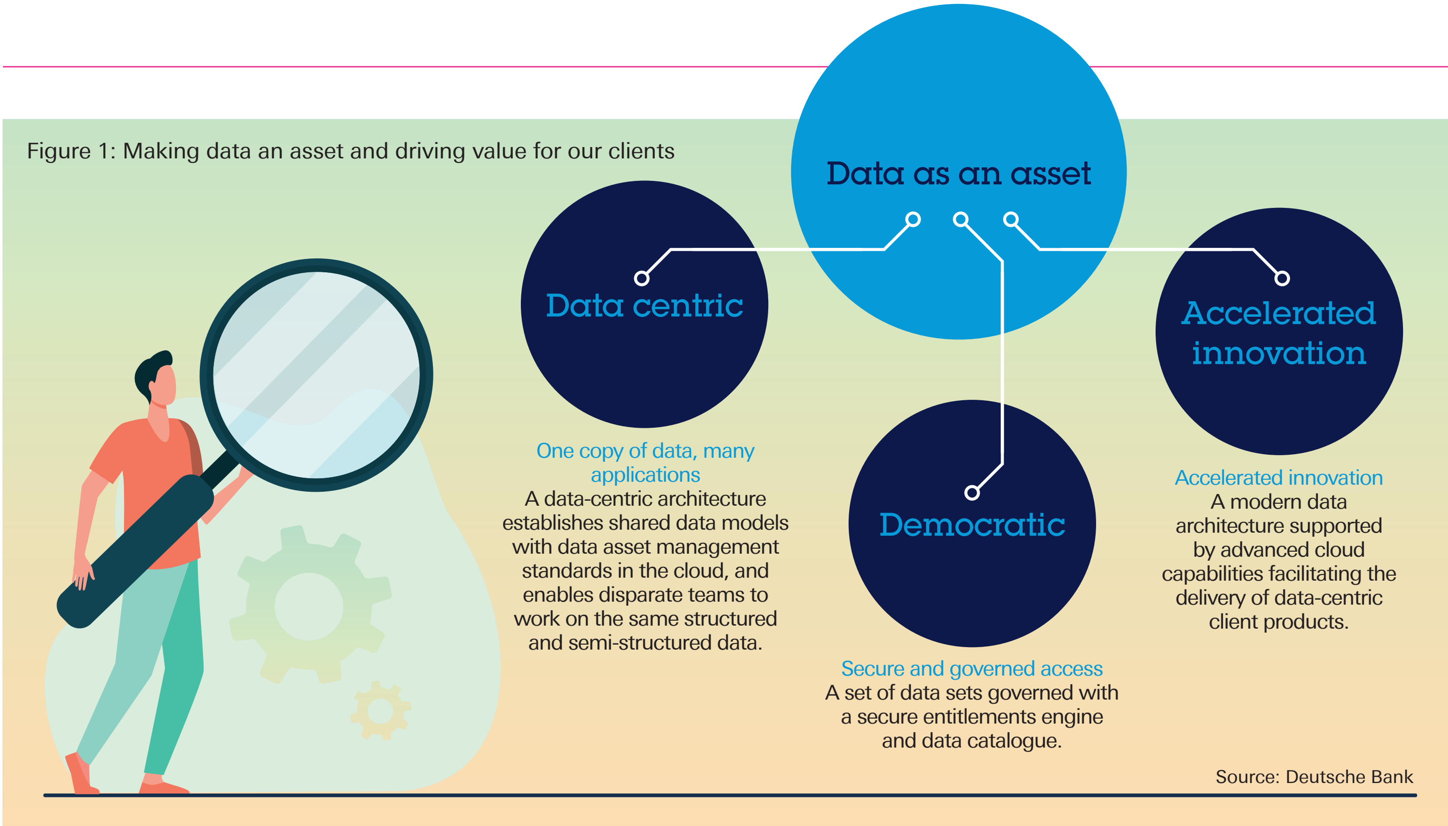
The Chief Data Office works closely with Deutsche Bank Corporate Bank's data office (Deutsche Bank Investment Bank and Deutsche Bank Private Bank also have their own data offices) to ensure that everything touching a client (data, cash, digital platforms and reporting) is secure, intuitive and sustainable. But by having a remit across the bank, the Chief Data Office ensures consistency between the offices in key areas, including establishing principles, policies and standards that need to apply across the enterprise.

