

CURRENCY NEWS™

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Inside this edition

Authentix Buys Meta Materials' Authentication Business	1
ATM Network Under Investigation in Belgium	2
Cash Doesn't Crash	2
Royal Mint Goes into Loss as Demand for Circulating Coins Plummetts	3
News in Brief	4
De La Rue Results in Line with Expectations	5
Interim Results – Encouraging Signs	5
Spectra Systems Reports Another Successful Year	5
Around the World – Counterfeiting Update	6
Do You Need a Level 3 Security Feature?	7
Counterfeit Corner	7
Central Banks and Cash Round-Up	8
New York Fed Plans New Cash Centre	9
RBNZ Community Cash Services Trial	10
It's The Little Things That Count!	11
How Regional Recycling Solutions Support Global Success	12
The Birth of Paper Money: the 1,000th Anniversary of the Jiaozi	13
G+D Collection Celebrates 2024 Sporting Events	14
Outline Programme and Awards Announced for The Coin Conference 2024	15
New Industry Glossary Covers Physical and Digital Currency	15
Raise Your Profile with Coin Issuers Worldwide	15
Sustainability Centre Stage in Frankfurt	16
Wide-Ranging Panel Discussions at the 2024 GCF	17
From Cash to Conservation	18
Kazakhstan's 10,000 Tenge Banknote Continues Saka Style Theme	18
Note and Coin News	19
It's a Breeze for Mongolia's New Commemorative Banknote	19
Events	20



Authentix Buys Meta Materials' Authentication Business

Texas-based security solutions provider Authentix has announced the completion of an asset purchase agreement for Nanotech Security Corporation (NCS), the security subsidiary of Meta Materials, which offers solutions for banknote authentication and brand protection. The purchase price for the assets is understood to be in the region of \$10 million.

Meta Materials was a developer of high performance functional materials and nanocomposites. It was founded in 2011 as an 'early growth stage platform company', merging with an oil and gas exploration company in 2021 and listing on NASDAQ. It acquired NCS in 2021 for C\$90 million.

Its other businesses include electro-optics and battery materials and in 2022, the latest year for which it has published figures, it had revenues of \$10 million in 2022 (\$6 million of which came from NCS) and a net loss of \$80 million. The company first flagged concerns about its future viability last year, and in May laid off 80% of its workforce, with the statement that it was looking for buyers.

NSC has pioneered secure OVD (optically variable device) technology for the past decade based on micro-, nano-, and plasmonic structures. With its latest portfolio, it is introducing a new technology platform to the industry – Nano Optics – which offers effects combining multidirectional movement, 3D stereo depth, and multiple colours.

The company has also developed in-house secure foil production to offer products directly to customers. It is active in the banknote sector in particular, but also has customers in brand protection markets.

Its portfolio also includes LumaChrome colour-shifting film for threads and patches, which are used in 30 banknote denominations.

ATM Network Under Investigation in Belgium

The Belgian Competition Authority (BCA) has begun an investigation into the phasing out of hundreds of bank cash machines and their replacement by a new consolidated network of 'neutral' Bancontact-branded ATMs. The investigation focuses on accessibility to the ATMs, and therefore to cash, as well as on the quality of service, notably in terms of waiting time.

In 2020, Batopin, a joint initiative of Belgium's four biggest banks – BNP Paribas Fortis, KBC, ING and Belfius – was launched to consolidate cashpoint provision across Belgium. The new cash hubs are supposed to compensate for the vast reduction in cash dispensers in the country.

The company currently operates in about 400 locations and runs approximately 1,000 ATMs. It is aiming to install its 'Point Cash' hubs in 970 locations across Belgium, providing 2,510 machines across 503 communes by the end of 2025, enabling 95% of Belgians to access a cashpoint within 5km of their home.

And yet, according to Belgian banking federation Febelfin, in 2023 there were only 4,055 ATMs, less than half the number available a decade ago.

Following an initial preliminary analysis of the cash centres, the BCA investigation said the project 'raises concerns for consumers, despite the agreement concluded in March 2023 between the federal government and Febelfin on access to the cash machines [requiring Batopin to install at least one ATM in every Belgian commune], which has significantly improved the situation'.

Concerns relate on the one hand to 'the reduction in the number of ATMs and the additional distance to be travelled to access them, and on the other hand, to the consequences of the increased use of the ATMs in the Batopin network on the quality of service.'

Belgian consumer protection organisations Test-Achats and Financité have welcomed the investigation. They have criticised the Batopin scheme since it was first set up, noting that, in the last five years, Belgium is the European country that has seen the biggest reduction, and that Batopin's consolidated machines have only aggravated this situation.

Cash Doesn't Crash

When system go down, they can go down big-time. As happened recently with the CrowdStrike software update glitch that caused a multitude of Microsoft systems around the world to crash, hitting hospitals and healthcare, transport, hospitality, retailers and payments. Cash, once again, was the fallback option.

Following initial fears of a cyber-attack, it soon transpired that the glitch (if one can call it that) was one of human error – an upgrade that had a cascading effect throughout infrastructure based on Microsoft systems that used CrowdStrike. Given it was more a case of bad engineers and processes than bad actors, it was quite quickly resolved. It was also possibly bad regulations to boot.

In 2009, the European Commission made an agreement with Microsoft that meant it could not make security changes that would have blocked the CrowdStrike update which caused such chaos. The aim was to boost choice for computer users in browsers and other software.

Microsoft has its own equivalent solution to CrowdStrike, Windows Defender, but agreed to allow multiple security providers to install software at what is known as the kernel level.

In 2020, Apple blocked access to the kernel on its Mac computers to improve security and reliability, something Microsoft could not do because of the 2009 agreement. Europe's new Digital Markets Act will require Apple to allow alternative app stores and web browser engines on the iPhone.

So, it almost a given that similar events could happen in the future, particularly since, as IT specialist have warned, software supply chains have long been a serious cybersecurity concern and potential single point of failure.'

Computer problems that bring down systems, and with them the means to make electronic payments, are nothing new. What is different about the CrowdStrike incident is its scale.

And it's a salutary reminder, if one is needed, of the need for resilience, choice and back-up in payments. After all, computers crash, and always will. Cash doesn't, and never will.

Lower coin orders does not signal cashless

In a completely separate development, but one that nevertheless feeds into the debate

on cash versus cashless, the decision by the UK Treasury to suspend orders of UK circulating coins this year (see page 3) has been heralded by many as yet another sign that cash is on the way out.

Whilst it is true that cash usage has fallen significantly in some parts of the world, it is also true too many coins have been produced for far too long – not just in the UK, but generally.

A few years ago, The Royal Mint estimated that 2 billion coins in the UK were 'lost' – down the back of the proverbial sofa. Given a population of c. 67 million, that's a lot of sofas. It is also estimated that 27 billion coins are circulating (or not) in the UK, representing 400 coins per person.

Lack of coins in actual circulation point to a structural problem in the use of coins. Settlement coins, lower value coins only used as change, are effectively single ticket items – used once, and seldom seen again. Typically they account for 50-60% of all production, making them a rather expensive settlement solution.

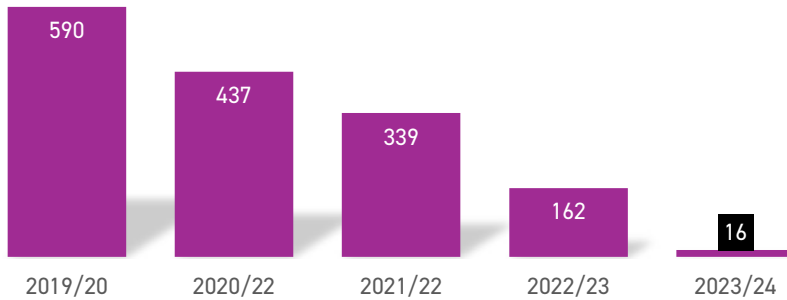
This is hugely inefficient, and the ever-revolving cycle of replacement is a waste in terms of materials and production costs. Something that has become more pertinent in the current focus on sustainability.

While the number of UK cash transactions has fallen from 14% to 12% of all transactions, the actual number has been almost unchanged since 2020. The use of coins correlates directly with the number of transactions. The decision not to procure more coins this year in the UK reflects poor coin management, data on coins being particularly hard to get, and, perhaps, some change in payment behaviour.

Global cash in circulation data shows the growth in the number of banknotes increasing at about 4% per annum. The world isn't going cashless, and lower (or even no) production volumes of coins in the UK and elsewhere should not be seen as a further sign that it is, but more of a necessary and logical local readjustment.

Royal Mint Goes into Loss as Demand for Circulating Coins Plummets

The Royal Mint (TRM) has announced its results for 2023-24, which are in sharp contrast to the success of the previous year.



Production of UK circulating coins 2019/20-2023/24 (source: The Royal Mint).

Sales were down by 28% to £1.35 billion. Currency sales (UK and overseas circulating coins and blanks) were 8.8% lower at £65.6 million, consumer sales 9% lower at £135.8 million and precious metal sales 30.5% lower at £1.15 billion.

TRM's operating result for the year was a loss of £1.3 million compared with a profit of £13.9 million in 2022/23.

By product group, currency incurred an operating loss of £10.8 million (reduced from the £13.1 million loss the previous year).

The business continued to be adversely impacted by the decline in overseas demand and declining market prices. This loss was not unexpected and was behind the decision, announced in April, that the TRM would stop taking orders for overseas coins. In the year, it supplied 1.32 billion coins and blanks to 29 countries, compared with 1.34 billion to 28 countries in 2022/23.

According to TRM, the decision to exit the supply of coins for overseas customer will bring significant changes to the business in the next year as it fulfils outstanding overseas orders. It will retain the capacity and capability to provide UK circulating coins as and when required, it stated, adding that it remains 'firmly committed to making UK coins, which sits at the heart of The Royal Mint'.

But for how long? UK coins fared even worse than overseas coins. During the year TRM issued only 16 million UK coins (all 50p pieces) compared with 162 million coins in 2022/23. In the last five years, UK coin production has declined markedly and consistently.

And for the current year, the figure will be zero, as the UK Treasury is reported to have placed no orders for new coins in what is believed to a historic first.

Moreover, as part of an active review into the denominational mix of UK coinage, officials are understood to be considering a range of scenarios, including the possibility of scrapping 1p and 2p coins altogether.

On a brighter note, TRM created coins during year in honour of the coronation of King Charles III, and also introduced the newly designed set of definitive circulating coins, featuring not only the effigy of the new monarch, but also new designs on the reverse celebrating UK flora and fauna.

US circulating coins decline too

The UK is not alone in seeing demand for coins fall off a cliff. In the US, following two years of COVID-induced coin shortages, coin production fell back to pre-COVID levels in 2022 and 2023 (c. 11.3 billion each year, versus 14.4 billion in 2020 and 2021). For the first six months of 2024, however, coin production has only reached 2.5 billion. If that pace is maintained, the total for the year could be a little as 5 billion coins, the lowest in 15 years.

Back in 2009 and 2010, 3.5 billion and 6.4 billion coins respectively were produced. This was attributed to the influx of coins in the aftermath of the 2008 financial crash and the subsequent credit crunch, with vast numbers of coins being deposited as a reaction to the ensuing economic downturn.

Most recently, it has developed QUANTUM™ stripe, its first fully animated nano-optic banknote security product based on plasmonics, launched last Autumn, which offers dynamic effects at all angles and under all lighting conditions (see CN September 2023).

Authentix provides central banks with Level 3 features and high-speed sensors for authentication and banknote fitness. Its features are on over 34 currency denominations, and over 600 high-speed sensors are used in central bank cash rooms and high-security printworks.

It also runs tax stamp programmes, secures brands in the pharmaceutical and other sectors, and is a leader in fuel integrity programmes.

The company acquired UK-based Security Print Solutions in 2019, Traceless Authentication Group in 2020, Singapore-based brand protection company Strategic IP Information in 2021 and Dutch security printer Royal Joh Enschedé in 2023.

According to Authentix, the agreement to acquire NCS further expands its portfolio in security technologies and will give it, for the first time, a suite of 'physical' security features to complement its taggant, sensor and security print capabilities.

