

CURRENCY NEWS™

THE CONFIDENTIAL NEWSLETTER FOR CURRENCY | VOLUME 22 – NO 12 / DECEMBER 2024

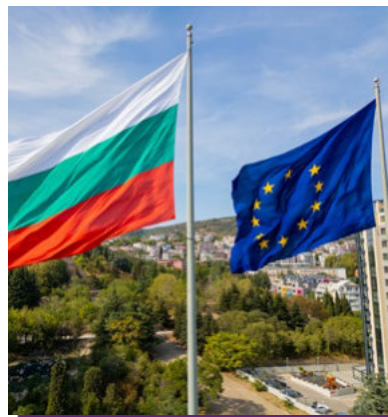
Inside this edition

Bulgaria Gets Set to become 21st Eurozone Member	1
Report Card: 'A Mixed Year with Evidence of Improvement'	2
De La Rue Reports Strong Order Book, Equity Sale Talks Underway	3
G+D Unveils Next Generation BPS Series	3
Directory of Circulating Coins – Out Now!	4
News in Brief	4
Central Banks and Cash Round-Up	5
Federal Reserve – A Generational Investment for the Future	6
Are Note Issuers Ahead of Counterfeiters: Update on Counterfeiting Data	8
Headlines of 2024: That Was the Year That Was...	10
Covestro Formally Launches CERTEVO	11
HSP Asia Comes Full Circle for its 20th Anniversary	12
Kings, Dragons and Leopards All Feature in Asia's Regional Banknote of the Year Awards	13
Updated Kenya 2024 Series – a Step Up in Security	14
Nominations Open for IACA and MDC Award Programmes	14
Note and Coin News	15
Philippines Prepares for New All-Polymer Series	15
In Other News...	15
Events	16

Bulgaria Gets Set to become 21st Eurozone Member

Bulgaria will meet the requirements to join the eurozone by January, leaving the final decision to Bulgarian politicians, according to the Governor of the Bulgarian National Bank (BNB).

BNB data suggest that inflation will fall to a level compatible with euro adoption by January, paving the way for the country to adopt the euro on 1 January 2026, subject to final approval by the European Council.



According to the Governor, the BNB is ready for the currency exchange process. It has been printing euro banknotes for four years and is now producing test batches of Bulgarian euro coins.

Meanwhile, BNB's Chief Cashier, Stefan Tzvetko, has said that Bulgaria will need 520 tonnes of euro banknotes, equivalent to 25 trucks, for circulation after it joins the eurozone, while the quantity of euro coins will reach 3,600 tons, or 181 trucks. Bulgarian banknotes that will have to be withdrawn from circulation to make room for euro banknotes add up to 642 tonnes, or 32 trucks (which if lined up would stretch across five football fields), while withdrawn Bulgarian coins will amount to 378 trucks full (which would form a column 6.8km long).

There are currently 604 million Bulgarian banknotes in circulation, with a total value of BGN 29.7 billion. The number of Bulgarian coins in circulation is 3.3 billion, with a total value of BGN 615 million.

There will be a period of dual circulation after the euro's adoption. For one month after the euro's introduction, the lev and the euro will both be legal tender. After that, for six months, leva can be exchanged at banks and Bulgarian post offices without any fees.

The BNB has also presented the design for Bulgaria's euro coins, which will feature national symbols: the Madara Horseman (a large early medieval rock relief carved on the Madara Plateau East of Shumen in northeastern Bulgaria) on coins from 1 to 50 cents, Saint John of Rila (the patron Saint of the Bulgarian people) on the €1, and Paisiy Hilendarski (a Bulgarian Orthodox clergyman and a key Bulgarian National Revival figure) on the €2.

If euro adoption goes ahead, Bulgaria will become the 21st member of the eurozone after Croatia, which joined in 2023.

When Bulgarian joined the European Union in 2007, it committed to switching to the euro, as stated in the 2005 EU accession treaty, once the country met all the euro convergence criteria. It joined the Exchange Rate Mechanism II, the precursor to euro adoption, in 2020 (at the same time as Croatia), and originally planned to join in 2024, but persistent inflation and political disagreements have put this back now to 2026.

Report Card: 'A Mixed Year with Evidence of Improvement'

There is a perception that in 2022 and 2023 the currency 'industry' was a little flat, even lacking self-confidence, in the face of the fall out from the pandemic and the huge surge in digital payments as societies rapidly went online. The evidence of 2024 tells a rather different story. Yes, there have been acquisitions, consolidation and closures, but also there have been clear signs of growth, investment and innovation.



So, what should we make of 2024?

New focus on cash

In the last few years central banks and governments have focused on ensuring people and businesses have access to cash. This has continued but with it has come a new interest in safeguarding the acceptance of cash. The Netherlands, Belgium, Norway, Ireland, and Sweden have all, among others, passed or brought forward legislation covering cash access and acceptance, and the European Commission has made proposals about the legal tender status of cash. More US states are now considering legislation too.

All this is part of a new awareness of the threat to cash and a wide range of non-legislative responses. For example, the Bundesbank has started a new National Cash Forum, the Reserve Bank of New Zealand is running a community cash trial, in Spain Denaria has become an activist organisation advocating for cash.

Sectors with mixed fortunes

The fall out of fewer cash transactions is lower use of coins, with knock-on effects for the minting sector which is already beset with enormous over-capacity.

In January we reported lower coin production orders in the US, in March news that the Royal Mint would no longer export coins and in August the decision that the Mint of Finland would close at the start of 2025. A range of stories covered the mixed fortunes of a wide range of mints during the year, with some benefiting directly from these changes.

In the print sector some well-established names reported steps to mitigate against market changes – De La Rue is selling its Authentication business to Crane NXT,

Authentix bought the security business of Meta Materials, SICPA and Koenig & Bauer announced restructuring changes.

On the other hand, IMBISA received its first euro orders, the Bureau of Engraving and Printing announced its investment in its new print facilities, SPMCIL reported strong growth, Orell Füssli reported improved results, China Banknote Printing and Minting reported a busy list of new investments in its businesses, and Crane NXT bought both Opsec and TruTag to enhance its diversification into the authentication business.

Innovation that never rests

It is a reflection of the energy and competitiveness of the sector that the year saw a long list of new products brought to market.

Some were new – the ATKINA printing press range from Koenig & Bauer Banknote Solutions (KBBNS) and De La Rue and Authentix's ASSURE taggant in polymer notes. Not to mention the developments from Bundesdruckerei with its eye-popping IGNIS house note pointing to how banknotes could look in the future.

Others were enhancements of existing products – new variants of Louisenthal's Rolling Star® for threads and now patches and SICPA's SPARK® Flow, Orell Füssli's Escher, CCL Secure's SPARTAN™, G+D's BPS® C Evo®, IQ Structures and Hueck Folien's NanoSwitch®, the BNx platform from KBBNS, and more.

All this leaves banknote issuers with real choice and a wide range of expert companies with whom to work.

More polymer choice

While the transition of every customer is welcome to polymer suppliers, the decision by the Philippines to issue an all-polymer series is a major development.

CCL Secure and De la Rue have long dominated the polymer sector, but they have not been the only producers. China now has its own polymer production plant and will be issuing the first product next January. Spectra Systems launched its polymer product in 2022, although it is not yet sold in the market. This year Q&T High Tec delivered its first polymer substrate for the production of the Vietnamese

currency. Covestro has also launched a polymer substrate.

Launching and selling are two different things but, again, these demonstrate innovation and energy in this industry, giving issuers real choice.

The evolving cash cycle

Cash cycle players have responded to less cash and the need for efficiency. The major ATM players such as Brinks, NCR Atleos and Diebold Nixdorf have pivoted to become network suppliers and service providers for commercial banks. The utility ATM models of the Netherlands and Belgium are being used or investigated elsewhere in the world as well. CIT companies such as Loomis, Prosegur and G4S are part of this story too.

The result is both investment and innovation which is helping safeguard access to cash. Australia's Armaguard take over of Prosegur's business there, and what has happened subsequently in terms of the commercial banks having to step in and prop up what is now a monopoly in cash services, is evidence of what happens when banks, CITs and cash management companies do not get ahead of the challenges of less cash.

Real progress on sustainability

Almost every month we have reported on sustainability initiatives.

Whether composting unfit banknotes with BioBanknote, Crane and Blendpaper creating new paper products from banknote waste, KOMSCO's new initiative to create consumer products, or G+D's Banknote Fiber Extraction technology, real alternatives are now available to central banks for cotton banknote waste disposal.

Recycling of polymer waste is also top of the agenda, with some innovative solutions from De La Rue to support local upcycling into new products.

Orell Füssli has launched its BEES® software for carrying out lifetime assessments of banknote design options. Hueck Folien has achieved eco-neutral products, along with Kurz, CBPM and Louisenthal, who have all made huge strides to ensure holograms and threads are made sustainably.

At the Cash Sustainability Forum in June, the industry heard from a wide range of suppliers and central banks about a clear focus and real achievements on reducing the environmental impact of cash.

Final word

This has been a difficult year for a lot of organisations. There has been sadness at some of the changes. But there are really positive signs of life. An acceptance of the need to safeguard cash, a willingness to adopt new business models and investment in innovation and change.

De La Rue Reports Strong Order Book, Equity Sale Talks Underway

De La Rue has announced its half-year results for the six months ending September 2024. The company reported lower revenues but continued growth in its order book, and strategic development with the proposed sale of its Authentication business to Crane NXT.