Rethinking data

In 2017, the Chief Data Office set about developing a data management strategy, investing in improved data governance and quality management. It sought to transform its data management function from a defensive tool that prevented financial crime and ensured client privacy, to a dynamic development tool that brings new insights and capabilities to clients. This included the following areas of focus:

- Data-focused talent and culture. This involved: improving the group-wide understanding of the critical need for investment; enhancing the visibility and understanding of the bank's data assets; providing a core pool of data analytics, modelling and engineering skills; and developing continuous learning programmes.
- Data architecture and tools. An interim and target schema (as you can't get to where you need to be overnight) that represents the future streamlined data landscape,

Figure 1: Making data an asset and driving value for our clients



Source: Deutsche Bank

including the development of standards, patterns and guidelines to support the migration of data assets to the cloud, as well as a content platform and dashboard that users could easily navigate.

- Data quality. This meant ensuring that the data flowing through the bank was of high quality, with controls in place so that any problems are addressed at source rather than downstream.
- Data lineage and lifecycle management. The ability to see what status the data flows are at for critical applications and reporting outcomes. Is the data 'as built'? Or is it awaiting an update?

90%

of the top 50 banks around the world are using advanced analytics

(McKinsey)

- Data analytics. This involved the establishment of a group-wide data portfolio for a consolidated view on all data-relevant projects (including and beyond governance projects), development of best-in-class privacy tools, right-time analytics and real-time processing capabilities to support priority business-use cases such as payments innovation, transaction monitoring, know your customer and 360 view of the customer, all of which is underpinned by best-practice frameworks and standards.

Corporate Bank implementation

When David Gleason joined Deutsche Bank as the Corporate Bank's Chief Data Officer in September 2018, not only had the Data Quality Platform got under way, but at the same time there was a wider bank data governance overhaul where the Chief Data Office was setting up and driving some of the tooling and processes. "A lot of work was in place around understanding the data requirements of risk, finance, the treasury and anti-financial crime, making sure we knew where to get that data and putting controls around it," he reflects. "My goal coming in was not only to continue and grow that work, but also to introduce the 'offensive' (proactive) side of the equation to that," (see Figure 2 on page 87). This meant taking everything the bank had already been doing around data and process improvement and using this to create better capabilities.

In terms of maintaining data integrity and quality, a focus confined to what Gleason calls "defensive problems" means that "once the fires are out there is less incentive for investment", kicking off a feast and famine cycle.

In this defence-only world, every time a data analyst performs a new analytic capability they have to solve all the problems associated with obtaining, understanding and preparing the data needed for that enquiry. Then another analyst will come along with a different enquiry calling on the same dataset and have to tidy up all over again. Gleason cites the received wisdom that the average data scientist across all industries spends 85% to 89% of their time finding and fixing data, "with only 5% of the time spent on the tasks you are paying them for".[7]

His vision for a balanced offence-defence approach is to harness all the work that goes into "defensive" data governance and make it available for proactive analytics work. This would mean less time is spent solving the same problems in isolation over and over again and the investment is channelled into repositories and architecture that works proactively as well.

Enter the Data Quality Platform and the Data Factory.

The Data Quality Platform

Targets were set to increase data quality transparency and reduce ad-hoc adjustments for critical processes such as credit risk, balance sheet and liquidity management. This was something of a mammoth task given the Corporate Bank's multinational and multidivisional structure where data is captured differently across a number of systems. It was agreed that a successful solution had to (in addition to meeting regulatory requirements):

- Create a positive experience for the Corporate Bank's internal customers;
- Improve data quality to reduce ad-hoc adjustments;
- Deliver significant operational efficiencies;
- Enhance decision-making across financial and non-financial risk; and
- Enrich customer and risk insights that improve new products and services.

The first phase of getting the Data Quality Platform off the ground was to understand the data issues raised by the following areas of the Corporate Bank:

- Businesses (for example Cash Management, Trade Finance and Lending, Securities Services); and
- Finance, Treasury and Risk support functions (consumers of data).

When issues raised by these two groups are resolved, this reduces problems raised by external auditors.

Quality issues discussed included:

- Timeliness – was the data available when needed?;
- Completeness – did it fulfil expectations on comprehensiveness? Did the user receive all the transactions in an 'End of Day' file? Were all the required fields/attributes populated?; and
- Accuracy – how does the data reflect reality? Is the client on a transaction the right client?