In a statement, Authentix's President and CEO Kevin McKenna said the acquisition expands its presence in the banknote, currency, and brand protection sectors and compliments and leverages its position in other technologies like high-security printing to support 'ongoing growth in our authentication group covering central banks, governments, and commercial brand owners.'

He also commented that 'nano-optic security is the next generation advancement in anticounterfeiting and authentication technology and puts Authentix in a unique position to continue as the industry leader in innovation.'

Authentix will continue to operate NCS's two key Canadian facilities in Burnaby, BC and Thurso, Quebec as technology and manufacturing sites, while certain previous employees of NSC will become employees of Authentix and continue in key roles advancing the technology suite and expanding market share. They include NCS co-founder Clint Landrock as VP of Technology and Alan Newman as Chief Product Officer.

News in Brief

■ Afghanistan Burns Banknotes

In recent weeks, Da Afghanistan Bank (the country's central bank) has incinerated c. 2 billion worn-out Afghani banknotes. In 2023, it collected and incinerated approximately 5.2 billion banknotes.



DAB used the latest occasion to urge the public to take better care of their banknotes, citing excessive use and lack of attention to the maintenance of the notes as the reason for their deterioration.

The condition of the country's banknotes is, however, more to do with there being too few of them staying far too long in circulation, rather than how the public handle them.

After the 2021 re-establishment of the Islamic Emirate of Afghanistan, the nation's foreign assets were frozen and it wasn't until 2022 that funds were released to enable payment for new banknotes to be printed, with the contract going to Polish printer PWPW.

The hiatus meant, however, a significant deterioration in the existing notes before replenishments arrived, compounded by Afghanistan being locked out of the international payments system so is dependent on its worn-out banknotes for all payments.

■ Komori Boosts Sales at DRUPA

Komori Corporation has announced that a number of multiple large-scale orders for banknote production equipment worth approximately JPY 20 billion (US\$130 million).

The orders are from Japan's National Printing Bureau, Security Printing Corporation of Bangladesh, Canadian Bank Note, the National Banknote Printing Plan of Vietnam, South African Bank Note Company, and four others.

The orders were for offset, intaglio and numbering presses and combination multi-process numbering and varnishing presses.

■ Fed's CEP Program Focuses on Latin America

The Federal Reserve Board's US Currency Education Program (CEP) – which is responsible for ensuring global users of US currency have access to education, training and information about Federal Reserve notes – is focusing on Latin America, where a number of countries are either fully dollarised or use the dollar as a parallel currency.

The CEP conducted a first-of-its-kind webinar series in April for professional cash handlers throughout Latin America.

The virtual trainings – free and open to the public – were presented in Spanish in partnership with the US Secret Service. The three sessions ultimately drew more than 450 attendees from across the financial services, tourism, and retail industries.

Further supporting its efforts in Latin America, the CEP will soon release a Spanish version of the Cash Assist mobile app.

Cash Assist includes a 'Denomination Detector', which enables the cameras on Apple or Android phones to identify notes. The app also includes a 'Tilt Check Simulator', which reveals how the security features function, including colour change and other optically variable effects.

The CEP also runs a series of 'Noteworthy' podcasts, examining different aspects of US currency. The second podcast series is currently underway.

More information can be found at www.uscurrency.gov.

■ NextGen Magnetic Scanner

MagVision has announced the launch of the second generation of its MagScan Magnetic Feature Scanner for use within the security print industry and magnetic ink manufacturers to analyse magnetics for quality and monitoring consistency.

The MagScan scans and records the magnetic signal from documents containing hard magnetic material. Magnetic content typically consists of magnetic ink, metallic strips or the security thread.

MagScan captures magnetic features using a traversing inductive head together with a pre-magnetising magnet to ensure that the material is fully magnetised before passing over the detection head. The detection head traverses at a constant speed, capturing the magnetic signal.

The scanner can capture signals in direct contact, or through covering material. It will also work with material straight from a printing press, which may not be fully dried. The magnetic signal is sampled at 40 samples per mm to give a high-resolution signal. The sampled signal is then passed

to the PC application for display, analysis and storage. The signals can be compared against pre-defined limits, to give pass/fail indication, or against previously stored reference signals.

■ FNMT Builds New Data Centre

Spanish security printer and papermaker FNMT has formally opened its new technology centre on the site of its papermaking facility at Burgos.

For the past 60 years, Burgos has focused on banknote paper production, and in recent years has undergone a major upgrade at a cost of €60 million. The new technology centre, built with sustainability and energy efficiency at its heart at a cost of €6 million, sits within the ECB security-approved site and will be the base for the provision of digital services for the Spanish government and citizens.

FNMT is the main issuing entity in Spain for digital certificates, with more than 15 million active to date. The new centre will consolidate the development of digital services, including through a cloud service for use both by FNMT and third parties, and will host a 300m² data processing centre and an access area for visits and presentations.

■ Covestro Enters Formal Negotiations with Adnoc

Covestro – a leading polymer materials and chemicals producer – has announced that it has entered into formal negotiations with the Abu Dhabi National Oil Company (Adnoc) for a potential transaction value of nearly €14.4 billion. Discussions first began last year, but have now moved to the next stage following an increase in Adnoc's offer from €60 to €62 per share.

Covestro (formerly known as BayerMaterialScience) is the world's biggest producer of bisphenol, used in many consumer products to enhance their strength, and polycarbonates.

The company offers polycarbonate film solutions for clear window applications in passports and ID documents, Bayfol® HX photopolymer film for holograms, and has recently unveiled a new polymer material for banknotes (see CN May 2024). The thermoplastic polyurethane is created through extrusion, during which the addition of white pigments (or, potentially, other colours) takes place, as opposed to opacification, the route taken for other polymer substrates. No surface printing is required, and because only 3-4% of the composition is made up of coatings (versus the 20% or so of conventional polymer substrates), Covestro says its product can be better recycled.

The new substrate is set to be formally launched later this year.

De La Rue Results in Line with Expectations

De La Rue has released a comprehensive set of full year results for FY2023/24. These results were in line with market expectations and its previous trading update.

Group revenue of £310.3 million was 11.3% lower the previous year, largely impaired by a banknote industry downturn, which reduced the Currency division's revenue by 18.7% to £207.1 million. The Authentication division achieved sales of £103.2 million, breaking the £100 million revenue milestone for the first time.

De La Rue's positive adjusted operating profit (non-IFRS) of £21 million was in line with expectations and underpinned by both divisions. The overall IFRS profit of £5.8 million demonstrated a significant improvement vs FY23 (when it was – £20.3 million). This, says De La Rue, reflects its transformational journey to build a more resilient business, with many legacy issues now removed and FY24 incurring far fewer exceptional costs than FY23.

The company also highlighted that the continued strong pickup in orders seen at the interims were already flowing through to its P&L. The order book at the end of March stood at £239 million (compared with £136.8 million at the end of FY22/23) and had increased to £241.4 million by the end of June. The

company's win rate remains high and Q1 financial performance for FY25 has exceeded that of FY24.

De La Rue announced recently that the sale of one of both divisions could be on the cards (see CN May 2024), and it has confirmed that expressions of interest remain for both.

Ruth Euling, Managing Director of Currency said: 'the aspects that make De La Rue special are also the aspects that have led to ongoing expressions of interest – we are confident that the characteristics of De La Rue that give so many central banks the desire to partner with us, will remain going forward. Our commitment to currency issuing authorities remains unwavering and our customers remain a key factor when evaluating strategic options.'

CEO, Clive Vacher, concluded the results announcement by stating that 'as a result of the transformation of the company over the past four years, De La Rue's divisions occupy leadership positions in their respective industries and are well positioned to take advantage of the growth that is evident in their market segments.'

Interim Results – Encouraging Signs

This month we report on the interim results for two leaders in the currency sector – Orell Füssli Security Printing and Prosegur Cash.

Revenues for the Orell Füssli group in the traditionally weaker first half of 2024 were 2% higher than the first half of 2023 at CHF 107.1 million. Operating profit was down by 15% to CHF 4.6 million.

Sales for the Security Printing division were down by 3.1% to CHF 38 million, and EBIT by 10% to CHF 5.5 million. Increased costs and the product mix were the reasons given.

But the company also noted significant successes in the first half, with contracts coming from customers in the 'global south', some of several years' duration, and central banks moving from ordering at short notice to a long-term approach, which it deemed an encouraging sign.

The signs were also good in its Industrial Systems division, with Zeiser winning several contracts in banknote serialisation with its order backlog noted as pleasingly high.

In this division, revenue also fell by 3% to CHF 11.4 million, and EBIT was down 25% to CHF 0.6 million.

Prosegur Cash operates in Europe, Latin America and Rest of the World (AOA). The services provided are Transport (49% of revenues), Cash Management (19%) and Transformation Products (32%). The latter includes Added Value Outsourcing Services (AVOS) for banks such as outsourcing of teller services, multi-agency services and cheque processing, along with correspondent banking activities and foreign exchange and currency services.

Revenue for the first half was 1.9% higher than the first half of 2023, at €998.1 million. Sales in Latin America were comparable year-on-year at €619 million, 12.5% higher at €321 million in Europe, but 21% lower at €57.7 million in AOA.

Operating profit, adjusted EBITA, decreased by 11.65% to €113 million and the adjusted EBITA margin from 13.2% to 11.3%. The adjusted EBITDA margins in Latin America, Europe and AOA were 15.9%, 4.7% and -0.7% respectively, compared with 19.2%, 3.5% and 0% in the first half of 2023.

Spectra Systems Reports Another Successful Year

Spectra Systems' annual report, released at the end of June, showed revenues for 2023 increased by 3.4% to \$20.28 million and operating profit, EDITDA (before stock compensation expenses) by 3.9% to \$8.39 million.

The Physical and Software Authentications Systems business achieved similar revenues as the previous year, of \$18.41 million, driven by high demand for covert materials and price increases for supply chain mitigation, strong sales of optical materials and continuing funding for sensor development.

The Secure Transactions Group (software) generated sales of \$1.67 million and adjusted EBITDA of \$132,000 (2022 = \$72,000) on revenue of \$1.67 million (2022 = \$1.463 million). This was in line with expectations.

Sales in the Security Printing business, from the acquisition of Cartor Security Printers (CSP) in December 2023, generated revenue of \$164,000 during the 10-day period ended 31 December 2023. In the year to September 2023, CSP's sales were £16.18 million and EBITDA £2.25 million.

The acquisition of Cartor is described by Spectra as 'transformative' as it brings in security printing capabilities, including many optical materials opportunities through its existing sales pipelines, as well as allowing Spectra to offer its polymer substrate in competition with the two largest banknote polymer substrate suppliers.

New sensor contract

Further to the publication of the annual report, Spectra Systems announced a new \$37.9 million sensor manufacturing contract for an existing central bank customer. A second tranche of consideration of \$1.7 million is expected later this year on signature of the related manufacturing contract. This will bring the sensor manufacturing revenues from the new contract to a total of \$39.6 million.

This manufacturing contract margin is expected to result in profits over its term that are significantly higher than previously estimated. The Board expects to execute a service agreement relating to the new sensors with this customer in Q1 of 2025.

Around the World – Counterfeiting Update

In this periodic series summarising counterfeit currency around the world, we focus on the latest news from Hong Kong, Libya, Scotland and Ukraine.

■ Fake Banknotes Used in Cryptocurrency Sting

In Hong Kong, police have busted a crypto fraud ring that was using counterfeit banknotes as part of the scam. The latest arrests bring to 14 the total number of people detained in similar cases since last October, with losses amounting to HK\$14 million.

The suspects were arrested on charges of conspiracy charges to defraud, possession, and the use of 5,000 counterfeit banknotes. The masterminds behind the scheme sourced the counterfeit notes and identified potential victims online, posing as reputable cryptocurrency investors. They offered enticing deals above the cryptocurrency market rate, drawing unsuspecting individuals to the bogus cryptocurrency exchange shops they had set up.

Once lured into the shops, their victims were shown stacks of counterfeit HK\$1,000 banknotes, only the top and bottom of which were authentic. This display was intended to convince them of the transaction’s legitimacy.