Group revenues were down by 10% to £145.1 million. The company achieved an adjusted operating profit of £7.3 million, ahead of guidance but 7.6% lower than the same period last year. On an IFRS basis, first half operating profit was £1.3 million, versus a £3.4 million loss in the first half of 2023/24.

Revenue for the first half in the Currency division was £94.9 million, down by £18.5 million. De La Rue said this reflects the shifting timing of certain customer deliveries, which are now expected in the second half of the fiscal year.

As of 28 September 2024, the order book stood at £251.7 million, up from £239.2 million at the end of FY24. Looking ahead, the company secured further major orders in Q3, pushing the order book to £338 million by November 2024 – the highest level seen in at least five years. There was a significant increase in polymer orders, securing good manufacturing loads into FY26 and beyond.

The Authentication division achieved revenue of £50.2 million, 4.4% higher than in the first half of 2023/24, and stated that an additional multi-year contract for passports has been secured.

It noted the proposed sale of the business to Crane NXT for an enterprise value of £300 million, which was announced in October. The transaction will enable it to pay off a revolving credit facility due for repayment next July and significantly reduce the deficit in its legacy-defined pension benefit scheme, leaving it to focus on its core currency business.

DLR's net debt at the end of the first half was £109.4 million, £20 million higher than in the same period last year due to inventory build-up for second half deliveries and timing of customer deliveries.

Despite the dip in revenue, De La Rue has reiterated its full-year guidance, projecting an adjusted operating profit in the range of £20-30 million. The outlook for the

year's second half is positive, with the currency business expected to convert a substantial portion of the current order book into sales.

De La Rue says this positions it well for a strong second half of the year and provides a robust foundation for growth in FY26.

Talks ongoing for selling a stake

Shortly after the publication of its interim results, De La Rue announced that it is in talks with a consortium to sell up to 40% of its equity, which would value the company at about £245 million. The latest proposal of £1.25 per share is from private equity group Disruptive Capital GP and pension fund manager Pension SuperFund Capital – together, PSFC Entities.

PSFC Entities has indicated that it is not seeking statutory control of the company and confirmed its support for De La Rue's management and current strategy, including disposal of the Authentication division and any on-going discussions with other parties in relation to the company's Currency division.

The proposed partial acquisition by PSFC would require the consent of the Takeover Panel (of the London Stock Exchange) and the approval of De La Rue's shareholders. Under Stock Exchange rules, De La Rue is now considered to be in an 'offer period' and PSFC Entities must, by no later than 9 January 2025, either announce a firm intention to make a partial offer or withdraw.

De La Rue indicated that its announcement was made without the consent of the PSFC Entities as a potential offeror, nor could there be any certainty that any partial offer will be made, nor as to its terms.

According to CEO Clive Vacher, the firm was not gathering expressions of interest, stating that 'we're not in any hurry to do anything strategic regarding a sale, but it's right for us to pursue these discussions to see if it ultimately turns out to be the right thing for our stakeholders'.

G+D Unveils Next Generation BPS Series

Giesecke+Devrient (G+D) has introduced the latest generation of its banknote processing systems – the BSP® C evo, which is an evolution of the BPS C2 and C2 mid-size sorters for commercial cash handlers.

The new BPS C evo product family is designed for use in small and medium cash centres, back offices of commercial banks, and casino count rooms and cages, processing up to 63,000 banknotes per hour. It follows the introduction of the BPS M evo series in 2023, designed for high volume throughput at central bank cash centres (see CN August 2023).



The development of the series has focused on four objectives defined by customer requirements: increased efficiency, security, performance, and reliability in counting, sorting and authenticating banknotes.

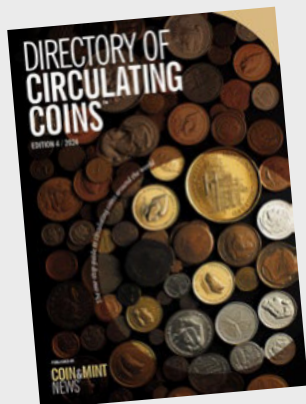
According to G+D, the new Linux-based software platform digitally optimises operations, improves task management, and increases operational efficiency with flexible control options. Performance is improved by a new high-speed processor, an optimised singler, and advanced transport mechanisms that significantly reduce jams and rejections, resulting in higher levels of throughput. Security is enhanced with encrypted communication protocols and intelligent automation processes.

Both versions of the BPS C evo are equipped with enhanced high resolution displays which provide additional information, helping to prevent operating errors and thus improving reliability. Furthermore, the user-friendly and intuitive interface minimises training time and errors, with clear, step-by-step guidance, and optional automated software updates.

'Our improved BPS C evo supports navigating today's fast-paced cash-handling environment, making cash operations more efficient,' said Erwin Leichtmann, G+D's Business Development Director in Banknote Processing at G+D. 'With software-based enhancements and technical innovations, the BPS C evo represents a significant leap in performance'.

Directory of Circulating Coins – Out Now!

The fourth edition of the Directory of Circulating Coins has now been published – the first since 2019.



In the last five years, 69 countries or monetary unions have changed their circulating coinage in some shape or form, out of a total 184 issuers. Some 20 of these have issued new series, with 17 countries discontinuing 40 coins and 20 making design changes (48 coins), whilst 10 countries have made material changes to 21 coins.

The Directory also provides details of the 321 updated coins – both those that have already occurred, including the introduction of new coins and discontinuation of those already in circulation, and those that are planned and have not yet been put into circulation – of which there are 98 coins. This includes those planning to update their coin obverse with a new monarch, such as King Charles III or King Frederik X. In the case of the former, four countries are progressively releasing updated coins featuring King Charles III, with a further four announcing the updates but yet to begin issuance, and at least two have announced that they plan to replacement of the monarch's effigy with another design.

Some 21 countries are planning to change at least one element of their circulation coinage in the near future. Another common proposed change, in addition to the above, is the introduction of coin rounding next year, notably in Estonia, the Falkland Islands, and Lithuania.

A further five countries and monetary unions have introduced new currencies, with Curaçao and Sint Maarten and Bulgaria set to changeover to the Caribbean guilder and euro, respectively, in the next couple of years.

With nearly 200 pages the Directory is the only complete guide to every current circulating coin in the world, providing up-to-date information, specification and images in one concise volume.

For more information, visit the Currency News™ e-store – <https://estore.reconnaissance.net/>

News in Brief

■ Korea Develops New Solutions from Old Banknotes

The Korea Minting, Security Printing & ID Card Operating Corporation (KOMSCO) held a 'Currency By-Product Utilisation Seminar' earlier this month to launch its new venture to reuse currency by-products slated for disposal – both end-of-life banknotes and waste from production. Around 500 tonnes are generated annually, of which 90% is incinerated.

KOMSCO has been researching eco-friendly recycling methods for this waste since the beginning of the year, and at the seminar showcased some of the products it has come up with, including money calendars, money cushions, and money pens. It plans to sell these goods via both B2B and B2C channels.

The seminar also featured a presentation on the Money Dream campaign launched by Hana Bank, one of Korea's largest banks, to create products such as pillows, cushions and 'money seeds' from recycled banknotes (see CN January 2023). The objective was to increase its digital presence and give customers 'wealth energy' by handing out the eco-friendly pillows, the stuffing of which was made with banknote waste. The campaign received global acclaim and multiple design and ESG awards. On KOMSCO's new initiative, its president, Sung Changhoon, stated: 'our corporation aims to go beyond manufacturing currency to establish a virtuous cycle structure by creating new added value from discarded banknotes. We will release a variety of products utilising currency by-products to contribute to the revitalisation of the circular economy.'

■ Fire at Plating Plant in Germany

A large fire broke out at Saxonia EuroCoin facility in Halsbrücke, Germany, on 7 December, with the cause of the incident at the coin blank manufacturer unknown. The affected area of the facility was in the galvanics department. The company was bought back by Freiburger Eurometall from the Mint of Finland at the start of this year.

According to Freiburger, no-one was hurt and thanks to extensive capacity

over three production sites, the impact on customers will be limited.

■ Denmark Opens Banknote Exchanges

Danmarks Nationalbank and payment institution FOREX have opened three banknote exchange points for citizens to swap notes that are due to become invalid on 31 May 2025, with the points remaining open for exchange until 31 May 2026.

As noted in the interview with Niels Kass, Chief Cashier of the Bank, last month, the notes that can be exchanged include the 1,000 krona from the current series and all banknotes from series predating 2009, more than 70% of which have already been exchanged since the announcement of their invalidation was made in November 2023.

Cash exchange via the exchange points is covered by current anti-money laundering regulations and will therefore have similar documentation requirements, including a written declaration and the presentation of valid photo ID.

■ Tenders, Contracts and MOUs

■ The Bank of Uganda has invited sealed bids for eligible companies to provide pre- and post-mint acceptance testing services for Ugandan coins, and pre-print and post-print acceptance testing services for the country's banknotes. The contracts for each will last five years. The deadline is 17 January 2025.

■ The US Bureau of Engraving and Printing has issued a Request for Information (RFI) for testing and evaluating technologies and/or materials with potential application in device-assisted, user-interpreted features on future generations of US currency. Proposed features should be novel and not otherwise in commercial use or the public domain. Examples of devices include, but are not limited to optical filters, magnifiers, low-cost laser pointers, LED flashlights, magnets, and cell phones.

The deadline for submissions is 9 October 2025.

■ The Central Bank of Libya announced that it has contracted De La Rue to print 30 billion dinars (worth \$6.25 billion) in order to 'solve the liquidity shortage problem' at the country's commercial banks.