> A data-driven culture is about upskilling and making data a core part of everyone's role
>
> Tom Jenkins, Group Head, Data Quality & Governance, Deutsche Bank

Once in place, this phase one technology (DQ Direct) provided the ability to report data issues for further analysis, theming and remediation.

The second phase of the Data Quality Platform was the inclusion of detective controls or 'Data Contracts' that act as a bridge between the Corporate Bank (the data producer) and the consumers (the Group's Treasury, Risk and Finance teams). Launched in late 2019, this proactively used governance tools to identify and help remediate potential quality issues – going back to Gleason's two-pronged vision of securing defensive and proactive data.

The Data Factory

Data lives in the applications where it is first collected and used, generated and utilised by the businesses processing cash and performing transactions. But the secondary usage of the data for analytics and financial reporting is just as important.

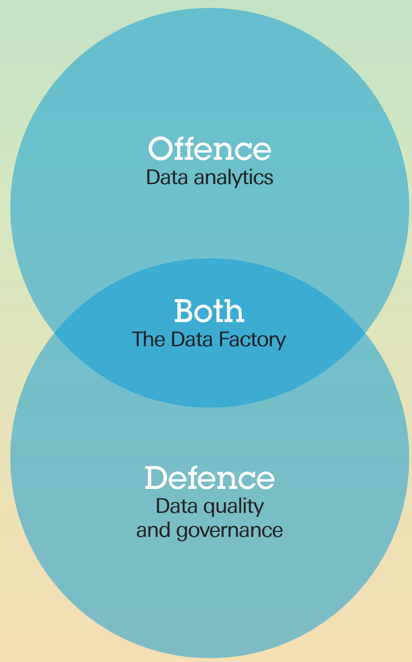
When pulling data from multiple countries and systems, there could be local nuances to the way that data has been captured and stored. Codes used to describe account statuses might not be universally agreed and there could be different business rules on how the data is captured. While this works perfectly in those systems at a local level, the difficulty arises when the data scientist tries to aggregate it globally. At this point, universal definitions are needed – for example, what an active account looks like, or what channel is acceptable for onboarding a client.

The Corporate Bank's Data Factory is a work in progress, configured as a hybrid solution with components housed on the physical Deutsche Bank platform, as well as components built on the public cloud. "This cloud capability is critical. Hosting data in the cloud would allow us to grant our clients access to analytic workspaces where we can collaborate with them," says Gleason.

Towards competitive advantage

"Our strategy is to provide and use the right common data, skills and tools for everyone to make decisions and enable innovative solutions that create value for clients," says Deutsche Bank's Tom Jenkins, Group Head, Data Quality & Governance. We will achieve this, he says, by making it possible to find, access and use data in a secure and governed manner.

Figure 2: Offensive and defensive data strategy



Source: Deutsche Bank

"This is what we mean by 'democratising data'; we make data a core part of everyone's role, not just the data scientists. We ensure the right people in the right roles have access to the right data to carry out their work. This is what will give us the competitive edge, supported by advanced cloud capabilities with our partner Google, heralding a new age of data-centric client products and services."

Cian OMurchu is Head of Data Control Solutions at Deutsche Bank

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Ba(n)king trust

flow's Clarissa Dann reports on how a series of Deutsche Bank cooking events has helped to foster team togetherness amid the homeworking environment

Twenty-five years ago, organisational behaviourist Charles Handy predicted, "Like it or not, the mixture of economics and technology means that more and more of us will be spending time in virtual space…[and] we will have to get accustomed to working with and managing those we do not see."

While nobody would have predicted how the Covid-19 pandemic has made homeworking the new normal for most organisations, the issues of trust and touch raised by Handy in his essay *Trust and the Virtual Organization* (1995) remain. "Trust needs touch," he said. Not anymore, and nor, it would appear, does engagement. "The pandemic has kicked off new engagement models in companies that have enabled their leaders to be role models rather than hierarchy-driven leaders," reflects Christoph Woermann, Deutsche Bank Corporate Bank's Chief Marketing Officer.

Over the past 12 months Woermann, who is one of the bank's Mental Health First Aiders, has seen more activities supporting mental health and wellbeing than in his past 30 years at the bank; a testament to a culture that is supporting the destigmatisation of mental health issues in the financial services sector.