After gaining their trust, the fraudsters persuaded the victims to finalise online transactions. Upon the cryptocurrency transfer, the suspects swiftly moved the assets out of the victims’ accounts, renegeing on the payment.

The Hong Kong police have highlighted the risk posed to young residents in particular during the summer holidays, warning them against the temptation of quick money through illegal means. As well as stressing the importance of verifying the authenticity of any banknotes, the counterfeiting of which carries a maximum sentence of 14 years in prison.

■ Counterfeits Surge in Scotland

Nearly 172,000 counterfeit notes were seized by Scottish banks in 2023, most of them £20 or £50 notes, with the value of the withdrawn cash amounting to £5.1 million, up from £1.3 million 10 years ago.

Within the UK, three of Scotland’s commercial banks have the right to issue banknotes (and another three in Northern Ireland). They are the Bank of Scotland, the Royal Bank of Scotland, and Clydesdale Bank. All are members of the Association of Commercial Banknote Issuers (ACBI), which publishes annual counterfeit reports.

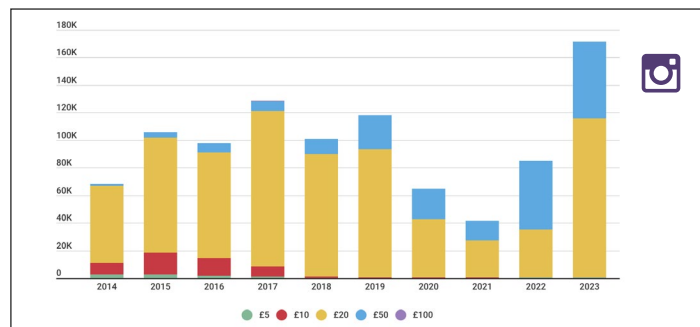
All three issuers replaced their paper banknote series with polymer notes from 2016 onwards. The paper £5 and £10 notes were withdrawn in 2018, and the £20 and £50 banknotes in 2022 (albeit they can still be exchanged at the banks themselves). According to the ACBI, the counterfeit figures relate to both paper and polymer notes, although the withdrawal of the former implies that the counterfeits are now largely of the latter.

It is not known whether any of the three issuers’ banknotes are particularly vulnerable. All have different designs, but the security features are common throughout. For the £20 and £50 notes, the main feature is in intricate window the full height of the note with diffractive elements.

The ACBI has sought to reassure the public, stating that ‘only a small fraction, typically less than 0.0473% of Scottish banknotes are counterfeit, that is approximately 473 for every 1 million genuine banknotes’.

Considering that the counterfeit ratio has been falling around the world – and now numbers just 16ppm for the euro, for example, 25ppm for Bank of England notes and 57 ppm for the notes from the three issuing banks in Northern Ireland – that isn’t much of a reassurance.

The Federation of Small Businesses (FSB) has warned that the ‘high number of counterfeit notes in circulation is a clear risk to small businesses’, while retail industry leaders said the cost will ultimately be passed on to customers.



Number and value of counterfeit Scottish bank notes 2014-2023 (© ACBI).

■ Large Increase from a Low Base in Ukraine

The National Bank of Ukraine reported an increase of 62% in the number of counterfeit hryvnias and foreign currency detected in the first half of 2024.

Even so, the increase has resulted in a ratio of just 3.4 ppm (compared with 2.1 for the whole of 2023).

90% of the counterfeits were in two denominations; the 2006 version of the 500 hryvnias and the 2007 version of the 200 hryvnias (both of which have been superseded by a new series, but remain in circulation).

In addition, 1,200 counterfeit foreign currencies were withdrawn from circulation, 95% of which were US dollars.

According to the NBU, the ‘sources of growth of counterfeiting of the hryvnias and currency have not yet been discovered’.

■ Libya Counterfeits Devalue Currency

A report by Reuters has said the recent devaluation of the dinar in Libya is the result of a deluge of illicit banknotes exchanged for real US dollars. The banknotes, branded counterfeit by the Central Bank of Libya (CBL), were reportedly printed in Russia and used to finance mercenary activities in the region and the Sahel.

The CBL was divided into western and eastern branches in 2014, after a parallel administration emerged in the east when the country fractured following a civil war. The recognised central bank is located in Tripoli, and the breakaway bank in Benghazi. Both issued their own versions of the dinar, with Russia providing the banknotes for the eastern branch up until 2020, when a peace plan was agreed. As part of this, last year the CBL was reinstated as a unified sovereign institution and the Russian printed notes accepted as legal tender.

Most of the unofficial currency in Libya is in 50 dinar notes. The CBL issued a statement earlier this year identifying four kinds of 50 dinar note: those officially printed for the central bank, those printed in the past by Goznak for the eastern CBL branch, and two new versions that it called counterfeit. One of those is reported to be of higher quality and imported from Russia. The other less sophisticated version appears to have been printed inside Libya, according to local sources.

To counter the impact of the counterfeits, the CBL announced in April that it would withdraw all 50 dinar notes from circulation by the end of August.

Do You Need a Level 3 Security Feature?

■ **By Nikki Strickland, Group Marketing & Strategy Director, De La Rue**

The many security features integrated into a banknote make them virtually impossible to counterfeit. These features instil confidence in the currency and enable various users to authenticate genuine banknotes throughout the entire cash cycle.



Role of Level 1 and 2 features

Most banknote denominations contain level 1 and level 2 security features. Level 1 features provide easy and intuitive visual authentication by members of the public, whereas level 2 features are designed for professionals and machines working in retailers, banks, and cash-handling businesses.

Level 1 and level 2 security features are sometimes sufficient by themselves. They deter criminal activity by making it expensive and difficult to simulate notes convincingly, whilst helping participants in the cash cycle spot the fake notes.

Issuing authorities that experience a low risk of a sophisticated counterfeit attack may decide that level 3 features are unnecessary. As with every banknote specification decision, the most appropriate solution for one central bank may not be the most appropriate solution for another.

Role of Level 3 features

Level 3 security features are most appropriate when the counterfeiting risks go beyond normal levels, for example, for currencies used internationally, where there are high levels of organised crime, or for countries at risk from state-sponsored counterfeits. They serve as a crucial last line of defence in maintaining the integrity of a currency.

High-quality counterfeit notes may be accepted as genuine notes in the cash cycle, and this can undermine confidence in the currency, with major ramifications for the efficiency of the overall payment system and the national economy.

Level 3 features enable only the issuing authority to quickly authenticate or remove notes from circulation using the central bank high-speed sorting machines. These level 3 features don't interact with the commercial parts of the cash cycle and they don't impact the look or feel of the banknote.

Selecting the right type of Level 3 feature

When selecting a level 3 security feature there are three main recommendations:

1. Select a 'true' level 3 security feature.

The secrecy surrounding level 3 security features is fundamentally important because it means that criminals cannot reverse engineer the banknote – there is no way of knowing what to try and simulate or where to source raw materials.

This secrecy is protected by ensuring the level 3 feature is reserved exclusively for currency-issuing authorities. Not all level 3 features are true level 3 features.

2. Ensure the feature will last until the very end of banknote lifetime (including to the point of destruction or recycling).

Paper banknotes typically reach the end of their useful life via soiling and so can support a range of printed and embedded options. For polymer substrate, where banknotes typically fail via ink wear, embedding the level 3 security feature into the substrate is required to ensure the banknotes are fully protected until the end of their useful life.

3. The sensors used to detect level 3 features can support your mixed series of banknotes.

As central banks increasingly transition to polymer substrate they may find themselves requiring level 3 features for their paper and polymer denominations. With the right partners and level 3 security feature it is possible to achieve this.

For central banks on polymer or mixed denominational series, ASSURE™ and its associated sensors are a proven solution that meets all three recommendations.

If you're thinking about whether a level 3 security feature is right for you, please contact: currency@delarue.com.

Counterfeit Corner

■ **By Kerre Corbin, Currency Counterfeit Specialist**

Counterfeit deterrence requires a three-pronged approach.

- Banknote design security
- Public education
- Law enforcement

These three attributes are vital in the deterrence of counterfeiting. If any of the three are deficient, it allows an opportunity for the counterfeiter to pass their fake notes into circulation.

Most of the time, we only think about increasing the security within a banknote design, whether this be in the substrate, inks or applied security features, as the primary way to deter counterfeiters. Now don't get me wrong: this is an important aspect in deterring counterfeiters from creating a counterfeit that comes close to replicating the genuine banknote. However, you can have the best security built into the banknote, but if the public doesn't know what to look for, the counterfeiter could pass anything resembling a banknote.

This makes public education a crucial component for central banks to consider, especially when a new design is being released into circulation. A simple, memorable message is usually the best approach. Creating banknotes with intuitive security features will help make it easier for a cash user to differentiate between a genuine and a counterfeit.

Unfortunately, the law enforcement aspect is one that is usually neglected, by underfunding counterfeit investigations and low sentencing rates when counterfeiters do get caught. Most counterfeiters have an extremely low chance of being caught and if they are, the punishment they receive is negligible. A society that pursues every counterfeiting case and obtains convictions with appropriate punishments will help deter many counterfeiters from practicing their craft.

Counterfeiters nowadays know that they only need to simulate a few security features to fool the public into accepting the fake, and if they are caught, they can just say 'I didn't know it was counterfeit' and get away with it!

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Central Banks and Cash Round-Up

In this periodic series of articles covering cash information in central bank annual reports, we turn our attention this month to Canada, the ECCB, India, Ireland, and Spain.

■ Bank of Canada (BoC)

Payment surveys: the BoC's Methods of Payment Survey 2022 showed that many Canadians still use cash and that 80% of consumers have no plans to go cashless. Meanwhile, cash acceptance remains almost universal across businesses in Canada. The 2023 Merchant Acceptance Survey results revealed that 96% of small and medium-sized businesses accept cash.

Counterfeiting: the BoC conducts the Bank Note Confidence Survey twice a year to assess public confidence in the authenticity of banknotes. In 2023, roughly 96% of Canadians expressed confidence that the banknotes they use are real. This aligns with a low counterfeiting rate of 7 parts per million (ppm) – well below the BoC's benchmark of 30 ppm.

Circulation: banknotes in circulation represented approximately 37% (29% as of 31 December 2022) of the BoC's total liabilities. The number of banknotes (roughly 3 billion) in circulation remained almost unchanged from their level at the end of 2022.

Sustainability: the BoC launched a project to identify opportunities for reducing greenhouse gas emissions, water consumption, and waste from producing, distributing, and recycling banknotes. This work aligns with its climate change strategy and the Canadian government's plan to reduce greenhouse gas emissions.

Digital currency: as part of its ongoing consultation on a potential Digital Canadian Dollar, the BoC invited Canadians to participate in a survey to share their views and perspectives. The consultation generated almost 90,000 responses. Canadians said they trust the safety of cash. Based on that, the BoC will continue to research the security and technologies that could support a digital dollar, including how to provide one that could be used offline.

Future plans: looking ahead, the BoC will continue to work on sustainable measures, provide Canadians with secure banknotes, monitor Canadian payment preferences, and research the future of cash.

At the same time, it has begun work on a new design for the \$20 banknote and will continue to explore the possibility of a Digital Canadian Dollar.

■ Reserve Bank of India (RBI)

Throughout 2023/24, the RBI maintained its commitment to ensuring a sufficient supply of clean banknotes and coins. A comprehensive survey was conducted to understand the country's usage and preference for banknotes, coins, and digital payment methods.

The RBI also initiated a project to modernise the country's currency management infrastructure and is continuing on its quest to indigenise all aspects of currency production, as part of the country's 'Make in India' campaign.

Cash in circulation: the value and volume of banknotes in circulation increased by 3.9% and 7.8% respectively, compared with an increase of 7.8% and 4.4% during 2022/23. The share of ₹500 banknotes in value terms of the total surged to 86.5% as of 31 March 2024, from 60.8% in March 2020 to 77.1% in March 2023.

The increase coincided with a declining share of the ₹2,000 banknote denomination, which was 0.2% at the end of the financial year. The ₹2,000 denomination was introduced in November 2016 following the withdrawal of the ₹500 and ₹1,000 banknotes in circulation at that time. The RBI stopped printing the ₹2,000 in 2018/19, and it has now been demonetised. By the end of March 2024, 97.7% had been returned.