Central Banks and Cash Round-Up

In this month's round-up covering cash information in central bank annual reports, we look at Russia, in the throes of its 'special military operation', and its neighbour f Ukraine, the target of that operation.

■ National Bank of Ukraine (NBU)

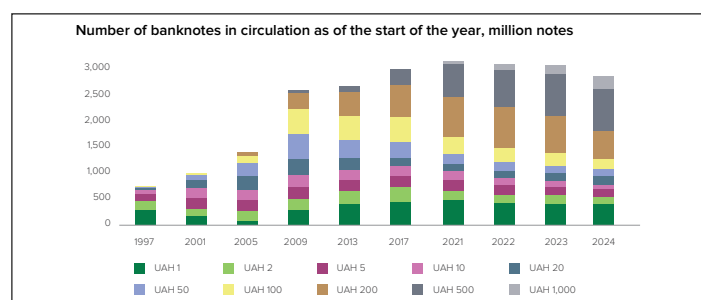
Andriy Pyshnyy – Governor of the NBU, prefaced the Annual Report with the statement that '2023 demonstrated the incredible resilience and adaptability of the Ukrainian economy and financial sector. Despite the war, Ukraine managed to move from a survival strategy to a recovery strategy, exceeding all expectations.'

During the year, the NBU fully implemented the POWER BANKING project, with emergency protocols ensuring the uninterrupted operation of banks in the event of blackouts, cyber attacks, or unavailability of communication channels. Its effectiveness was proven in March 2024 during Russia's intensive missile attacks on Ukraine's critical infrastructure.

Cash in circulation: as of 1 January 2024, UAH 764.4 billion worth of banknotes and coins were circulating within Ukraine. This included over 2.7 billion banknotes valued at UAH 757.5 billion, 14.5 billion coins worth UAH 6.7 billion, and 24.3 million commemorative and investment coins valued at UAH 151.5 million.

In 2023, cash circulation trends shifted. The number of banknotes in circulation decreased by 206.3 million (7.05%), while the number of coins increased by 339.5 million (2.4%). The 500 hryvnia banknote and 10 kopiika coin were the most circulated denominations.

Meanwhile, the NBU continued withdrawing older currency, including small-denomination coins (1, 2, 5, and 25 kopiika) and certain hryvnia banknotes and coins minted before 2018.



Cash Processing: improving cash quality remained a priority. BPS M7s processed 807.4 million banknotes in 2023, marking a 305.1 million increase from 2022. Among these, 239.2 million banknotes were deemed fit for continued use, while 529.8 million worn-out notes were shredded. Banks also contributed by transferring 701.1 million fit banknotes to NBU's circulation units, doubling the previous year's numbers.

In 2023, the NBU and authorised banks withdrew 610.97 million worn-out banknotes with a value of UAH 109.4 billion, 1.8 times more than the number in 2022 (343.3 million banknotes with a value of UAH 47.4 billion).

Counterfeiting: levels were minimal in 2023. For the new design banknotes, the counterfeit ratio stood at 0.4 ppm. Throughout the year, the NBU withdrew 5,657 counterfeit banknotes worth UAH 1.66 billion. While this marked a 6% increase in counterfeit volume from 2022, their nominal value decreased by 10%.

Among the counterfeit foreign currency banknotes withdrawn from circulation in 2023, US dollars and euros were the most common (97% and 3% respectively).

Numismatics: the NBU issued 34 new numismatic products, amounting to 1,507,500 units – a 53% increase over 2022. A notable release was the commemorative 20 hryvnia banknote 'We

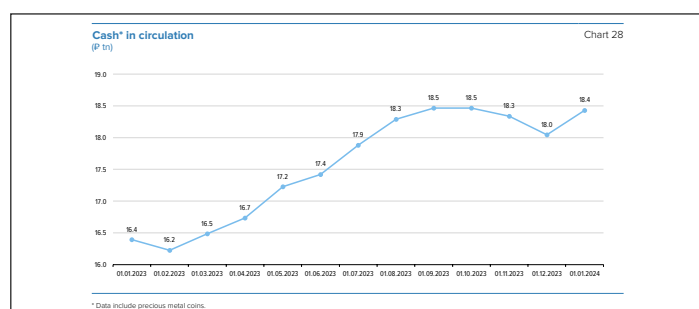
will not forget! We will not forgive!', marking the first anniversary of the full-scale invasion of the country by Russia.

The NBU also saw a 2.2-fold increase in revenue from numismatic sales, generating UAH 660.6 million. Almost 2 million units were sold domestically and internationally, reflecting strong demand for Ukrainian coins and souvenirs.

■ Bank of Russia (BoR)

Cash in circulation: the number of banknotes in circulation increased by 0.8 billion in 2023, and the number of coins (excluding precious metal coins) by 0.9 billion. In 2023, RUB 2.038 billion in cash was issued, RUB 2.034 billion in banknotes and RUB 2 billion in coins.

At the start of 2024, the value of banknotes and coins in circulation, including precious metal coins, was RUB 18.4 billion, including 8.2 billion banknotes worth RUB 18.3 billion, 72.2 billion coins worth RUB 125.9 million, and precious metal coins worth RUB 0.5 billion. By value, banknotes made up 99.3% of CIC and coins 0.7%. By volume, the figures were 10.2% and 89.8% respectively.



Coin Platform: development continued of the Bank of Russia Coin Platform, an information service supporting direct communication between credit institutions (CIs) regarding coin delivery and receipt. In 2023, the number of regions where the Coin Platform operated increased from 21 to 26, and the number of participants increased from 277 to 302. A Coin Week event was held to return coins held by households, and over 20 million coins worth RUB 3 million were collected as a result.

To ensure resilient cash circulation amid sanction pressures, the BoR continued to equip its divisions with domestic coin handling machines, banknote and coin counters, and vacuum packaging machines.

Counterfeiting: levels remained low with a ratio of 2 ppm (half that of 2022). 12,425 counterfeit coins and banknotes were detected. Counterfeit 5,000 ruble notes numbered 8,856 (71.3% of the total, in share terms up by 9.3%); 2,000 ruble banknotes 671 (5.4%, down by 13.6%), and 1,000 ruble banknotes 2,438 (19.6%, up by 3.7%).

Counterfeits detected by CIs accounted for 39.6% of the total (vs 38.6% in 2022). In 2023, BoR divisions and CIs detected 1,438 foreign counterfeits (vs 1,811 in 2022).

The BoR upgraded the 5,000 ruble banknote in 2023, giving it a new design and improved security features.

Sustainability: a waste sorting practice was used to accumulate recyclables (paper, polyethylene, metals, etc.) to improve waste management. In 2023, waste from destroying disinfected and worn-out banknotes accounted for 43.7% of their total weight. Metal waste from the destruction of defective coins was fully recycled.

Federal Reserve – A Generational Investment for the Future

At a time when ‘less cash’ is on the minds of many central banks and organisations operating in the cash industry, the Federal Reserve is making major investments in its cash operations, infrastructure and the currency itself.

Currency News™ spoke to Mark Gould, Chief Payments Executive for Federal Reserve Financial Services, to explore what is being done and why.



Q: Tell us about your background and role within the Federal Reserve.

A: I've had the opportunity to do a lot of different things inside the Fed over the past 33 years, and I describe it as having multiple occupations within the span of one career. The Fed really encourages this kind of career development, and that combined with compelling work and an important mission, makes me feel fortunate to have discovered it early in my career.

I won't list my resumé for you, but I will say that the bulk of my career has been focused on cash, payments, and technology, at both a local and national scale. I'm currently the Chief Payments Executive for the Federal Reserve overseeing our full portfolio of cash and payment services in Federal Reserve Financial Services (FRFS). Most recently before that I ran our national cash business, was Chief Operating Officer for the San Francisco Bank, and had a short stint as acting president during a gap between CEOs.

Q: Can you provide a brief overview of the Federal Reserve regarding cash, and where operational responsibilities lie?

A: Every central bank is a bit different in terms of how these functions are carried out in the cash cycle. In the US, the Federal Reserve Board of Governors is the issuing authority for banknotes and the 12 regional

Reserve Banks handle the process of distribution, authentication and destruction. My group in FRFS provides the common software systems, processing and sensor technology, and vault automation for our 28 cash centers across the country.

Our mission is to meet public demand for US currency, both during normal times and periods of stress. Once issued into circulation, commercial banks and cash in transit (CIT) firms work with their customers to distribute currency and meet consumer and business demand. Then, at the end of the cycle, they send unfit banknotes back to the Federal Reserve for destruction. We process around 30 billion banknotes a year in our cash centers and maintain ample inventories to meet unusual spikes in demand when they occur.

Q: What are the trends for cash versus other forms of payment?

A: Every year, we perform a Diary of Consumer Payment Choice study to monitor how consumer behaviors are changing over time, ultimately helping to inform our plans for the future. I always look forward to the results, and it's possible to nerd out a bit on the data. Our most recent study showed several compelling aspects from my perspective.

First, the number of cash transactions consumers are making each month had been declining for a number of years, but more recently has remained stable for the past four years or so. I've found that interesting because it suggests that — at least for some period of time — we may have found a 'floor' of sorts for cash usage. Additionally, cash remains the third-most used payment instrument. I found that to be a good reminder that many people in the US remain very reliant on cash to meet their needs.

Finally, we can see that the total number of payments made by the average consumer is steadily rising. This is a prediction I've been making for a while, so I'm kind of relieved to see that it's happening. I think one important driver of this is the change in shopping behaviors, with fewer weekly trips to the grocery store, and more on-demand purchases that are embedded in our phone apps.