This has much to do with the vision and energy of the Corporate Bank's Global People Strategy Programme Lead, Nasrin Oskui, who notes that "before the pandemic we were all about bringing people together in the same room, and then we had to switch almost overnight to a virtual delivery." This virtual environment does, she adds, have its advantages. For one, it has made it possible to connect people across the world (Covid-19 prompted the relocation of more than 8,000 Corporate Bank employees to homeworking) and support them through these testing times.

Virtual coffee breaks to share challenges about, for example, homeschooling have helped, along with Zoom-based yoga, development programmes, wellbeing webinars, engagement sessions with the leadership team, and cookery events. All of these initiatives have done much to inspire people and bring them closer together as part of a wider working family. "Senior management support has been vital in all our initiatives, and our leaders have cooked and done exercise classes along with everyone else," Oskui says.

Cooking, baking, banking

"I love food and would always try and take a cookery class when travelling," says Andy Ward, who leads the bank's UK/EMEA People Strategy Programme. Irish chef Darryl Breen, an acquaintance of Ward's, has switched his Chef's Compliments catering business over

Hands on: Deutsche Bank's Selasi Gbormittah at the *Great British Bake Off* studio kitchen in 2016

to a virtual structure during the pandemic landscape. Breen, who declares "an ambition to make great food accessible to everyone who cares about cooking in all its forms", has hosted two virtual events for the bank's employees and their family members. The first, held in May 2020, attracted 50 attendees, with an aubergine parmigiana forming the centrepiece. Breen was back in October for Halloween, this time engaging young families with 'scary meatballs'. "The kids all dressed up and stole the show," recalls Ward.

Fast-forward to Christmas 2020. With festive gatherings of 2019 a distant memory and spirits not quite as up-beat as in previous Yuletides, many families could not meet up over the holiday period. The 10-week television cookery show, *The Great British Bake Off* (*GBBO*), had just come to the end of its 11th series. Ward had a brainwave and reached out to Deutsche Bank's very own *GBBO* alumnus Selasi Gbormittah, who has worked for the bank in client services for the past six years.

Born in Ghana, he grew up in a household where food preparation was the family nucleus; fuelling a lasting passion. "In Ghanaian households, we would have a nice kitchen inside, but enjoyed cooking outdoors, so people could sit out together, chat and laugh," recalls Selasi. From an early age he knew he wanted to be a chef. His family moved to the UK when he was a teenager, and although he considered attending a culinary school, in the end he chose an economics and finance course at Nottingham Trent University, later joining Barclays as a graduate trainee in 2009. While at university, he found himself hosting Ghanaian dinner evenings for friends, one of whom was into baking. By 2006, Selasi was regularly watching baking videos, presenting cakes to friends, and baking for fundraisers. Having moved to Deutsche Bank in 2014 (where the fundraising continued), he was encouraged to apply for the *GBBO* intake.

Life was never quite the same again once he was selected from a pool of 20,000 applicants for series 7 in 2016 and reached the semi-finals. Judges Mary Berry (a leading UK cookbook writer) and Paul Hollywood (a top artisan baker) were hugely inspirational, he recalls. "They gave good feedback. I do well when I get 'tough love' and the constructive comments made me perform better. I appreciated the honesty." The show also taught him a great deal about performance. "It was 10 weeks back to back where you started early in the morning, finished late afternoon and repeated procedures all the time. Some of the skills learned in banking – coping under pressure and working to a deadline – were very transferable."

After his semi-final appearance he was on a roll, and when the opportunity came up to take a six-month sabbatical from Deutsche Bank to develop his patisserie skills, he jumped at it, enrolling at the Culinary Arts Academy in Switzerland, a period of study that included an immersion course at the Ritz Escoffier School in Paris. "Banking is for everyone who cares about solving customer problems, but we all benefit from an experience of a world outside the industry," notes Woermann.

On 26 November 2020, Selasi and Ward hosted a virtual 'Festive Baking with Selasi' session for Deutsche Bank employees – the recipe being a particularly delicious iteration of the classic mince pie. Navigating in excess of 50 people in very small Zoom windows while conducting demonstrations of how to chill and roll pastry properly was quite a skill; with puns and chit-chat all forming part of the experience. A number of participants said afterwards that they had enjoyed looking into different kitchens and seeing everyone's families having a good time.