The value and volume of coins in circulation increased by 82.5% and 68%, respectively, during 2023/24. The scheme of mobile coin vans (MCVs) operating in select states was extended across the country to enhance coin distribution. Additionally, the scope of services has been broadened to facilitate the exchange of unfit lower denomination notes. These MCVs distribute coins and banknotes to the public, particularly in semi-urban, rural, and remote areas.

Counterfeiting: 222,639 counterfeits were detected in 2023/24, compared with 225,769 in 2022/23 and 230,971 in 2021/23. There was a noticeable increase in counterfeit ₹2,000 notes from the inflow of these notes resulting from their demonetisation.

Production costs: expenditure on banknote printing during 2023/24 was ₹51 billion, compared to ₹46.82 billion the previous year.

Operations: during the year, orders were

placed for new shredding and briquetting systems for 21 regional offices. Delivery and installation will commence in the first quarter of 2024/25 and will be completed within the next two years.

To bring uniformity in note sorting across banks, the RBI published the 'Note Sorting Machines (NSMs) specification IS 18663: 2024' standard this March.

Surveys: a payment survey on the usage of coins and banknotes covered 22,725 respondents, comprising 11,474 consumers and 11,251 merchants across 20 states/union territories.

According to the survey, 56.7% of consumers and two-thirds of merchant respondents required coins predominantly for tendering change while shopping, travelling, and making donations. This number jumped to 80% for consumer use of banknotes, and 90% with regard to merchant use for business transactions, travelling, and exigencies.

From a usage point of view, the survey indicated that, while cash remained prevalent, digital modes of payment were gaining traction among the public.

A series of survey on public perception of the quality of banknotes was also carried out in various regions.

Security features: the RBI stated that it is actively taking forward the introduction of new/ upgraded security features for banknotes. At the behest of RBI, BRBNMPL established a Currency Research and Development Centre (CRDC) at its Mysore campus to conduct adversarial analysis and research into features.

Future plans: the RBI will focus on modernising the currency management infrastructure, replacing existing SBS machines, exploring more sustainable and eco-friendly disposal of currency note briquettes, taking measures to improve the delivery of banknotes/coins to members of the public, and implementing standards for NSMs across the country.

■ Eastern Caribbean Central Bank (ECCB)

Currency in circulation: as of 31 March 2024, the value of the currency in circulation continued its trajectory upwards, increasing by 5.42% to \$1.57 billion. Banknotes accounted for 91.43%.

Commemorative note: 2023 was an important year for ECCB as it celebrated its 40th anniversary. Notable in the lineup of the anniversary activities was the issue of a \$2 commemorative banknote, which won three awards, from the International Association of Currency Affairs (IACA), the International Bank Note Society (IBNS), and the Reconnaissance HSP regional banknote award – an unprecedented hat-trick!

■ Central Bank of Ireland (CBI)

According to the Central Bank of Ireland's annual report for 2023, strategically, its main effort is its contribution to the National Payment Strategy along with the domestic access to cash legislative framework.

Cash in circulation: the number of banknotes issued fell 15% to 169 million, with a value of €5.28 billion. 2022 had seen a post-pandemic uplift and this is seen as a correction. The number of notes returned to the central bank fell 8%. The value of banknotes in circulation at the end of 2023 increased by 4.1% over the previous year to €48.6 billion.

The central bank acts as an agent for the Ministry of Finance concerning coins. The number of coins issued fell by 38% to 47 million with a value of €24 million. The number returned increased by 27% to 42 million. No new 1 and 2 cent coins were issued as the use of these is falling following the voluntary rounding scheme adopted in 2015.

Production costs: the costs of banknote procurement were 27% lower at €4.3 million compared with 2022, and the cost of raw materials for coins fell from €1.8 million to €200,000. The reduction in banknote costs was due to a reduced banknote allocation and a lower unit purchase cost. Coin materials decreased as coin blanks were not purchased in 2023. Overhead costs attributable to the provision and issuance of coin were €2.9 million.

Operations: following a strategic review of its cash centre operations, the CBI's cash centre at Sandyford is to be replaced by a new cash centre in the greater Dublin area, but this is not expected to open for seven years.

Access to cash: during 2023, the CBI provided input into two initiatives - the development of the government's National Payments Strategy and the draft domestic Access to Cash legislative framework. It continues to be actively involved in these two bodies of policy framework development, which it says represent important steps forward in ensuring availability and choice for consumers and small businesses into the future.

■ Banco de España (BdE)

Banknotes: in 2023, BdE delivered 2.52 billion banknotes to credit institutions worth €76.78 billion, representing a decrease in value of 3.2% compared to 2022 and 17.8% compared to 2019. It withdrew more banknotes from circulation than the previous year - 2.9 billion, worth €90.14 billion, 1.6% more than in the previous period and 13.5% less than in 2019.

The difference between banknotes put into circulation and those withdrawn resulted in a negative net issuance of 379 million banknotes in 2023, equivalent to €13.35 billion, accentuating the negative trend observed historically, except for the period affected by the COVID-19 pandemic. This is due to the significance of the tourism sector in Spain and the flow of cash from tourists' countries of origin.

The banknotes most in demand in 2023 were those issued by ATMs: the €50 banknote, with 42.9% of the total, followed by the €20 note, with 28.9%.

Coins: the entry into circulation of coins decreased in 2023 compared to 2022. BdE put 765.4 million coins into circulation, for an amount of €186.8 million, a figure 9.4% lower than in the previous period and 26.6% lower than in 2019 (in million coins).

Net issuance was concentrated in the smaller coin denominations (1, 2 and 5 cents), which accounted for 61.4% of all coins issued. The denomination most in demand was the €1 (13.8% of the total), in contrast to the Eurosystem area in general, where the €2 coin is the preferred denomination.

83.8 million coins worth €51.2 million were withdrawn from circulation, 63.1% higher than in 2022 in volume terms. The coins withdrawn from circulation were mainly €2, €1 and 50 euro cent coins, which together represented 47.8% of the total volume. The difference between the coins delivered and those collected, ie. the resulting net issue, was 681.9 million pieces, equivalent to €135.6 million. As a result, in 2023 the net issuance of coins in terms of volume of pieces and value in euros was 14% and 21% lower, respectively, than in 2022.

Counterfeiting: in 2023, the total number of counterfeit euro banknotes withdrawn from circulation in Spain was 59,196 units, 1% more than in 2022, with an increase in traditional types of counterfeiting. A further 84,143 counterfeit banknotes were seized before they entered circulation. Spain ranked third in 2023 in the detection of counterfeit euro banknotes withdrawn from circulation.

The total number of counterfeit coins withdrawn from circulation was 32,969 pieces, 25% more than in 2022. The main counterfeit coin continues to be the €2 euro coin, which accounted for 93% of the total.

Production: for 2023, the ECB estimated that 3.14 billion banknotes were needed, and BdE was required to produce its quota according to its capital key of only one denomination – the €50. BdE placed the order with IMBISA, its high security in-house printing works.

New York Fed Plans New Cash Centre

The Federal Reserve Bank of New York (FRBNY) has announced that it plans to transition its cash operations in East Rutherford, New Jersey (NJ) to a new next-generation cash services centre within the Second District.

This new centre will support the New York cash processing services and operations, including the circulation of US notes and coins within the Second District and abroad. The Second District includes New York state, the 12 northern counties of New Jersey, Connecticut, Puerto Rico and the US Virgin Islands and, although it serves a geographically small area compared with those of other 11 Federal Reserve Banks, the FRBNY is the largest in terms of assets and volume of activity.

The FRBNY's unique responsibilities include acting as the primary contact with foreign central banks and undertaking the distribution of US currency overseas (60% of all US currency circulates abroad).

This includes the Foreign Bank International Cash Services (FBICS) program, which it runs on behalf of the Fed. The program, introduced in 2018, permits foreign banks and/or their parents of affiliates (wholesale banknote entities) that do not have a presence in the US to open limited purpose accounts with the FRBNY and use those accounts to access Federal Reserve Bank currency services, such as the ability to place orders on a same-day basis, to have currency orders fulfilled solely with new banknotes (as opposed to previously circulated banknotes), to deposit US currency and to receive expedited processing of large-denomination banknotes deposited with the FRBNY.

The FRBNY also runs the Federal Reserve's Extended Custodial Inventory (ECI) program. Under this, it contracts with overseas deposit institutions (DIs) to maintain inventories of FRBNY-owned banknotes in the DIs' vaults located in strategic distribution centres outside of the US. The ECI program is designed to help satisfy wholesale demand for US banknotes in multiple jurisdictions or regions and facilitate the introduction of new design banknotes, the repatriation of older-design banknotes, and the circulation of fit banknotes overseas.

The FRBNY has stated that the new centre will enable it to facilitate more efficient cash processing and maintain a high level of resiliency. The building will measure around 350,000 sq ft over three stories. A site in Warren, NJ, has been selected, and the FRBNY is in the process of obtaining the relevant local approvals.

RBNZ Community Cash Services Trial

Last month, we celebrated the 25th anniversary of the introduction of polymer banknotes in New Zealand. But all is not well with cash ‘down under’, with usage in rapid decline and the cash infrastructure in decline as well – both in response to falling demand and also a driver for it.

New Zealand is by no means alone in this conundrum. Neighbouring Australia is in a similar place, as are several other countries around the world. The difference is that the Reserve Bank of New Zealand (RBNZ) is taking action. In 2021 it carried out a public consultation on the future of money, which showed overwhelming support for cash. It then published a detailed report with proposals on redesigning the cash cycle.

The RBNZ is now about to implement a key proposal of that report, as explained by Ian Woolford, Head of Money and Cash, at the recent Cash Sustainability Forum, in his presentation on the country’s impending community cash services trial.

New Zealand is a big country with a small population, meaning delivering cash services is a challenge. If laid over Europe, it would stretch from Copenhagen to Marseille, but with a population of only 5.1 million people.

Cash usage has been in decline for some time. As a proportion of household payments, cash payments have fallen from about 32% in 2007 to 7% in 2023. Despite that, when surveyed the population overwhelmingly supports cash. A ‘say-do’ gap clearly exists. 6% of the population is entirely reliant on cash. A key point is that isn’t properly appreciated, is that people become vulnerable at different time in their lives.

Supply problem

While the decline in the number of bank branches started a long time ago, it has accelerated sharply since 2015, as the chart below shows (NB these reductions don’t capture reduced branch opening hours).

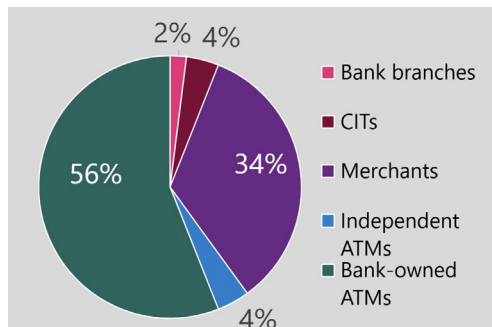
BANK BRANCHES	2000	2015	2022	2000-2022
Upper North Island	693	645	456	-34%
Lower North Island	273	210	150	-45%
South Island	279	264	189	-32%

The number of ATMs supplied by banks has also fallen. In 2011 there were about 2,500 bank ATMs, and this number persisted at that level until 2017, declined slightly to 2019 and today is just over 2100. Pay-to-use ATMs provided by independent suppliers has largely filled the gap.

New Zealand’s banks have conducted an aggressive anti-cash campaign in recent years and have done this quite openly. The branch and ATM closures are part of this strategy.

Who pays the costs of cash?

The public still get access to cash through bank-owned ATMs, but 34% of cash is now accessed through merchants.



The problem is that the retail cash sector, merchants, independent ATM operators and consumers, are carrying 68% of the costs (and risks) of cash – providing cash, change, running the independent

ATMs and the costs of storing and managing cash outside of banks. The commercial banks supply the cities but have left the retailer cash sector to do the rest.

Cash system redesign 2021

As noted, the community cash services trial described in this presentation is being carried out in the context of RBNZ’s 2021 cash system redesign.