I'm going to be interested in where this goes, and we plan to continue publishing these annual updates for everyone to learn along with us.

Q: What is the level of cash in circulation in the US (and outside of it), and the long-term trends?

A: Today, there's approximately \$2.3 trillion in US currency in circulation (CIC), and demand has been quite resilient for a very long time. Roughly speaking, we've seen year-over-year increases in CIC that are in the low- to mid-single-digit percentages, with episodic spikes related to natural disasters, geopolitical events or economic crises. We saw larger demand spikes in the US related to things like Y2K, the global financial crisis and most recently the global pandemic.

More recently, we've seen that growth slow down a bit. Our research indicates US households roughly doubled their holdings of cash during the pandemic, and those holdings have started to come down, but not yet to pre-pandemic levels. I get asked all the time about what will happen in the future, and of course that's difficult to predict. But, looking historically as other means of payment have grown in popularity, we have not seen an associated drop in demand for currency, even as we see it being used less for transactions.

Q: At the recent Global Currency Forum, you referred to a generational investment in the US cash cycle. Does this reflect a need for renewal, a constant drive for efficiency or early precautions against a changing cash environment?

A: The overarching factor driving our wave of investment right now is preparedness for the future, whatever version of the future emerges.

First, we're upgrading our high-speed processing systems that handle authentication and fitness sorting of US banknotes through the multiyear, multiphase NextGen Program.

The goal is to leverage new technology to equip ourselves with the best tools to authenticate US banknotes for the next several decades in the most efficient manner possible. I joke that our current fleet of machines started their career about the same time I did, which means our existing machines are around 30 years old. Technology has advanced so much in that time that now is the right time to deploy new machines, along with new sensors that are more capable than anything that exists today.

The new sensors follow the common detector interface (CDI2) standard that we developed in partnership with the European Central Bank.

Second, we're augmenting our vault capacity in key markets to ensure we have sufficient inventories to meet in demand for US currency, whatever those may be. The reality is that as the amount of currency in circulation has grown, a demand spike of

10% today, for example, is much larger than a 10% spike 20 years ago.

Third, there's work underway to build a new Bureau of Engraving and Printing (BEP) facility in the Washington, DC area to streamline production, keep building support costs low and meet physical security standards.

The US Currency Program is also working now to develop the next family of US banknotes. With banknote design, the goal is to stay ahead of counterfeiters, knowing that bad actors are regularly upping their game with advanced and newly available technology. The new notes will have new and improved security features that will require new types of processes and equipment to produce.

Q: *Does the Cash Visibility initiative strengthen efficiencies in the cash space? And what is the progress there?*

A: Cash Visibility (CV) is a multi-year, multi-phase joint industry initiative aimed at bringing greater transparency and efficiency to cash supply chain logistics by developing a framework to identify, track and share data about cash packages as they move between cash supply chain organizations. This greater visibility of packaged contents and data-sharing capabilities brings improved resiliency, as well as opportunities for future automation, such as expedited reporting and leveraging data for enhanced efficiencies.

Using supply chain logistics standards and concepts, the Federal Reserve Banks, cash supply chain partners and GS1 US developed CV data standards that will incorporate the use of scanning technologies with cash shipments to enable significant improvements in cash handling.

The FedCash E-Manifest Service is one outcome — it enables financial institutions and armored carriers working directly with the Federal Reserve to electronically process currency deposits and orders at Fed docks using industry-supported data standards. This means accelerated dock exchanges with armored carriers using application programming interface (API) technology to validate data exchanges and eliminate paper-based processes.

By reducing manual data entry and dependency on paper deposit tickets and manifests by replacing them with electronic manifest, we're not only 'going green' but also seeing more efficient reconciliation, improving controls and loss prevention.

Q: *What is your team doing to prepare for the new banknote series?*

A: The BEP is leading this work, in partnership with the Federal Reserve Board of Governors, the Secret Service and our FedCash team within FRFS.

I'll speak only to my team's role in this process, which is to ensure that any new design is prepared to be processed and authenticated efficiently on our fleet of high-speed processing systems.

For those of us in this business, I suspect I'm not alone in also having an appreciation for banknote designs in other parts of the world that, like our own, reflect a combination of history, art, science and technology, that all come together. This makes cash unique among payment methods, and it's something I will always find fascinating.

Q: *Given the overall decline in cash usage, why all the investment anyway?*

A: While our research shows that consumers are using cash less for transactional purposes, demand for currency remains robust overall. And, as I noted earlier, cash remains the number three method of payment at the point of sale. That tells me that consumers see ongoing value in cash not only as a payment method, but also as a store of value and a contingency payment method. Who among us hasn't seen a sign at the cash register saying 'Cash only today, our computer system is down'?

We also need to be prepared not only for normal day-to-day demand, but also for unexpected spikes in demand that could occur at any time. That's the reason that we, and many other central banks, have vaults that store more currency than we expect to need to meet normal demand. The pandemic presented us with the largest and most sustained spike in demand for currency that we have seen in recent history.

Q: *Looking into your crystal ball, where do you think cash in the US will be in 10 years' time?*

A: Given the role of Federal Reserve Financial Services, I tend to think about the payment ecosystem holistically. More options exist than ever before, including last year's launch of the FedNow® Service for instant payments.

But the introduction of airplanes didn't make automobiles obsolete. I fly across the country, drive to the grocery store, and walk to my next-door neighbor's. Each method of transportation is right for each particular use case — I view payments very much the same way. We have a range of payment choices available, and consumers and businesses will choose the optimal method for the use case they have in mind.

Personally, my own belief is that the total number of payments made in the US will continue to increase. I believe that cash will continue to be a trustworthy, reliable and secure solution for many use cases for many years to come.

Koenig & Bauer Restructures

Koenig & Bauer (K&B) has announced the simplification of its structure into two new segments, Paper & Packaging Sheetfed Systems and Special & New Technologies in light of what it calls a 'persistently challenging market environment'.

According to CEO Dr Andreas Pleßke, 'the Group's top priority is to align itself with its customers and markets and to streamline decision-making paths within its business units'.

The previous three divisions of Sheetfed, Digital & Webfed, and Special will be consolidated into two new segments: Paper & Packaging Sheetfed Systems (P&P), and Special & New Technologies (S&NT). Koenig & Bauer Banknote Solutions, part of the Special segment, will join S&NT.

In addition to banknote and security printing presses, the S&NT business includes special presses for metal, glass and hollow container printing, and the remaining activities of what had been the stubbornly loss-making Digital & Webfed division.

K&B said that inspection systems and protection technologies would be spun-off into a separate Vision & Protection business unit.

As a result of the revamp — with various responsibilities devolved to the two new units — the role of COO has been eliminated.

Alongside the restructuring, K&B announced that Christian Steinmaßl, who has been Executive Vice President at rival press manufacturer Heidelberg's packaging division for just over two years, will join the group and will take on a key role in the new S&NT segment, holding responsibility for production, the Vision & Protection and Kyana (formerly Digital Unit) business units and operational shared services within the group.

In its Q3 update K&B flagged that operating earnings for the full year will come in at the lower end of the forecasted range of €25-€40 million, but it has a record order backlog of over €1 billion (including further orders for KBBNS from the Bureau of Engraving and Printing) and expects to achieve its revenue target of around €1.3 billion.

Are Note Issuers Ahead of Counterfeiters: Update on Counterfeiting Data

■ By Antti Heinonen, External advisor, Bank of Finland, former Director, Banknotes of the ECB

Kerre Corbin regularly addresses counterfeiting from different angles in her Counterfeit Corner in Currency News™. Against that background it is worth looking at recent developments in counterfeiting data.

It's an old saying that central banks should be at least one step ahead of counterfeiters. A banknote is just a piece of paper, and its value depends on the trust in the issuer, one essential part of that being the note's security. However, soon after paper money was invented the first counterfeiters were discovered. Since then, an unending race between the issuing authorities and perpetrators has been going on.

As a first measure, the use of watermarked paper, which was not readily available to the public, was adopted. The printers, for their part, tried to prevent imitations by using different typefaces, decorative elements, reliefs, seals and vignettes. Intaglio printing was also introduced early on as an alternative to the other main printing method, letterpress. Thus, counterfeiting was deterred from the beginning by means of both the substrate choice and printing technique.

For the most part this race against counterfeiters has required only gradual developments in banknote security. However, on a few occasions it has required a paradigm change. One was the change required after the development of photography in the 19th century, and more recently in 1980s following the development of first colour copiers, and later digital printers and image editing software.

Since then, continuous developments in digital reproduction technology have required serious efforts from the banknote community to bring about new innovations in banknote security. Nevertheless, particularly in the late 1990s and early 2000s, several issuers experienced sudden shocks in counterfeiting rates. Therefore, it is appropriate to raise the question, are the note issuers still ahead of counterfeiters?

The published data don't, unfortunately, allow a complete overview of all currencies. The majority of central banks are shy on public information on counterfeiting. But data were available on 59 currencies from all continents for a number of years, which should give a sufficient coverage of the situation and its development.¹

Defining metrics on counterfeiting

To answer the question about the rate of counterfeiting, a metric is needed.