> Senior management support has been vital in all our initiatives, and our leaders have cooked and done exercise classes along with everyone else
>
> Nasrin Oskui, Global People Strategy Programme Lead, Deutsche Bank Corporate Bank

Kitchen community

When Denise Rudolf, Operational Lead for People Strategy in Germany, suggested the idea of a cookbook written by staff for staff, she started an entire movement that now spans joint virtual lunch breaks and dinner-cooking Zoom events. One of these was the 'Kochevent mit Christoph Woermann: Yaki Udon', which took place on 9 February 2021 – again with more than 50 sign-ups. While all in German, the processes could be easily understood, and Selasi (along with the *flow* editorial team) joined in, with Woermann providing helpful translations at tricky points (such as ensuring one's udon noodles were nicely warmed in hot water before adding them to the stir-fry mix).

Cooking is a great leveller. Graduate trainees and executive committee members sporting kitchen aprons and wielding pots and pans at the same virtual event illustrates how Covid-19 has changed management styles. "It's less formal and more engaging, with real diversity in place," reflects Woermann. "We have the right people at the right time in the right places," agrees Selasi.

10 become one

Aladdin Rillo, former Deputy Secretary-General of the ASEAN Economic Community, reflects on his tenure and provides an update on the bloc's Blueprint 2025 objectives

In my 2019 *flow* article 'The Power of 10', I reflected on four Association of Southeast Asian Nations (ASEAN) megatrends in the context of the ASEAN Economic Community (AEC) Blueprint 2025: digitalisation (including e-commerce); the Fourth Industrial Revolution (4IR); sustainability; and innovation.[1] Subsequently, both regional and global economic landscapes have undergone significant change – particularly since the pandemic – so I'd like to share a short progress report.

Consolidated delivery

A resolve to urgently address each trend was reflected in the ASEAN Comprehensive Recovery Framework (ACRF) and Implementation Plan. Adopted in November 2020,[2] its five broad strategies focus on the health system, human security, both intra-ASEAN and broader economic integration, inclusive digital transformation, and a sustainable, resilient future.

A consolidated ASEAN strategy on the 4IR is a priority under Brunei's 2021 ASEAN Chairmanship. It will address ASEAN's cross-pillar work including cybersecurity and technological governance, the digital economy, and digital transformation in society. ASEAN is also leveraging cooperation regionally to accelerate initiatives towards the UN's Sustainable Development Goals (SDGs) and promote the region's sustainable development. At the 2nd ASEAN Forum on SDGs in October 2020, national development planning agencies from member states discussed strengthening cooperation towards achieving the goals by 2030.

> ASEAN must also accelerate broader regional economic integration following the RCEP signing

An ASEAN Innovation Roadmap paves the way for more stakeholder partnerships across the innovation ecosystem and has driven collaboration between research and end-users, with more active participation from start-ups and the private sector, to assist the transfer of technologies from research to commercialisation.

Global ASEAN through FTAs/CEPAs

The Blueprint 2025 identified a 'global ASEAN' as a key component of the AEC. It's being pursued through various free trade and comprehensive economic partnership agreements (FTAs/CEPAs). From what academics described as "trade-light", ASEAN's latest FTA – the Regional Comprehensive Economic Partnership (RCEP) agreement, signed in November 2020 – is more modern and comprehensive; incorporating elements absent from ASEAN's earlier FTAs/CEPAs or – at least, in depth and breadth – the AEC Blueprint 2025.

The RCEP agreement enabled ASEAN to complete negotiations for a mega-trade deal that promises to create the world's biggest FTA. It also extended to issues yet to gain traction at the multilateral level, including e-commerce, investment and competition policy. Extending these talks to Europe is being pursued through the potential revival of ASEAN-EU FTA negotiations, while ASEAN and Canadian officials are considering possible FTA talks.

Digital initiatives

Progress on the Digital Integration Framework 2019–2025 includes launching the ASEAN Customs Transit System in 2020, an online system linking custom offices on transit routes of participating ASEAN member states; adoption of the ASEAN Framework on Digital Data Governance; an MoU by most ASEAN member states permitting information sharing to combat cybersecurity threats; and developing seamless transactions through an ASEAN Payments Policy Framework.

Accelerating inclusive digital transformation was identified as a major ACRF strategy, anticipating digitalisation's key role in ASEAN's post-pandemic recovery. It involves using the digital economy to maintain supply chain connectivity and resilience – including greater use of digital platforms for trade facilitation, such as the ASEAN Single Window and ASEAN Customs Transit System, and advancing efforts in data governance, information and communications technology infrastructure, and promoting e-commerce.