In 2021 RBNZ set out to ensure that consumer access to and use of cash is supported, and merchant acceptance of cash is supported. It has run consumer awareness campaigns, mandated merchant acceptance and put in place remuneration of merchants for cash out services. The key is frequent, affordable cash delivery and collection for merchants.

RBNZ is working to find solutions for:

- Recirculation capabilities at the point-of-sale
- Consolidating functions (eg. utility entities, joint ventures)
- Solutions for coins
- Broadening access to wholesale cash, including low denomination banknotes and coins
- Directing banks to provide affordable cash services to support consumer access to cash.

No single intervention will work, and a range of interventions will be needed.

Community Cash Services Trial

RBNZ has identified 91 communities with a population of between 1000 or 10,000 people that don’t have a branch or only have very limited opening hours. 8-10 of these have been chosen for a trial starting in September 2024, and running through to February 2026, which will make cash available through retailers on a new basis.

The cash flow will be from cities to rural depots and from those rural depots to rural shops which will then provide cash, with or without purchases, to consumers with no fee. Retailers will be paid a fee for cash issued by them.

In these communities there will be one of:

- Multi-bank smart ATMs with coin deposit facilities
- Smart safes that provide a cash drop off and/or pick-up point
- Store visits by individual security van services under multi-retailer deals

The costs of this equipment is being paid by the trial.

The ATM industry says recycling ATMs reduce CIT visits by 40%.

The trial will test whether this new access to cash changes behaviour, the economics of local distribution, recirculation within communities and banknote quality impacts, service needs and use rates.

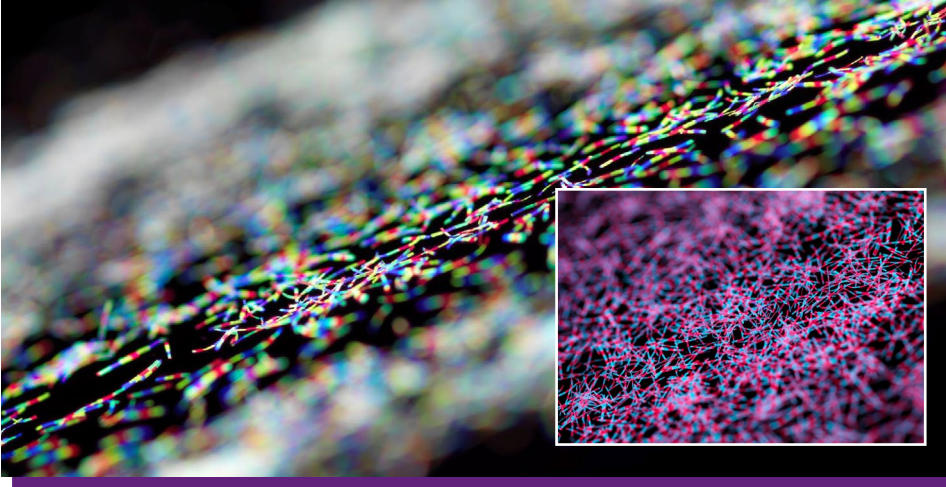
Next steps

Beyond the trial there is a need to explore legal gaps, including other parts of the cash system, the redesign ‘policy bundle’ described above, the implications and practicalities of widespread remuneration if the trial is successful and how to manage crisis using this approach.

The results and lessons from this trial will be watched closely by many central banks because it is a rare example of a focused attempt to address the withdrawal of cash services in rural areas. The rest of the 2021 redesign report is also of great industry to the wider cash community.

It's The Little Things That Count!

This short phrase is a truism. Another is 'you get what you pay for'. When security fibres are used in banknotes, it is fair to say both truisms apply. Security fibres may be very small, but the level of security they provide certainly gives value for money.



Security Fibres, an independent family-owned business based in the UK, has been supplying security components for over 40 years. It pioneered the development of paper-based fibres (as opposed to synthetic ones) for use in both cylinder mould and fourdrinier papers and its prime product markets are banknotes and passports.

Security fibres are one of the earliest and most reliable anti-copy security features. The fibres can be visible (overt) or invisible (covert) to the naked eye and can also incorporate machine-readable (forensic) features (normally just one).

Of the world's issued banknotes (just over 1,000), currently around 81% are paper, and 19% are polymer (which is unsuitable for fibres). Some 705 (80%) of the 882 paper denominations use fibres as a security feature. Their inclusion does not affect the performance or physical properties of the banknote paper or of a banknote in circulation. The features of the fibres can be chosen to meet the specific requirements of the banknote, such as its level of security, lightfastness, and durability.

Fibres for banknotes

Security fibres are short (typically 2mm-6mm), narrow (typically 0.3mm or 300 microns) lengths of material and are added to security paper pulp during the papermaking process. They are made with cellulose-compatible materials (viscose or paper).

They can be unique to a banknote or series by size and colour (visible or UV or both). The colours can, for example, match those of a country's flag, and can be reproduced in a particular colour with the same

position on each fibre.

A mixture of fibres for all banknotes in a series can be used. For example, in a series of four banknote denominations, a fibre design of four colours unique to that series could be used for all four banknotes, or the fibres for the two higher denominations could have an overt feature for added security. Many designs and secure combinations are possible.

Security fibres can also be used to provide an immediate upgrade to an existing banknote or series, either by being added to a note or series without fibres, or by upgrading the existing fibres by adding a covert feature; either achieving an immediate upgrade. As security fibres can be overt or covert, or a combination of the two, it is important that they should be easy to verify by an individual or trained examiner.

And, of course, whatever option or combination is chosen, security fibres provide a very inexpensive way of incorporating security into banknotes and/or upgrading existing banknotes at minimum additional cost.

The company's two types of security fibres for banknotes are Rainbow™ and Spectrum™.

Spectrum Fibres are invisible in ambient light but visible under UV light, fluorescing in the six main spectral colours – red, orange, yellow, green, blue, and violet – along the length of the fibre. The UV type can be anti-stokes or bi-fluorescent.

Rainbow Fibres, also known as Candy Stripe, can be produced in a wide variety of types or designs. Their small size combined with the variety of fluorescent colours in precise register make them very difficult to counterfeit.

4-colour Rainbow Fibres, as with Spectrum Fibres, fluoresce under UV light along their length. Dual fluorescence can be combined so that the colours are different under long and short-wave UV light. Different colour combinations can be chosen, and complemented with short-wave UR and IR.

Rainbow Fibres can be cut to register, and they can feature one or more security features such as anti-stokes, UV fluorescence, bi-fluorescence, microprint and visible IR. They can be multi coloured, machine detectable, and photo – or thermo-chromic.

Other products in Security Fibres' portfolio include VeriFibre™, containing a taggant that can be read with a smartphone and that can be used as visible fibre for easy detection or 'hidden' in Rainbow Fibres, and Myriad Fibres, involving the 'pseudo-random' patterning of fluorescent colours arranged in various shapes and sizes along the length of the fibre.

Recently, Security Fibres has teamed up with the German state printer Bundesdruckerei to adapt UV-excited fibres to create a colour gradient

It has also developed a process for removing the colour from fibres already embedded in paper, enabling the paper to be better recycled. This technology was presented at the recent Banknote Conference (see CN June 2024) and, more recently, the Cash Sustainability Forum.

According to Gary Spinks, owner and Managing Director of Security Fibres, even though fibres represent only a very small percentage (c. 0.01%) of a quantity of banknote paper, they nevertheless present a challenge to banknote paper makers looking to recycle broke, the name given to wastepaper, eg. from start-ups, or when breaks occur, or the quality is not to standard in the paper making process. Broke can be reintroduced into the process instead of being treated as waste, but not if it is contaminated with fibres from a previous run.

The solution involves the application of a primer layer to the surface of the paper fibre. When a water-soluble agent is added to the water to which the broke is added, the special primer layer reacts with this agent and the printed fluorescent colours are removed from the fibre. This method allows the pulp to be reused in a new production. The process does not involve harmful chemicals.

So not only are security fibres an unobtrusive and cost-effective means of enhancing the security of banknotes, they are now playing their part in the sustainability of the production process and product as well.

How Regional Recycling Solutions Support Global Success

■ By Tim Berridge, CCL Secure

In an age where consumers, companies and central banks are seeking to reduce raw materials use and close the loop on waste, banknote recycling has never been more important.

The reasons for this go beyond environmental impact alone. The cultural cachet of banknotes is such that they are often described as a nation's business card, and this is apt: few products are more ubiquitous in everyday life.

Globally, there are approximately 550 billion banknotes in circulation, and every year, between 150 and 180 billion banknotes are produced to replenish them. By weight, this equates to roughly 153,000 metric tonnes of spent banknotes annually.

Their end-of-life treatment can represent a particularly powerful declaration of our shared desire for a more sustainable future – but not all banknotes are created equal.

Genuine recycling process for polymer

Rather than languishing in landfill or being incinerated, GUARDIAN™ banknotes are converted back into polypropylene pellets that are on-sold as a commodity input for use in durable, end-of-life products.

In Chile, for example, GUARDIAN banknotes become a material with properties similar to natural wood, which is used to make floors, roofs and furniture. And that's just one example.

Globally, 80% of central banks using GUARDIAN substrate recycle it.

This represents a dividend on decades of investment and innovation by CCL Secure, in partnership with recyclers, printers and central banks. In 2015, we strengthened this commitment with the launch of the GUARDIAN Global Recycling Program, a network of regional recycling facilities strategically situated in key markets to support our goal of 'zero waste'.

This groundbreaking initiative was recognised with a Central Banking Award

for sustainable practices in 2021 – and followed a major direct infrastructure investment the year before.

Regional recycling solution for Latin America

In 2020, CCL Secure's sister company, Innovia Films, launched a specialised recycling centre in Zacapu, Mexico. It was specifically designed to provide central bank customers with access to a simple, streamlined, and proven process for recycling spent banknotes across Latin America.

The Zacapu plant includes an area dedicated to banknote processing, as well as specialised pelletising equipment and extraction systems. It can recycle 2 metric tonnes per day, which equates to approximately 700 million polymer banknotes per year.

'Since the plant began operations in late 2020, the volume of banknotes being recycled has grown enormously,' says Javier Andino, CCL Secure's Head of Central Bank Technical Services in Latin America.

'The volumes forecast this year represent a seven-fold increase on 2020. That reflects the fact that 90% of the central banks using GUARDIAN substrate in Latin America recycle now – and we expect this figure to increase further soon.'

Several central banks across Latin America have switched to GUARDIAN substrate in recent years – but some are yet to commence recycling. This is because GUARDIAN banknotes last three to five times longer in circulation, and therefore, depending on the volumes involved, it tends to take several years to accumulate a quantity of unfit notes that is practical to recycle.

CCL Secure is proud to have ensured a regional recycling solution will be in place when that time comes.

We are committed to collaborating with central banks to raise the rate of recycling globally – and understand that every central bank will have unique circumstances and challenges to overcome.

Support tailored to individual central banks

With dedicated technical managers in every region, CCL Secure consults closely with central banks to understand the specific challenges they face and collaborates to create effective solutions. Broadly, the best approach will be shaped by two factors.

The first is volume. While there is no minimum volume required for recycling polymer banknotes, economic viability increases with scale. This is why some central banks prefer to store shredded banknotes to be processed in batches.

The second is the availability of local recyclers. Not every central bank will have access to a suitable recycler within their own country. The solution is to shred and store banknotes, so they can be transported to a regional recycling centre once sufficient volumes have been collected.

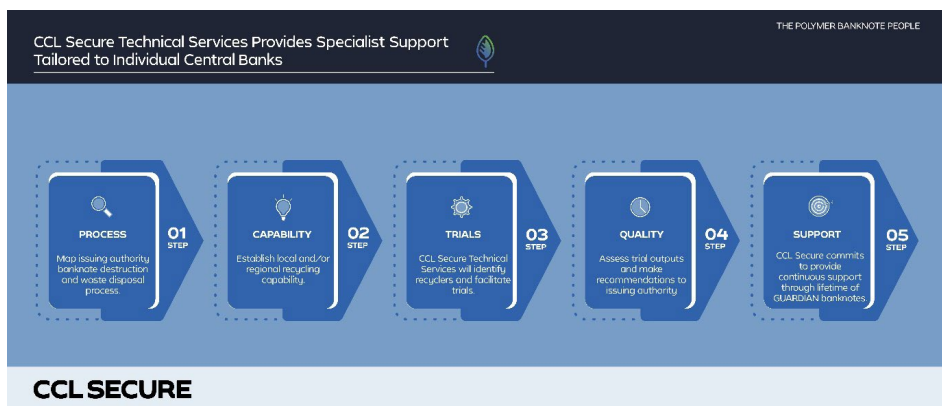
CCL Secure's technical managers are there to talk central banks through their options, connect them with the right recyclers, and provide information on the technical aspects of the recycling process.