The first attempts to find another indicator than just the number of counterfeit notes taken out of circulation or their face value were made in late 1990s. The US General Accounting Office examined the nature of counterfeiting of US currency abroad and concluded that 'the total level of counterfeit-currency detections – \$208.7 million in fiscal year 1994 – represented less than one one-thousandth of US currency in circulation'.²

In a later report on the same topic, the US Treasury Department summarised the discussions with the banks abroad as follows: '... the figures for the incidence of counterfeiting were remarkably consistent: Most banks detect no more than about 1 counterfeit note for every 10,000 notes they handle'. Later the report

concluded that 'the upper bound is estimated to be about \$150 million, or about 3 in 10,000 notes'.³

The US considerations encouraged central banks to take an example from chemistry, where parts per million (ppm) is used to express the concentration of a substance in a mixture. Accordingly, the Reserve Bank of Australia, Swiss National Bank and Bank of Canada introduced in their annual reports in early 2000s ppm (passed counterfeit notes per million banknotes in circulation) to describe the level of note counterfeiting.

Over the course of time, the majority of central banks which publish data on counterfeiting have begun using ppm as a metric. Some central banks have even set a benchmark under which ppm should remain, such as the Bank of Canada which uses 30 as benchmark and the South African Reserve Bank 12 ppm.⁴ Bank Negara Malaysia correspondingly refers to the international counterfeiting benchmark index of 15 ppm, which is referred to by the Central Bank of Sri Lanka as the global average.⁵

So, ppm seems to have reached a certain consensus among central banks, even though it's not optimal in comparing a flow variable (number of counterfeit notes found in circulation during a year) to a stock variable (number of banknotes in circulation at the end of the year or their monthly average). Anyway, ppm gives a good understanding of counterfeiting trends regarding a particular currency.

However, no strong conclusions can be drawn from comparisons between currencies, because the speed at which counterfeit notes are identified varies greatly from country to country.

In some countries banknotes are subject to constant automatic authentication, often even at the retail end and no later than in the commercial sorting centers. Consequently, counterfeit notes are rapidly found and have no time to circulate, unlike other countries, in which banknotes circulate for long periods without being subject to automatic authentication. Therefore, counterfeit notes may change hands several times before being identified.

Furthermore, counterfeit notes are not evenly distributed between various denominations, and it would be hence useful to count ppm per denomination. For example, when the Bank of Canada confronted a major counterfeiting attack in early 2000s, it reported that 'at the peak in 2004, counterfeiting of the \$10 and \$20 notes reached 1,292 and 601 parts per million, respectively'.⁶

Recent developments in counterfeiting data

After these introductory remarks and with the aforementioned caveats in mind, it is time to look at recent developments in counterfeiting data. In Figure 1 the ppm values of 59 currencies are presented in 2015 and 2023. In a very few instances the figures refer to the financial year deviating from the calendar year or the 2023 data have not yet been published. In these cases, the latest annual data is used.

1 Hopefully, this article would encourage a few additional central banks to publish data on counterfeiting to make the sample more comprehensive in the future.

2 Counterfeit U.S. Currency Abroad: Issues and U.S. Deterrence Efforts, 1996

3 The use and counterfeiting of US currency abroad, January 2000 p. 49 and 65.

4 Annual Report of the Bank of Canada 2023 p.39 and Annual Report of South African Reserve Bank 2023/24 p. 22.

5 Annual Report 2022 of the Bank Negara Malaysia p. 82 and Annual Report 2023 of the Central Bank of Sri Lanka p. 110.

6 Moxley, Jill, Meubus, Helen, and Brown, Maura: The Canadian Journey: An Odyssey into the Complex World of Bank Note Production, Bank of Canada Review, Autumn 2007, p. 52. As a response to the high ppm values the Bank of Canada adopted a comprehensive new strategy, that provided with very positive results.

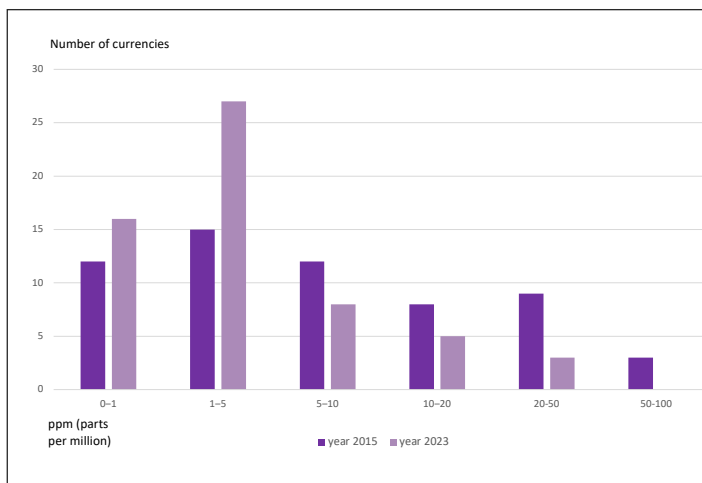


Fig 1: Banknote counterfeiting of 59 currencies in 2015 and 2023.

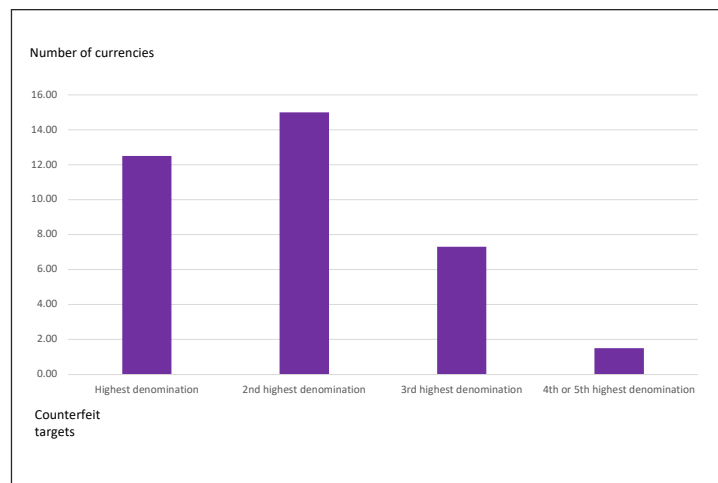


Fig 2: Denominations targeted by counterfeiters (most recent data)

The first observation about Fig 1 is that the ppm values are generally very low in comparison to the early 2000s, when a few currencies had ppm values counted in hundreds. Therefore, the recent efforts of the industry have been successful.

The second observation is that, even after 2015, ppm values have significantly decreased. The reason – besides the fact that many central banks have introduced a new series or upgrade since 2015 – might be the impact of Covid-19 pandemic on payment habits. The pandemic decreased the use of banknotes in transactions, even though the value of banknotes in circulation increased and is still increasing in the case of a great majority of currencies. It is evident that the decreasing use of banknotes at the point-of-sale makes also the use of counterfeits more demanding and organised crime has focused more on digital hacks and scams.

The third observation about Fig 1 is that the ppm value in 2023 was lower than 5 in more than 70% of the currencies in the sample. One may therefore ask the question, whether the picture would significantly change if the rest of the close to 90 currencies not included were part of the study.

Not necessarily. The reason that only 59 central banks publish their counterfeit data is not that all the other note issuers have high ppm values. The reason might be a political one in some cases, but the main reason is that many central banks publish very little data on flow variables related to banknotes.

The conclusion is confirmed by the replies of the participants at a banknote seminar organised by the European Central Bank several years ago. More than 60% of the ppm values of those 12 central banks, which are not included in the sample of Fig 1, were less than 5 in 2015.

The denominations targeted by counterfeiters

Most central banks which publish data on counterfeits also provide the distribution of counterfeits by denomination. These data allow us to look at the patterns of counterfeiting regarding various currencies.

39 central banks publish data on denominations targeted mostly by the counterfeiters. Not all of them provide it every year, but if it is provided in one of the years 2021, 2022 or 2023, the latest figure is included in the study. In case none of the denominations has a majority share of counterfeits then the two mostly counterfeited denominations are considered.

In all cases the share of one or two denominations is sufficient to cover at least 50% of the annual counterfeits. Figure 2 describes the result of this study.

It is interesting to note that the most counterfeited denominations vary significantly across currencies. The result evidently depends on which denomination is mostly used in transactions. It explains that counterfeiters are not only focusing on the reward which they receive when successful in using the counterfeit but also on how easy it is to use.

Therefore, the most counterfeited denomination is often the one which is most popular in payments and explains, for example, why year after year the mostly counterfeited euro banknote denominations are the €20 and €50.

Having the counterfeit data from the years 2015–2023 also provides the opportunity to study how the target denomination of counterfeiting has developed through the years. In the case of about two-thirds of the currencies, the counterfeit target has climbed in the denomination hierarchy over the course of time. Accordingly, the most targeted denomination may have been the third highest denomination in 2015 and is currently the highest or second highest denomination.

That also describes the reasoning of counterfeiters that the target denomination could be increased when a higher denomination becomes more popular in transactions.

Conclusions

The very low ppm values indicate that counterfeiting of most currencies is very casual. The higher ppm figures are often related to the involvement of organised crime groups in counterfeiting and/or the usage of the currency outside national borders as a parallel currency. The latter makes them more interesting to counterfeiters. To reach the current situation has required from the central banks a regular upgrading of the security features of their notes, as well as training and education of professional cash handlers and general public.

Furthermore, law enforcement has been encouraged to allocate resources for preventing and prosecuting counterfeiters. So, the social costs of counterfeiting include also other elements than just the direct loss suffered by households and businesses to counterfeiters.

Fig 1 indicates that the banknote community has recently been successful in preventing large-scale counterfeiting with their substrate innovations and with the development of groundbreaking security features, structures, devices and inks.

However, the race with the perpetrators has not ended, and the banknote community should remain vigilant.

Headlines of 2024: That Was the Year That Was...