Financing sustainability

Some AEC sectors have considered different aspects of sustainability in financing, energy and agriculture. We can expect conversations around sustainability to gain momentum and become more holistic and coordinated. For example, discussions on sustainable investment will need to link to those on sustainable financing and also potential sectors of interest such as energy, infrastructure, transportation and agriculture. Regionally, ASEAN central banks are finalising Sustainable Banking Principles to provide a common policy framework and develop further guidelines and tools.

Economic integration

ASEAN is conducting a mid-term review of the AEC Blueprint 2025. While intra-ASEAN trade and investment is progressing, trade and investment facilitation efforts need redoubling. ASEAN must also accelerate broader regional economic integration following the RCEP signing, and consider megatrends affecting this, notably digitalisation and sustainability. Finally, we anticipate more cross-pillar conversations between the AEC and the ASEAN Socio-Cultural Community for greater synergy and effectiveness.

Dr Aladdin Rillo served as Deputy Secretary-General of the ASEAN Economic Community from March 2018 to March 2021

Sources

[1] See https://bit.ly/3lrHuQh at corporates.db.com

[2] See https://bit.ly/3qTFQby at asean.org

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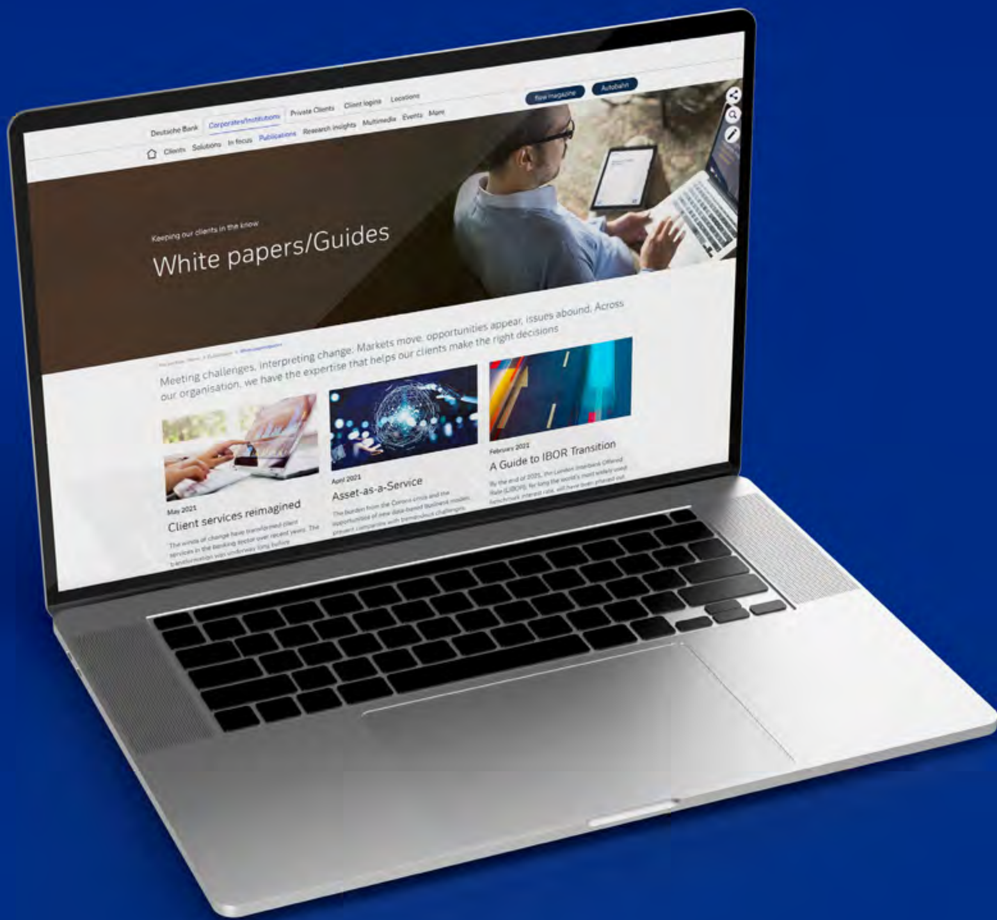

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