The biggest challenge when recycling polymer banknotes relates to ink load. By weight, GUARDIAN polymer banknotes generally consist of 70% polypropylene, with the remainder made up of inks, coatings, and any other contaminants gathered during circulation.

In the past, this led to a risk of down cycling, because the granulated polymer banknotes had to be mixed with virgin polypropylene or other recyclable materials. Now, sophisticated extruders have advanced to the point where they can handle 100% granulated polymer banknotes.

New second-life products have also emerged. In particular, 'plastic wood' has proven to be an ideal second-life product, because its production process is not affected by ink load.

It's a timely reminder that we need to see the forest for the trees when it comes to banknote recycling. Only polymer banknotes have a genuine recycling process in place, and in the case of GUARDIAN, the vast majority are already being turned into durable products at end-of-life.

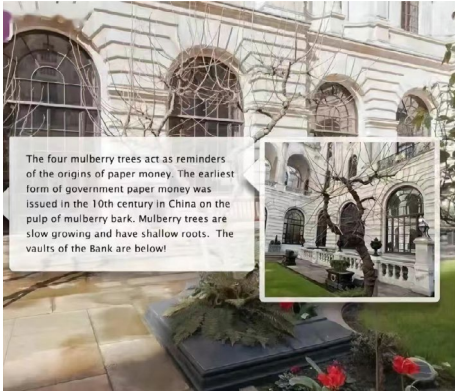


The Birth of Paper Money: the 1,000th Anniversary of the Jiaozi

Today, located in City of London, the Bank of England, with a history of more than 300 years, is a pioneer of modern finance. It is also one of the world's oldest central banks.

Here, visitors can see British banknotes, silver coins and ancient Roman currency etc. While visitors walk into the Garden Court of the Bank, they will see four mulberry trees, which originate from China and are rare in the UK. So why are these trees planted here?

A tourist reminder in the Garden Court reads: 'The four mulberry trees act as reminders of the origins of paper money. The earliest form of government paper money was issued in the 10th century in China on the pulp of mulberry bark. Mulberry trees are slow growing and have shallow roots. The vaults of the Bank are below!'



World's first paper money

In the 10th century, during the Northern Song Dynasty, China issued the world's first official paper money, Jiaozi, which was made from mulberry bark.

To give some background, during the Song Dynasty (960 CE to 1279 CE), Chengdu (the capital of southwestern China's Sichuan province) was rich in natural resources and China's largest distribution centre for grain, tea, textile, paper, horses, etc. The turnover of money in the markets was huge.

Chengdu was not only flourishing in commerce; the handcraft industry was also very prosperous at that time, particularly in paper manufacturing and carving. The development and maturity of papermaking and printing technology provided an essential material basis and technical conditions for the birth of the Jiaozi.

Prior to that, iron money was widely used. As per the pricing of the period, one piece of silk was 20 guan, equivalent to 65kg of iron money. Needless to say, carrying

around the money for large transactions was inconvenient, to say the least.

The original Jiaozi, which was actually a certificate of deposit, eased the inconvenience. A special store emerged, the Jiaozipu, which was used as a vault to hold the iron money on behalf of merchants (who were charged a fee), secured by the certificates.

The Jiaozi gradually became a tool, a general equivalent in commodity exchange, and took the first step in the evolution from certificate of deposit to currency. However, owing to the lack of supervision, the Jiaozipu could not pay out in time when funds ran out due to poor management, damaging confidence and leading to lost assets and chaotic market conditions.

As a result, in the latter years of the Tianxi era (1017 CE to 1021 CE), the government banned the private issuance of Jiaozi. The abolition seriously hindered trade and local economic development, so the government resumed the issuance of Jiaozi, but this time controlled the issue rights.

In January 1024, the Imperial Court officially established the Jiaozi Administration in Yizhou (the ancient name of Sichuan) and issued the first 'Official Jiaozi'. Reserves were equivalent to 28% of issuance. The issuance was periodical. Each period lasted for three years. At the end of each issuance period, all the Jiaozi were exchanged for new issues.

At this point, the official Jiaozi became a real legal paper money as we know it today. Therefore, 2024 is exactly the 1,000th anniversary since the world's first banknote was officially issued.

The bond between Jiaozi and modern banknote printing

The invention of paper money is a major innovation in the history of Chinese and even world civilization. If the emergence of the first official paper money is an inevitable trend of human society and economic development, then the establishment of a modern banknote printing enterprise in the birthplace of Jiaozi is keeping the bond between Chengdu and currency alive.

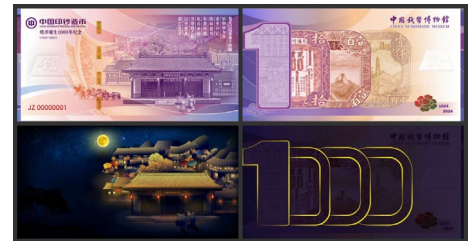
Chengdu Banknote Printing Co, established in 1965, covers an area of 150 acres and employs more than 2,000 people. As a subsidiary of China Banknote Printing and Minting Corporation, it is a printing

enterprise in China with comprehensive business lines which include banknote printing, banknote paper production, cash handling, security printing and paper production, passport paper and cover production, gold and silver refining, etc.



Chengdu Banknote Printing Co.

To mark the 1,000h anniversary of the birth of banknotes, Chengdu Banknote Printing has designed and produced a special note – the 'Banknote Birth 1000th Anniversary Coupon'.



The main images and fluorescent effects under UV light of the 'Banknote Birth 1000th Anniversary Coupon'.

The numismatic note mines the historical, cultural and regional background of the birth of the world's first official banknote – extracting the cultural connotation of Chinese banknotes while adopting the latest anti-counterfeiting technology.

On the front appears an image of the first official Jiaozi issuing agency – Yizhou Jiaozi Administration – against a background of a prosperous market trading scene and the caravan business in the Northern Song Dynasty.

On the back, the main image is the numeral 1000, and various classic currency symbols that were used throughout the development of Chinese banknotes, showing the inheritance and evolution of these from ancient times to modern times.

Final word

Paper money was born at the peak period of economic development of ancient China. The appearance of Jiaozi promoted the prosperity of ancient Chinese society. The popularity of paper money in the world has provided convenience of transactions for the development of economy and laid a solid foundation for shaping the modern financial system.

G+D Collection Celebrates 2024 Sporting Events

Commemorative coins are a common way for countries to mark their participation in international sporting events, particularly if they are hosting those events. Less so for commemorative banknotes, but they are becoming more popular.



Celebrating a summer of sport in Europe (notably the recently-concluded Euros tournament held in different cities throughout Germany and 2024 Olympic and Paralympic Games currently underway Paris), the Giesecke+Devrient Banknote Collection Foundation has searched through its stocks and found numerous banknotes from the 20th and 21st centuries that depict the theme of sport in a variety of ways. It is presenting a selection of its finds in an exhibition entitled 'Sport on Banknotes'.

With over 350,000 banknotes, the Giesecke+Devrient Foundation banknote collection is one of the most important collections of its kind, with examples

ranging from the issues in China in the 14th century to the banknotes issued today around the world. The aim is to document paper money on a broad scale and to research the banknote as a culturally influenced means of payment.

The collection was founded by Albert Pick, who in 1964 handed it over to the Bayerische Hypotheken – und Wechsel-Bank, where he was employed as its curator. After his retirement, HypoVereinsbank, as it had then become, set up a foundation called the 'HVB Banknote Collection Foundation' with the collection housed at G+D's premises in Munich. In 2021 it was renamed the G+D Banknote Collection Foundation and is

a legally independent public foundation under civil law.

The Giesecke+Devrient Banknote Collection Foundation does not have its own exhibition space, but makes its holdings available on loan to museums, scientific and cultural institutions and is available as a cooperation partner. Its services include scientific and conservation advice, selection of objects and accompanying information. It is also currently in the process of digitising the entire collection.

The exhibits in this latest collection are divided into five themes:

- Sport as an expression of national identity
- Other cultures | other sports
- Sporting individual and team successes
- Sport events in the 21st century
- SPORT on emergency money.

According to the Foundation, 'one thing that sport and banknotes have in common is particularly striking: sports motifs on banknotes are an expression of the respective national identity and history of a country. Both sport and means of payment such as banknotes are an integral part of everyday life and promote a sense of unity between nations and play an important role in identifying with and feeling connected to a country.'



Besides the virtual exhibition, the G+D Banknote Collection Foundation has also been active in publishing. Together with the Bank of Finland, it has jointly supported a new book entitled 'Vom Zettel zum Geldschein – Deutsche Einflüsse auf das Design und den Druck von Banknoten im Großfürstentum Finnland' (From Pieces of Paper to Banknotes – German Influences on the Design and Printing of Banknotes in the Grand Duchy of Finland), written by Antti Heinonen, former Director Banknotes of the European Central Bank. The book will be published on the websites of both organisations this autumn.

More information about the work of the Foundation, and the exhibition, can be found at www.geldscheinsammlung.de/aktuelles-und-interessantes/sport-auf-banknoten



Outline Programme and Awards Announced for The Coin Conference 2024

The high-level programme and award categories for the next edition of The Coin Conference have been announced, with the event scheduled to take place 28-30 October in Lisbon, Portugal.

The Coin Conference focuses on circulating coins as part of countries' currency strategies. This includes design, security, cost-effective and sustainable production, as well as handling, distribution and management in circulation.

Highlights of the programme include presentations from the Federal Reserve Financial Services (FedCash Services), the Euro Coin Sub Committee, the central banks of Portugal, Morocco, Spain and the Philippines, the Austrian Mint, Royal Canadian Mint, Monnaie de Paris, Mint of Poland, FNMT, South African Mint and INCM, along with the Mint Directors Working Group, the Mint Directors Association and the International Mint Industry Association, to name but some.

One of the most pressing issues for central banks and treasuries as regards coins is getting them to circulate effectively once issued, rather than disappearing from circulation, leading to artificial shortages and high replacement costs. In light of this, nearly half of the programme will be dedicated to various aspects of circulation and creating more efficient coin cycles.

The programme also includes two workshops – one for central banks moderated by Dieter Merkle of Schuler focusing on new priorities for coin issuers and the other, by Ursula Kampmann of CoinsWeekly, on the production and issuance of commemorative coins for domestic and international markets.

There will, in addition, be a panel discussion, led by Simon Lake (formerly of The Royal Mint and now an advisor to Mint of Poland) on the somewhat controversial topic of 'Coins in 2035 – What Will the Industry Look Like?'

The Portuguese mint INCM, the honorary sponsor for the event, will be hosting an evening reception on the first day at its premises in Lisbon. On the day after the conference, it will also be hosting a tour for central banks and issuers of its facility, as will the Portuguese banknote printer Valora.

The full programme, comprising around 32 presentations, a panel discussion and the workshops, is due for publication shortly.

thecoinconference.com

IACA Excellence in Currency Awards

Nominations will be closing shortly for the IACA Excellence in Currency Awards for Coins, the winners of which will be announced at the Coin Conference.

There are three categories:

- Best New Commemorative or Test Circulating Coin Issued at Face Value
- Best New Coin Product, Process, or Manufacturing Innovation
- Best New Re-Circulation/Distribution Innovation or Initiative.

Projects of any issuer of coins, central bank or ministry of finance, mint or other supplier of products, services or systems for coin production, distribution, processing or management are eligible for nomination in the appropriate categories. Self-nomination by such organisations is both allowed and encouraged.

These projects must have been released between 1 June 2022 and 5 August 2024, and the nominations period is open until 5 August 2024. Those interested in nominating a project in any, or several, of the categories can do so through IACA's awards site – currencyaffairs.awardsplatform.com.