■ January

Levels of euro counterfeiting remain low in 2023; Currency News™ comes of age; what goes round comes round in the minting industry, SPMCIL records strong growth; Kosovo cash regulation could derail relations with Serbia; US coin production falls; 2024 – a year of protecting cash as countries step in to legislate; CPBM undergoes transformation from information technology to intelligence technology; PLUS... *Viewpoint* – Looking Back, Looking Forward – What Does 2024 Have in Store? Industry leaders give their predictions; *Special Report* – Gifting Money – a personal experience from China.

■ February

Germany launches the National Cash Forum to stabilise the cash cycle; Spain's new banknote printer IMBISA secures first euro orders; increase in orders for notes (and coins) for US Federal Reserve for 2024; Authentix and De La Rue launch ASSURE – a robust covert authentication solution for polymer; Philippines ups orders for polymer notes; a positive picture for cash companies in 2023; logistics secured for new French printworks; GLORY consolidates cash tech companies; Brinks expands into ATMs; award for Philippines coin deposit programme; intaglio platemaking for the future from Jura and OeBS; Koenig & Bauer Banknote Solutions launches next generation AKTINA production platform; registered threads from Louisenthal – predictable placement dynamics; PLUS... *On the Record* – Ancient and Modern – Using Kazakhstan's Unique Cultural Heritage to Create Pioneering New Banknote Series; *Special Report* – Sustainability – Essential to Banknote Design.

■ March

Don't Cry for Milei, Argentina – an analysis of the prospects for Argentina's currency following the election of a new president; more US states consider legislation to protect cash acceptance; BEP pushes ahead with modernisation, expansion and new dollar series; Crane to acquire OpSec; more positive news from cash companies; French mint jumps the gun on new euro coin designs; Royal Canadian Mint tracks integrity of gold; De La Rue achieves climate leadership status; Biobanknote and Peruvian central bank turn cash into compost; PLUS... *On the Record* – the IHMA and the SIR – the next frontier in security image registration.

■ April

Aligning euro banknote policies with Paris Agreement targets; Royal Mint pulls out of export business for circulating coins; 2023 proves record year for G+D; Q&T High-Tec – a new force in Vietnam for polymer production; Spectra develops world's first certified circular polymer substrate; Fed deep dives into data to report on demand for US banknotes post-COVID; Koenig & Bauer and GSSC partner for new print security features; Estonia extends coin exchange pilot; new service from Clip Money; Glory merger in the US; polymer banknotes outperform paper on strength and security, says Egyptian anti-forgery expert; biobased carbon content drives green substrate solutions from Louisenthal; CBPM's new integrated process and packaging line – less manual, more intelligent; another new currency for Zimbabwe; PLUS... *On the Record* – IACA Celebrates 20 Years as the Only Global Association for All Cash Stakeholders; *Comment* – New Banknote Series – Challenging the Convention; *Special Report* – from Secrecy to Transparency – the Evolution of Banknote Communications.

■ May

Cash Processing Solutions (CPS) returns after a year's absence, launches new green strategy; Glory returns to profit; future of Meta Materials in doubt; Crane NXT restructures currency business; sales of BPS X9 hit 100 milestone; US Mint to drop Mutilated Coin Program; a mixed bag of results for mints – growth in Poland, French mint recovers, bullion decline impacts Canadian mint; is De La Rue up for sale?; IQ Structures and Hueck Folien launch Nanoswitch™; a new polymer substrate from Covestro enters the market; Secure Innovation launched Remote Planet for remote management of critical assets; DENARIA – a new body in Spain ensuring fair access to cash; Bundesdruckerei's house note of the future – out of darkness comes fire; PLUS... *Comment* – Challenging Manufacturing 'Truth' – Is Small Beautiful?; *On the Record* – Crane Celebrates 20 Years of MOTION®; *Special Report* – Kusters' latest insights into recycling end-of-life banknotes.

■ June

Bank of Mexico gets to grips with micro-organisms on banknotes as part of a three-part study; Q&T secures further contract for Vietnamese currency; Royal Canadian Mint among Canada's Best Corporate

Citizens – again; 'BNSx' platform aims to optimise value-creation at Koenig & Bauer Banknote Solutions; Jamaica turns away foreign coins; European ATM attacks – numbers up, losses down; New Zealand marks 25 years of polymer banknotes; Banque de France working hard on end-to-end cash sustainability; Enterprise Cash Management unveils ECM™ – Centralised Control for enhanced cash cycle analytics; 'Shake, Rattle and Roll' – Diametryx's innovative colour change particles; a new approach for detecting counterfeiting coins by image mining and machine learning; PLUS... *Comment* – A Day Late and a Dollar Short? Is Dollarisation a Cure-all for Unstable, Hyper-Inflationary Nations?; *Special Report* – Reasons to Upgrade or Introduce a New Series.

■ July

Authentix buys Meta Materials' authentication business; ATM network under investigation in Belgium; Royal Mint goes into loss as demand for circulating coins plummets; De La Rue results in line with expectations; FNMT builds new data centre; interim results – encouraging signs from Orell Füssli and Prosecur Cash; Spectra Systems reports another successful year; security fibres – it's the little things that count; the birth of paper money – the 1,000th anniversary of the jiaozi; G+D banknote collection celebrates 2024 sporting events; New York Fed plans new cash centre; Fed's Currency Education Program focuses on Latin America; how regional recycling solutions support global success; from cash to conservation – researchers investigate depiction of flora and fauna on banknotes; PLUS... *Comment* – Cash Doesn't Crash; *Case Study* – New Zealand's RBNZ Community Cash Services Trial.

■ August

Grand reveal for new Caribbean guilder; millions of UK coins shelved in warehouses; Mint of Finland to close in 2025; Heimerle+Meule rebrands as HM Precious Metals; Kenya selects G+D as new banknote printer; Meta Materials files for bankruptcy; Pakistan to remerge two state printers; Somalia calls for restitution of currency; the evolution of Asian state security printers – from currency makers to digital authentication providers; Orell Füssli's Escher® – advancing digital 3D portrait design; PLUS... *On the Record* – Authentix Positioned as a Multi Service Solutions Provider for Currency and Beyond; *Comment* – A Perfect Storm for Mints.

■ September

Changes in cash services in Sweden and Switzerland; Hueck Folien takes major strides toward eco-neutral production; US

Mutilated Coin Program finally abolished; Belgium seeks more coin circulation; Royal Mint opens new e-waste recovery plant; stopping real equipment from making fake documents; Intergraf's sustainability initiatives; how SPARTAN™ polymer banknotes solve the 'change' management challenge; 'I'm Your Venus – new version of RollingStar® from Louisenthal; PLUS... *Comment* – Change is the Only Constant; *Special Report* – Update on the Global Demand for Banknotes.

■ October

De La Rue sale of authentication business to Crane secures finances and future; Estonia drops lowest denomination coins; all change at the Royal Australian Mint; Sesami acquires self-service solutions provider Consillion; Honeywell to spin out authentication business; SICPA lays off staff as adapts to new market conditions; RBI plans to revamp India's currency management infrastructure; CIT monopoly in New Zealand risks repeat of problems in Australia; Orell Füssli's new environmental evaluation software – BEES®; CBPM's green alternatives for thread production; from high quality banknotes to high quality packaging with G+D's Banknote Fiber Extractor®; PLUS... *On the Record* – Brighter Future for De La Rue as Currency Goes it Alone; *Special Report* – Will the Swan Really Sing? China steps in as Argentinean printer faces uncertain future.

■ November

IHMA becomes IOTA as it embraces new security features ecosystem; change of ownership at Currency Research; Helsinki Calling' – Royal Dutch Mint to produce Finnish coins; production up at SPMCIL; Crane NXT acquires TruTag assets; GardaWorld becomes Canada's largest private buyout; Ukraine to de-russify coins; new technology for CBPMs' platemaking; how to improve cash logistics efficiency, the G+D way; SICPA flows up stream with latest version of SPARK®; new banknotes – a game changer for Pakistan's Economy? PLUS... *Comment* – From Banknotes to Brand Protection – Not for the Faint Hearted; *Special Report* – How the RCM Manages Canada's Circulation Coins in Real-Time; *On the Record* – Denmark's Currency Evolution – Balancing Innovation with Protection in the Modern Era.

■ December

Bulgaria gets ready for the euro; investors look for 40% stake in De La Rue; Koenig & Bauer restructures; Denmark opens banknote exchange centres; KOMSCO develops range of products made from banknote waste; Covestro formally introduces new CERTEVO polymer substrate; Philippines prepares for new all-polymer series; G+D launches latest generation of its banknote processing systems – the BPS® C evo®, PLUS... *Comment* – Main Trends of 2024; *On the Record* – Federal Reserve – a Generational Investment for the Future; *Special Report* – Are Note Issuers Ahead of the Counterfeiters?

Covestro Formally Launches CERTEVO

Covestro has formally introduced its new polymer substrate for banknotes and secure documents, which it has branded CERTEVO®, stating that it marks a 'significant advancement in document security, sustainability, and printing technology, combining performance and environmental responsibility.'

A pre-launch of the substrate for currency took place at the Banknote Conference in May. The product is a thermoplastic polyurethane which is created through extrusion, during which the addition of white pigments (or, potentially, other colours) takes place as opposed to the route for other polymer substrates, which are coated through opacification. No surface printing is required either before or after printing.

The result, it says, is a highly durable substrate which offers an optimised carrier to which ink (offset and intaglio) bonds strongly, with deep embossing properties up to 160 microns.

As coatings are not involved, the process does not allow for the creation of windows. Instead, windows are cut or punched into the substrate, much like they are with paper. But the difference is that, whilst in paper the process weakens the substrate, there is no impact on the strength of the polyurethane.