Raise Your Profile with Coin Issuers Worldwide

The next edition of the **Directory of Circulating Coins** is currently being compiled, and is scheduled for publication this Autumn. First developed by the publishers of **Currency News** in 2014, the upcoming issue will be the fourth edition.

This Directory is the only guide to every circulating coin in the world from the afghani to the zloty – making it an invaluable reference and research tool for anyone involved in the design, production, issue and management of coins.

It provides easy access to up-to-date information on specifications (diameter, weight, edge detail, composition, first and last years of minting and descriptions of the obverse and reverse) along with images of each coin in one concise volume, covering every current denomination of each country's circulating coins.

A limited number of sponsorship and advertising opportunities are now available, with a 10% discount for subscribers to **Coin & Mint News™**, **Currency News™**, or **Cash, Payment & CBDC News™**.

Copies of the Directory will be supplied free of charge to central banks and treasury departments worldwide, and launched at The Coin Conference in Lisbon later this year. The Directory therefore offers a unique opportunity to reach organisations and government authorities looking for coin-related products, services and solutions.

Contact us to find out more information about the Directory of Circulating Coins, or to register your interest in sponsorship – info@currency-news.com.

New Industry Glossary Covers Physical and Digital Currency

Reconnaissance International – co-publishers of Currency News™ (and a leading global source of business intelligence on currency, identity, authentication, tax stamps, and traceability) – have unveiled a new industry reference glossary.

Compiled by Reconnaissance experts, the glossary aims to support industry stakeholders by offering an up-to-date collection of important definitions and sector-specific terminology.

The glossary is now available in a searchable online format on

the Reconnaissance website at reconnaissance.net. Users just need to click on the below icon in the menu bar to view it.

Alternatively, the glossary can be accessed from the Currency News website via the Glossary tab.

The glossary contains definitions covering banknotes, coins and digital currency, along with authentication, holography, identity, tax stamps, and traceability. The definitions are written in simple text and arranged in alphabetical order, with tools such as links and filters allowing for easy navigation and quick access to specific definitions.

Reconnaissance will regularly update the glossary, adding to the more than 700 definitions as required.

Any comments or feedback on this new information source are welcome at publications@recon-intl.com.

Sustainability Centre Stage in Frankfurt

Some were in Frankfurt for the European football in the final week of June, but not all. The second Cash Sustainability Forum saw two and a half days of discussion, presentations and debate focused on reducing the environmental impact of cash and the cash cycle.



What became clear is that sustainability is now a ‘thing’, a topic or even an action agenda item for many, many organisations. For some central banks sustainability is a standalone reportable topic, but it appears to be part of the mix now even for countries and cash cycle organisations where that is not the case. In terms of reporting, the private sector appears to be ahead of central banks, but few seem to be ignoring it completely.

Certainly, across stakeholders there are very different levels of knowledge, engagement and plans, but a great deal is being achieved and there is real momentum in most areas to do better.

Cash cycle changes

Managing the cash cycle brings challenges for central banks since their levers of control are less direct than in other areas such as cash design, procurement and disposal of unfit notes. The cash cycle is also an area that is changing, albeit at different rates and in different ways around the world.

Given how much of the environmental impact of banknotes happens post-issue, the Forum started with a cash cycle workshop. In that session Cash InfraPro gave an excellent summary of what is going on. It reported that there are three lifecycles co-existing in a cash cycle – those of banknotes, wholesale cash and branches. Cash flows between all three either directly or indirectly and the challenge of central banks is to ensure the cash cycle works well when its control of each element is not absolute.

Where we were: Today central banks manage cash availability/demand,

authenticity, quality/fitness classification and efficiency. Its strategic levers are the design of banknotes and coins, and the design of the cash supply chain, including cash recirculation policies when cash management has been outsourced.

What is changing: But the world is changing, and new objectives are in sight – cash accessibility, cash cycle monitoring and control and sustainability. Presentations from Brinks and Diebold Nixdorf in particular reflected how changing cash cycles demand new approaches as the private sector develops new business models and responds to different cash usage.

A presentation from the Reserve Bank of New Zealand on its community cash trial played to all of these changes, mixing resilience, inclusion, efficiency and sustainability (see page 10).

Cash design

In addition to reporting on its Product Environmental Footprint study of banknotes, the European Central Bank (ECB) also outlined how its approach to sustainability has changed since the launch of the first series of euro banknotes (ES1).

For both ES1 and the second series (ES2), the ECB’s work has been to measure after issue. Between ES1 and ES2 the ECB has done significant work on introducing sustainable cotton and banning the disposal of unfit banknotes in landfill. With a prospective third series, the ECB is being proactive, having developed a tool to allow it to assess the end-to-end environmental impact of different design variants.

The South African Reserve Bank also outlined seven areas where it is working to make its currency more environmentally friendly, with considerable work devoted to alternative substrates and end of life disposal, as well as the cash cycle.

Louisenthal introduced its Green Banknote Design and how careful selection of materials can increase the biomass in a banknote, as well as increasing its note life.

End of life disposal of banknotes

Louisenthal also presented on its new Banknote Fibre Extraction process that allows unfit cotton paper to be more easily used to create new products, and Oberthur Fiduciaire gave details of its work on repurposing unfit notes into new products.

Presentations from the Pakistan Security Printing Corporation on aerobic composting, Landqart on using anaerobic autoclave disposal of its Durasafe product and a joint presentation by Casa da Moeda do Brasil and BP Paper on putting waste banknote paper and shredded unfit paper back into the paper making process to create new paper and technical products demonstrated just how many options central banks have now beyond just incinerating banknote waste for energy.

For those with a polymer substrate, CCL Secure made the case for the benefits of having a long life substrate which is also fully recyclable back into a circular economy.

You can only change what you measure

Across the world regulators are starting to lay down reporting requirements on sustainability.

Verco gave a lot of detail on Europe’s Corporate Sustainability Reporting Directive (CSRD) and its implications while MyCarbon took a more general look, including providing details on the highly regarded Science Based Targets initiative. Overall, its advice was simple. If you calculate your emissions, set science based targets (SBTs) and have a strategy about how you are going to get to net-zero carbon emissions, you will be well placed to comply with whatever regulatory requirements come along.

EcoVadis, a ratings agency, explained its work in the banknote industry and beyond, as well as taking part alongside Orell Füssli and CCL Secure in a panel that followed on how to include sustainability criteria into tenders. Use of a ratings agency gives buyers both assured data and the opportunity to compare suppliers. In this session De La Rue looked at the measurement of your supplier’s emissions (generally Scope 3), providing a hierarchy of approaches based on the methodology described in the GHG Protocol for Scope 3.

Finally, Cetus explained how it uses Intergraf’s tool for measuring carbon emissions in the print industry. The tool was not designed for use for banknote printing, but it was a fascinating example of how an industry association has responded and acted on sustainability.

Examples of work done

Oberthur and the Royal Canadian Mint gave detailed, practical explanations of their manufacturing initiatives. Security Fibres provided an example of what can be achieved by continuous improvement. CPS invited the audience to think differently about how to process banknotes. Leftover Currency gave an example of filling a gap for wholesale repatriation of currency across borders.

Wide-Ranging Panel Discussions at the 2024 GCF

The 2024 Global Currency Forum (GCF) – which takes place in Muscat, Oman from 30 September-3 October – is set to host a series of panel discussions that promise to delve deep into the evolving landscape of global cash and currency. This year’s forum features an impressive lineup of experts who will share their insights on various topics, from the role of banknote design in national identity to the sustainability of cash.

Design: Discover the Benefits of Banknotes that Connect

Key speakers:

- **Dr Christoph Engemann**, Ruhr-University Bochum (Germany)
- **Joseph Ruocco**, Government Practice Leader at SOM (US)

This panel will explore the intricate relationship between banknote design and national identity. Dr Engemann will discuss how design elements on banknotes can evoke national pride and cultural heritage, while Joseph Ruocco will provide insights into the practical benefits of linking architecture and national image.

Financial Literacy

Key speakers:

- **Deema Bibi**, NGO INJAZ (Jordan)
- **Roeland Monasch**, Aflatoun International (Netherlands)

Promoting financial literacy is crucial for genuine financial inclusion. Deema Bibi of INJAZ and Roeland Monasch of Aflatoun International will discuss strategies to enhance financial literacy among diverse populations. They will share their experiences in implementing educational programs that empower individuals with the knowledge and skills needed to make informed financial decisions.

The Future Cash Cycle

Key Speakers:

- **Mark Gould**, Federal Reserve (US)
- **Burkhard Balz**, Bundesbank (Germany)
- **Rajiv Kaul**, CMS Info Systems (India)

- **Aniko Bodi-Schubert**, Central Bank of Hungary

- **Sofia Sadiq**, ATMIA

As the cash cycle evolves, collaboration among stakeholders is more critical than ever. This panel features representatives from central banks and private institutions who will discuss the future of the cash cycle. Topics include innovations in cash management, the impact of digital currencies, and ways to enhance cooperation among different sectors to ensure a resilient and efficient cash cycle.

Sustainability in Cash and Currency

Key speakers:

- **Hanan Sakr**, EMIR (UAE)
- **Philippa Desiderio**, Northern Trust (UK)

Sustainability is becoming a key focus in the world of cash and currency. Hanan Sakr of EMIR and Philippa Desiderio of Northern Trust will explore sustainable practices in currency production and management, from green investments to reducing the environmental impact of currency operations. They will discuss how institutions can integrate sustainability into their core strategies and the benefits of doing so for the economy and the planet.

Pro-Cash Legislation: What Are Legislators Doing?

Moderator:

- **Brett Scott**

Key speaker:

- **Javier Ruperez**, Denaria (Spain)

This panel will examine the legislative

efforts to protect the use of cash in an increasingly digital world. Javier Ruperez will provide insights into the pro-cash movement in Spain, discussing the importance of maintaining cash as a viable payment option for all segments of society.

Artificial Intelligence: Friend or Foe?

Key speaker:

- **Axel Dauchez**, NGO Make.org (France)

Artificial intelligence will transform the currency landscape, but is it for the better? Axel Dauchez will explore the potential benefits and risks of AI, discussing how AI can be harnessed to improve efficiency and security while also addressing the ethical and practical challenges it presents.

GenZ - Are You Putting Future Generations at a Disadvantage?

Key speakers:

- **Prof Julia Pitters** (Austria)
- **David Little**, SBV (South Africa)

This panel will focus on the currency-related challenges facing Generation Z. Prof Julia Pitters and David Little will discuss whether current currency systems and practices are setting up future generations for success or hindering their economic potential. They will explore the needs and expectations of GenZ and how the cash landscape can adapt to better serve them.

The Global Economy and Resilience

Moderator:

- **Pat Thaker**, Economist Intelligence Unit (UK)

Key speaker:

- **Patty Collins**, Bureau of Engraving and Printing (US)

This panel will address the emerging threats to payments resilience in the global economy. Moderated by Pat Thaker, the discussion will feature Patty Collins, the new Director of the Bureau and Engraving and Printing of the United States.

Register now at www.globalcurrencyforum.org

to be part of these discussions shaping the future of cash.

... Sustainability Centre Stage in Frankfurt

Final word

This report has only touched on some of the presenters and some of their messages. The Forum was full of content, which is now available in a detailed report (see below).

Whether you feel confident to manage sustainability or not, the Forum had something for everybody, with both practical examples and food for thought about policies and change. This job will never be complete, but huge progress has been

made and there are opportunities for us all do more and to do better.

A white paper on cash cycle recirculation and recycling will be published at the end of the summer with a (free) webinar in September.

The next face to face sustainability event will be a dedicated day alongside the regional High Security Printing Latin America conference in Brazil, June 2025.



From Cash to Conservation

Researchers at Griffith University of Australia have investigated the representation of native fauna on banknotes to identify geographic hotspots and taxonomic patterns, and determine whether threatened and endemic species were more readily represented.

The study – ‘From Cash to Conservation: Which Wildlife Species Appear on Banknotes’ – looked at 4,541 banknotes from 207 countries between 1980 and 2017. It was published in ‘People and Nature’.