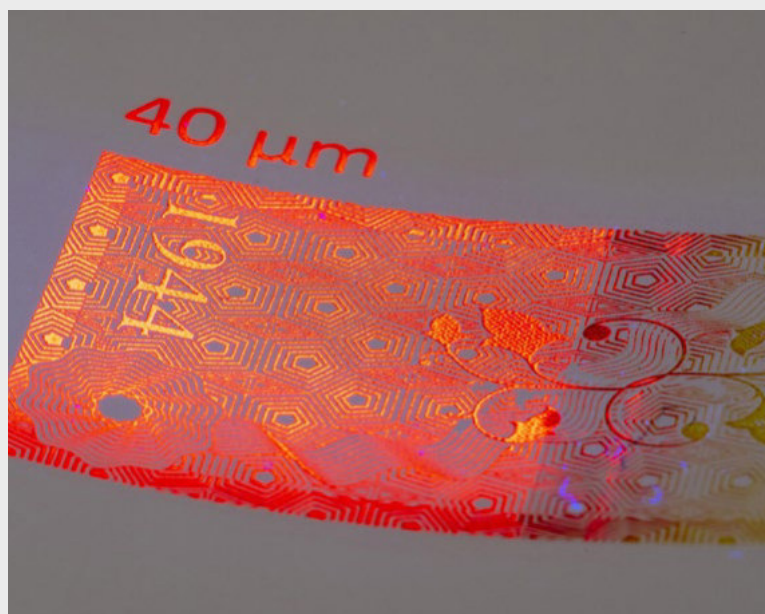
In terms of recycling, the company claims that the substrate offers advantages over other polymer substrates in that, whilst 20%

or so of their composition is in coatings, which impede their ability to be recycled, in the case of its substrate, this is only 3-4%.

In addition to its recyclability, Covestro claims that CERTEVO's high tear resistance and ink adhesion extends the lifecycle of printed items while conserving resources. Furthermore, its durable composition lowers long-term costs by minimising replacements.

Covestro (formerly known as BayerMaterialScience) is a leading polymer materials and chemicals producer and has been active in the document protection market for years through the supply of polycarbonate films for ID cards and passport data pages.

It has just accepted an offer from XRG (formerly Adnoc International) for 91.3% of its shares, and will form the foundational platform for XRG's Performance Materials and Specialty Chemicals business. The transaction, valued at around \$15 billion, is expected to be completed by the end of the second quarter of 2025, subject to customary closing conditions.



HSP Asia Comes Full Circle for its 20th Anniversary

The 20th edition of the High Security Printing™ Asia conference in Bangkok, Thailand (2-4 December 2024), marked an important milestone in advancing the region's security printing industry.

Thailand hosted HSP Asia for the fourth time since its inaugural conference in 2002, with previous events held in the city in 2008 and 2013. The conference highlighted its importance in promoting innovation and collaboration within the currency, identity, and secure document sectors.

With over 270 delegates from 44 countries and 115 organisations, and a ratio of suppliers and security printers to government authorities (including central banks) of 2:1, the event provided a unique platform for knowledge exchange and relationship building.

Social events, including a riverside Thai experience evening prior to the conference and a gala dinner on the Chao Phraya River, offered further networking opportunities in a picturesque setting.

Engaging programme

The programme began on the morning of 2 December with a tour of the Bank of Thailand's Note Printing Works. An afternoon seminar on 'The Future of Cash' showcased the changing cash environment and what stakeholders are doing to optimise the cash ecosystem and ensure its viability and sustainability.

On 3 December, the Bank of Thailand formally opened the main conference programme, followed by presentations on currency and identity documents, presenting regional trends and an overview of the security document landscape.

Following the first joint session, the conference programme was split into two parallel tracks – one focusing on currency and the other on travel and identity documents – allowing attendees to concentrate on the topics and issues that interest them most.

Nearly 40 presentations were delivered over two days. The presentations explored essential topics such as currency features, ID card advancements, and the design, production, authentication, and management of secure documents. Special emphasis was placed on sustainability, anti-counterfeiting strategies, and regional security developments.

Some highlights included:

- The Bank of Thailand's Note Printing Works provided an update on the country's payment landscape, with cash remaining a major player in the payment industry due to its inclusivity, accessibility, and

self-dependency. Although its percentage share of payment type at the point of sale has fallen, particularly as mobile payments increase, cash still dominates small ticket transactions – with around 80% of transactions under 100 baht (\$3) made using cash. It also maintains its use as a store of value, with the average cash holding value at 2,000 baht (\$65) per person.

- De La Rue shared details on currency trends in Asia, noting an 8.8% volume growth in South East Asia. Cash in circulation has grown steadily across the region in both large and small economies, often doubling or tripling in value since 2014. This consistency underscores the universal demand for money, irrespective of country size.

- The National Bank of Kazakhstan presented on its new Tenge banknotes in Saka style, with the first note issued in December 2023, whilst the National Reserve Bank of Tonga provided the background to the launch of its new series, which was also launched at the end of last year.

- China Banknote Printing and Minting Corporation showed its commemorative banknote, issued to celebrate the Year of the Loong (Dragon), with imagery reminiscent of several elements of traditional Chinese culture.

- Louisenthal detailed its holistic concept for sustainable banknotes, which includes its banknote fibre extraction process to repurpose unfit banknotes into new materials such as recycling paper, carton board, or even that used in fibre mould injection.

- Hueck Folien unveiled The Ocean Dollar, a recycling concept for banknotes that utilises recycled aluminium, paper and PET that integrates security features such as Optomove® security thread and Trilumic® foil with EcoBreath® paper, for example.

- Oberthur Cash Protection presented on the role of central banks in reducing the number of ATM attacks, with a rise in physical attacks impacting public access to cash in terms of trust, increased fees, economic disruption and the effect on vulnerable populations. The Intelligent Banknote Neutralization System (IBNS) is intended as a preventative measure, with the system staining banknotes with ink if it detects an attack on the cash storage mechanism where it is deployed.

- Aftab Baloch explained how the introduction of a new series of Pakistani banknotes – including a new high denomination 10,000 rupee note, updated design and security features, and a shift towards polymer – will impact the country's economic landscape as a predominantly cash driven society.

- Zeiser detailed the creation of micro-engravings and micro-perforations on banknotes and secure documents such as passports or tax labels. Whilst conventional engraving used a high-speed graver with the ability to create characters with a minimum of 1mm in height, the use of a laser has allowed micro-engraved characters with a minimum of 0.4mm in height, in addition to sharper features. The updated micro-perforation solution extends beyond a static pattern to enable the employment of variable data and visual effects.

- IQ Structures underlined how sophisticated designed and calculated nanostructures can give materials and products new, amazing functions and features. One out-of-the-box perspective was using microneedles (microcone) technology for pharmaceutical applications. The technology can be used in the near future to administer medicines to patients, such as applying plaster to a skin injury.

- The International Hologram Manufacturers Association (IHMA) announced that it is embracing a new security features ecosystem. IHMA now has a new name: International Optical Technologies Association (IOTA). The change is part of the industry's strategic plan to broaden its scope to better serve evolving markets and new technology frontiers, particularly in optical security.

Regional awards

Another conference highlight was the presentation of the regional HSP Asia awards, with three categories for Banknote of the Year (see next page).

The next HSP Asia will be held from 1-3 December 2025 in Kuala Lumpur, Malaysia.



Kings, Dragons and Leopards All Feature in Asia's Regional Banknote of the Year Awards

The Regional Banknote and ID Document of the Year Awards form part of the industry's High Security Printing (HSP) Asia conference, the latest of which recently concluded in Bangkok, Thailand (see opposite).

There are three categories for the banknote awards – Best New Series, Best New Banknote, and Best New Commemorative Banknote – with Tonga, China, Thailand, and Kazakhstan all receiving recognition this year.

■ Best New Banknote Series

The award for the Best New Banknote Series went to the National Reserve Bank of Tonga for its new series of Pa'anga banknotes. The series was launched on 4 December 2023, the birthday of the late King Tupou I, the first ruler of modern Tonga.



The notes, which replaced the 2015 series, were designed and printed by De La Rue, and are in six denominations, ranging from 2 to 100 pa'angas (T\$). The two most heavily used notes – the T\$5 and T\$10 – are on SAFEGUARD® polymer, with a transparent window incorporating an image of the current king, Tupou VI.

The other four notes are on paper. The highest denomination (T\$100) features an 18mm wide NEXUS micro-optics thread, the T\$50 an IGNITE® dynamic micro-optic thread, and the T\$20 a PUREIMAGE™ holographic thread.

All six notes feature Enhanced GEMINI™ and BLINK™ Level 2 UV and phosphorescent features respectively.

The colours are the same as those of the previous series, and a portrait of King Tupou VI appears on the front, as it did before, albeit that the notes have fresher and more modern appearance.

The designs on the reverse depict aspects of the Kingdom's culture, history, and aspirations, with each denomination encapsulating a different theme – including

tourism, governance, stability, growth, and culture.

■ Best New Banknote

The National Bank of Kazakhstan won the award for the Best New Banknote for the 10,000 tenge 'Saka Style' note issued earlier this year. It is the second banknote of the new 'Saka Style' series – which draws inspiration from elements of the ancient Saka culture.