The study found that:

- Native fauna were depicted on 15.2% of banknotes reviewed
- These represented 352 unique species with a strong bias towards terrestrial species (89%)
- There was a dominance of bird and mammal species (83% combined)
- African banknotes had the highest mammal representation
- Birds were favoured in South America
- Globally, threatened species were commonly depicted on banknotes, with 30% of all imagery representing these species.

‘This study underscores the role that wildlife imagery on banknotes can play in shaping national identity and public perception of a country’s biodiversity’, said Associate Professor Guy Castley of Griffith University, adding that ‘by highlighting both the celebrated and threatened species, currencies around the world serve as a unique platform for promoting conservation awareness.’

The research team recommended several avenues for further investigation to explore the relationships between perceived value and wildlife representation. These included longitudinal studies of how representation changes over time; the inclusion of flora and/or coin imagery; identifying species-specific traits for selected wildlife; and examining the decision-making processes governing wildlife imagery on banknotes.

Kazakhstan’s 10,000 Tenge Banknote Continues Saka Style Theme

The National Bank of Kazakhstan (NBK) introduced the newly designed 10,000 tenge banknotes into circulation at the end of June. This release marks the second instalment in the ‘Saka Style’ series, which draws inspiration from elements of the ancient Saka culture, a key precursor to traditional Kazakh ornamentation. The series aims to evoke national pride, deepen cultural awareness, and promote environmental stewardship among Kazakhstan’s citizens.

According to the NBK, the 10,000 tenge banknote represents more than just a means of exchange. It is a symbol of Kazakhstan’s rich history and forward-thinking spirit. These banknotes are expected to enter mass circulation in September, allowing time for all necessary adjustments to banking infrastructure and public adaptation and ensuring a smooth transition to the new series.



Design and symbolism

The new 10,000 tenge banknote is a visual homage to Kazakhstan’s rich heritage and the natural world.

The front of the note features:

- **Tree of Life branch and soaring bird:** this motif, derived from the Issyk Kurgan (5th-4th centuries BCE), signifies the sacred bond between nature and belief systems.
- **DNA spiral and infinity symbol:** these elements underscore the intrinsic link between humanity and the natural environment.

■ **Leopard on mountain peak:** this artifact, from the Issyk Kurgan, features prominently on the Golden Man’s headdress and symbolises fearlessness, power, and beauty.

On the back, the banknote features:

- **Leopard and ornamental shield:** the snow leopard, set against a stylised shield, represents the protection of values, the cardinal directions (of north, south, east and west), and the life-giving energy symbolised by the solar sign at the centre.
- **Leopard head with griffins:** this artifact from the Berel Kurgans (8th-7th centuries BCE) in the East Kazakhstan Region symbolises determination and strength.

Central to the reverse side is the landscape of the Zailiysky Alatau mountains, reflecting Kazakhstan’s natural beauty and ecological diversity. The intricate background features the Kazakh infinity ornament, encapsulating the nation’s vast and varied terrain.

Advanced security features

To ensure the integrity and security of the new 10,000 tenge banknote, the NBK has incorporated state-of-the-art security features. These include:

- **Varifeye® ColourChange Patch:** provided by Louisenthal, the patch shimmers in gold in direct light, while in translucent light passing through the window, the mountain top outline appears in an intensive blue.
 - **RAPID® Vision micro-optics windowed thread:** provided by Crane Currency, this feature offers a two-colour effect.
 - **SPARK Flow® Dimension:** this dimensional image from SICPA synchronises with the note’s artifact imagery for added security.
- In addition, the banknotes are designed with accessibility in mind. Raised lines along the long edges help the visually impaired to identify the denomination, complemented by a larger, high-contrast numeral.

Importance in the currency series

The NBK says that the introduction of the 10,000 tenge banknote is a significant milestone in Kazakhstan’s currency evolution. Following the release of the 5,000 tenge note earlier this year, the 10,000 tenge continues to build the foundation for the new Saka Style’ series. This series not only showcases the nation’s rich cultural legacy but also incorporates the latest in banknote technology to ensure security and usability.

The staggered release schedule will see the 2,000 notes later in 2024. The 1,000 and 500 tenge notes will be released in 2025, and the 20,000 note will be issued in 2026.

An interview with Arman Adibayev, Director Cash Department at the NBK, and Sanzhar Nurkassimov, Chief Designer, on the new Saka series featured in the February issue of Currency News™.

Note and Coin News

It's a Breeze for Mongolia's New Commemorative Banknote

The Bank of Mongolia has issued a limited edition 5,000 tugrik commemorative banknote to mark the 100th anniversary of the establishment of the central bank and the strengthening of the modern banking system in Mongolia. The banknotes are in the same design as the circulating 5000 tugrik but include a number of new security features.

For example, the Soyombo (Mongolia's national symbol) on the front of the note has been printed with UV visible offset in three colours, and the anniversary logo along with the image of a horseman in the lower right hand corner appear in SPARK® Live with Truspin effect.

There is also a tactile feature with six embossed lines for visually impaired people on the right and left edges of the banknotes.

On the reverse of the note is a BREEZE® machine readable micro-optics security thread from Crane.

With the exception of the 1 tugrik, the banknotes all feature a portrait of either Damdin Sükhbaatar, the leader of the 1921 revolution, on the lower denominations, or Genghis Khan on the higher denominations. The design of the current series dates to the 1990s, but a new series was issued in the early 2000s and there have been several subsequent upgrades.

The 5,000 tugrik, for example, was upgraded in 2018 with a new SPARK feature, and the 50 and 20,000 tugriks in 2019 with SPARK, a tactile feature for the visually-impaired and, for the 20,000, a MOTION® SURFACE stripe. In 2020, it was the turn of the 100, 500 and 1,000 denominations, which also included SPARK and a tactile feature. And in 2021, the 10,000 tugrik was similarly updated, with the addition of a 3D diffractive patch. The same year, it also issued a commemorative 10,000 tugrik celebrating the 100th anniversary of the Mongolian National Revolution, featuring an enhanced SPARK element for the anniversary logo.



In Other News...

■ Further to the introduction of a new currency earlier this year, the ZiG (which stands for Zimbabwe Gold), the Reserve Bank of Zimbabwe (RBZ) has now introduced coins in denominations of 1, 2 and 5 ZiGs.



The introduction of the ZiG is the sixth attempt by the RBZ since 2008 to maintain a national monetary system, creating a new currency independent of the US dollar. It replaces the Zimbabwe dollar and is now the only accepted form of local currency in the country, albeit that Zimbabwe maintains a multi-currency economy with the US dollar and the South African rand and will continue to do so until at least 2030.

The introduction of the ZiG earlier this year was accompanied by the unveiling of banknotes in denominations ranging from 1 to 200 ZiGs, with the RBZ indicating that the coins would replace the three lowest denominations. Hence the new 1, 2 and 5 ZiG coins. The 10 and 20 ZiGs will be retained as banknotes. The higher denominations – the ZiG 50, 100 and 200 – will be kept in reserve and not issued for the time being for fears of stoking inflation, a perennial problem in the country.

All three coins are made from nickel-plated steel, and ascend in diameter from 17mm to 21mm. On the reverse of each coin is an image of the stone-carved Great Zimbabwe Bird (which is the country's official emblem, appearing on the national flag and coat of arms).

The front of the ZiG 1 depicts the Flame Lily (Zimbabwe's national flower), the ZiG 2 the ruins of a medieval city known as the Great Zimbabwe Monument, and on the 5 ZiG the Victoria Falls.

Separately, the Maintenance Agency for ISO 4217 (which assigns the codes for each currency) has announced that the new code for the ZiG is ZWG.

■ Banco Central de Republic Argentina has announced that 236 million new high denomination 20,000 peso banknotes will be delivered this October, and issued shortly thereafter once ATMs and other cash handling machines have been adapted.

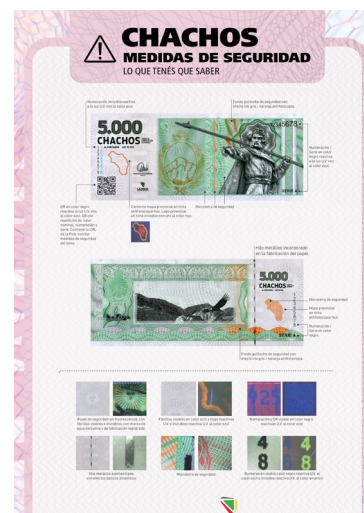
The notes are being printed in China, as are the new 10,000 peso notes, a second batch of which – numbering 190 million – will be delivered this September.

Continuing with the theme series of Heroes and Heroines of the Homeland, the portrait on the new 20,000 peso will be that of Juan Bautista Alberdi, who inspired the 1853 Constitution. The main illustration on the reverse will be a recreation of his childhood home.

Elsewhere in Argentina, the government of the La Rioja region has issued a new provincial currency called the 'chaco' (the nickname of the provincial leader Vicente Penaloza). The notes, which have been issued at par with the peso, are in six denominations, ranging from 1,000 to 50,000 chacos.

They have the traditional appearance and security features of normal banknotes, along with a QR code on each denomination, and to begin with will be used to pay part of the salaries of local government officials in the absence of sufficient funds from the central government.

Benefits of the local currency, says the provincial government, are that it will strengthen the local financial circuit, and reactivate the local economy and consumption.



■ Following a ceremony to put into circulation the latest commemorative 20 peso coin marking 500 years since the founding of the first Villa de Colima (one of the birthplaces of Mexican independence), the governor of the Bank of Mexico has announced that a commemorative banknote will be issued for the 2026 FIFA World Cup. It will be a low denomination bill to make it more accessible for collectors – possibly a 20 or 50 peso note, although this was not confirmed.

... In Other News

The US, Mexico and Canada will host the World Cup as representatives of North America, marking the first time that three countries have hosted the tournament together.

■ The Ugandan government has stated that it will gradually phase out lower denomination banknotes to reduce the costs of producing and circulating its currency – which has risen on average by 5% over the last 10 years, but more markedly in recent years – by 15% and more since 2020. In 2020/21, the cost stood at UGX 147.5 billion, rising to UGX 171.9 billion in 2021/22 and to UGX 214 billion in 2023/23.

No timelines have been given, but first in line will be the 1,000 Ugandan shilling, which already has a coin equivalent. In due course, all the notes will be withdrawn in favour of the coins.

■ The Central Bank of South Sudan has begun the issue of an updated SSP 1,000 banknote, featuring a change in wording on the note from the South Sudanese pound to the South Sudan pound. Other notes in the series will also be changed in due course. The specification and features of the new note are otherwise unchanged.

■ The National Bank of Poland has put into circulation a commemorative 20 złoty banknote marking the 80th anniversary of the Warsaw Uprising. Production has been limited to 80,000 pieces, which will be sold at a premium.



Events

9–11 SEPTEMBER 2024

SECURITY DESIGNERS FORUM

Warsaw, Poland

securitydesignersforum.com

30 SEPTEMBER–3
OCTOBER 2024

GLOBAL CURRENCY FORUM

Muscat, Oman

globalcurrencyforum.com

28–30 OCTOBER 2024

THE COIN CONFERENCE

Lisbon, Portugal

thecoinconference.com

4–5 NOVEMBER 2024

THE AMERICAS CASH CYCLE
& PAYMENTS SEMINAR

Louisiana, USA

currencyresearch.com

25–27 NOVEMBER 2024

THE EMEA CASH CYCLE SEMINAR

Cape Town, South Africa

currencyresearch.com

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Editor: Astrid Mitchell (right).

Editorial Advisors: Richard Haycock, Martyn White.

Advisors: Lahcen Hadouni, Antti Heinonen, Concha Jiménez, Michael Lambert, Brian Lang, Tsuyoshi Uematsu, Richard Wall, Lydia Yip.

Contributors: Tim Berridge, Kerre Corbin, Chander Jeena, Concha Jiménez, Nikki Strickland, David Tidmarsh, John Winchcombe.



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Currency Publications Ltd

2.4 The Beacon, Beaufront Park, Anick Road, Hexham, Northumberland, NE46 4TU, UK
Tel +44 (0)1932 785 680 Email: info@currency-news.com