The vertically-orientated front of the note features a Tree of Life branch and soaring bird, a DNA spiral and infinity symbol, and a leopard on a mountain peak. The horizontally-orientated reverse features a snow leopard and ornamental shield, and the landscape of the Zailiysky Alatau mountains,

Advanced security features include Louisenthal's Varifeye® ColourChange Patch, which shimmers gold in direct light with the mountain top outlining appearing blue in translucent light, Crane Currency's RAPID® Vision 5mm wide micro-optics windowed thread, and SICPA's SPARK Flow® Dimension.



■ Best New Commemorative Banknote

The Best New Commemorative Banknote accolade was presented jointly this year to both the Bank of Thailand and China Banknote Printing and Minting Corporation (CBPM).



The Bank of Thailand was awarded for its 100 baht commemorative banknote, issued to celebrate HM King Rama X's 6th Cycle Birthday Anniversary on 28 July. It has a vertical format, in common with other commemorative notes issued to celebrate royal milestones.

The front of the banknote depicts His Majesty wearing ceremonial robes and 'Yellow Star' flowers (or ruang phueng), his symbolic flower. The back features a standing portrait of the King holding a sword, as well as an image of ratchaphruek, the national flower.

A window printed with special golden ink outlines the white-coloured Garuda (state emblem) on both sides, while a Thai diamond-shaped clear window has a partial pattern of a yellow star flower with special ink printed in the centre. The pattern moves, and the colour changes from gold to green, when the note is tilted.

The Bank of Thailand issued 10 million commemorative banknotes, in addition to 2 million banknote display sleeves, with the latter available to purchase at 10 baht each. All proceeds are being presented to the King for donation to royal charities of his choice.

China Banknote Printing and Minting Corporation was awarded for its 20 yuan commemorative banknote, issued on polymer to celebrate the 2024 Year of the Dragon.

The obverse of the banknote showcases an image of the dragon, inspired from an ascending dragon bas-relief on the Nine-Dragon Wall – a renowned historical monument in Beijing. The design also incorporates influences from traditional Chinese glazed tile craftsmanship, A holographic colour shift LiveColor@ security stripe and transparent window below the central motif depict the Chinese character for good fortune and floral elements.

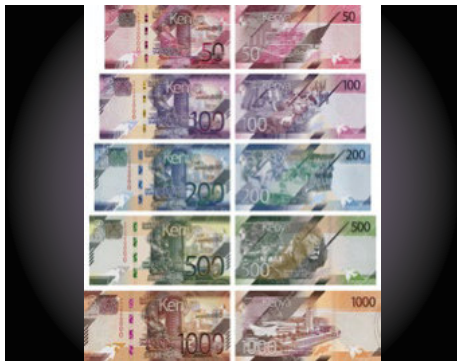
The reverse of the banknote features a scene of children performing a dragon dance to welcome the spring.

All elements of the new note – including the design, polymer substate, plates, special stripe and the print itself – were undertaken by CBPM. Around 100 million of the banknotes were made available for circulation, obtainable via online reservations and offline exchanges.

Updated Kenya 2024 Series – a Step Up in Security

The Central Bank of Kenya (CBK) derives its mandate from Article 231 of Kenya's Constitution and Section 22 of the CBK Act. Among these responsibilities, CBK must ensure and facilitate adequate and secure money supply in the economy. In fulfilling this mandate, the CBK took steps to guarantee the supply of banknotes by procuring an updated version from Giesecke+Devrient (G+D) Currency Technology.

Kenya's banknotes are denominated in 50, 100, 200, 500 and 1,000 Kenyan Shillings (KSh or KES). The current series was originally produced by De La Rue, but following the closure of its printworks near Nairobi, the contract for the new notes was awarded to G+D.



The main change to the banknotes, which have been progressively released into the market from August 2024, is the replacement of the colourshifting threads with Louisenthal's latest version of RollingStar®.

Overall design remains unchanged

To ensure public familiarity and minimise uncertainty, CBK maintained the overall design of the 2024 series banknotes to be similar to the 2019 series. Additionally, CBK introduced a state-of-the-art security thread, the RollingStar® i+ thread in the full series. On the back of the banknotes, CBK opted to enhance the properties of the iridescent band to illuminate UV properties when fluoresced.

Other than the security updates, the banknotes bear the signatures of the CBK Governor and the Principal Secretary (PS) to the National Treasury, as a Member of the Board, as has been practice since 1966. The front of all the banknotes in the series maintain the image of Kenyatta International Convention Centre monument in its entirety. A dove is also shown to symbolise a peaceful Kenya.

The 2019 series marked a significant change from previous designs, following a change in the constitution that forbids banknotes or coins bearing the images

of past presidents. A different theme was chosen for the back of each note, as follow:

- **KES 1,000:** Governance. An image of Kenya's Parliament is depicted as a key pillar of governance
- **KES 500:** Tourism – Kenya's National Parks such as the Maasai Mara and the white sandy beaches are globally recognised; also an image of Simba (Lion) as the king of the jungle.
- **KES 200:** Social Services, recognising the importance of medical services, education and athletics, in which Kenya has dominated over the years.
- **KES 100:** Agriculture. The banknote depicts the agricultural sector, especially maize, tea and livestock.
- **KES 50:** Green Energy. Kenya has made tremendous steps in use of clean energy and this banknote focuses on use of sustainable solutions such as wind, geothermal and solar power.

As noted, all the banknotes feature Louisenthal's RollingStar® i+ threads, recognised for their combination of brilliant dynamics and striking colourshift.

The three higher denominations – the KES 1,000, KES 500 and KES 200 – utilise the ZigZag dynamic movement effect. The two lower denominations – the KES 100 and KES 50 – utilise the Crystal effect. Each of the denominations have a different colourshift effect.

Nominations Open for IACA and MDC Award Programmes

The nomination period for the 2025 Excellence in Currency Awards is now open and will close 21 February, 2025.

There are four award categories for this round:

- Best New Circulating Banknote or Banknote Series
- Best New Circulating Coin or Coin Series
- Best New Currency Public Engagement Program
- Best New Cash Cycle Cash Visibility Program/Initiative.

The latter is a new category, and ties in with IACA's Cash Visibility & Collaboration programme that has been running throughout 2024. Cash Visibility refers to having a view of where cash (banknotes and coins) is, when it moves, how it moves and/or the details of the notes/coins (value/denomination, etc) in the cash cycle. This category will recognise organised efforts, plans, programmes put into place that

result in more visibility for one or more stakeholders in the cash cycle.

Projects of any issuer of banknotes/coins, central bank or ministry of finance, mint or other supplier of currency products and services are eligible for nomination in the appropriate categories. Nominations are limited to projects issued/completed between 1 February 2023 through 31 January 2025 (with the exception of the Cash Visibility category, which has no beginning date).

Nominations must be submitted through IACA's award site (Awards Force) – currencyaffairs.awardsplatform.com.

The awards will be presented at the Currency Conference (26-29 May 2025) in Bangkok, Thailand.

■ MDC 2025 Coin Awards

The 2025 Mint Directors Conference (MDC) is scheduled to take place 27-30 April 2025

in Cape Town, South Africa. It will host the prestigious Coin Awards, which recognise industry achievements in the design, production, packaging, and distribution of commemorative and circulating coins worldwide. The winners will be announced at the MDC Gala Dinner on 28 April at Cape Point Vineyards.

Six categories are open for nominations at the Coin Awards, including a new category of Best Collaboration Project, with each as follows:

- Best Commemorative Gold Coin
- Best Commemorative Silver Coin
- Best Circulating Coin or Coin Series
- Best Sustainability Initiative
- Best Packaging (of a collectible coin)
- Best Collaboration Project.

To be eligible for the MDC 2025 Coin Awards, projects must have been launched between May 2023 and December 2024 inclusive. Nominations are open until 31 January 2025.

More information about the awards and the submission platform Awardsforce can be found at southafrica.mintdirectorsconference.com/awards.

Note and Coin News

Philippines Prepares for New All-Polymer Series

Bangko Sentral ng Pilipinas (BSP) has announced the issue of the First Philippine Polymer (FPP) banknote series, over two years after the release of the 1,000 piso polymer as a trial in April 2022.

The theme of the new series is flora and fauna, with the designs of the new P50, P100, and P500 notes featuring the Visayan leopard cat, the Palawan peacock-pheasant, and the Visayan spotted deer respectively. They replace the theme of the previous series, of national heroes, and are in keeping with the main image on the 1,000 piso, of a Philippine Eagle.

The new banknotes go into circulation this month, but only in the Greater Manila area and in limited quantities. They will be available across the country by January 2025. Paper notes will remain legal tender, and the two series will co-circulate.

BSP is currently building a new printworks and mint, and the production of the new polymer notes is being outsourced. Note Printing Australia is the printer of the P1,000 on GUARDIAN™ polymer. It is understood that other printers will also be printing the new, lower denominations, which will also be on GUARDIAN.

The shift to polymer is designed to introduce more durable banknotes in response to the rapid deterioration of abaca-based peso bills, especially smaller denominations often used in wet markets. The polymer bills, BSP said, can last at least two to five times longer

than paper banknotes, offsetting high production costs.

The Philippines' annual banknote requirements are in excess of 2 billion, which will make the country one of the world's largest users of polymer substrate.



In Other News...

■ The United States Mint has unveiled the designs for the fourth and final year of the American Women Quarters Program. Since the beginning of the program in 2022, the Mint has issued five quarters annually, and the final five will be issued in 2025.

The 2025 coins recognize the achievements of Ida B Wells (African-American investigative journalist and civil rights campaigner), Juliette Gordon Low (founder of the Girl Scouts of the USA), Dr Vera Rubin (astronomer), Stacey Park Millbern (Korean-American disability justice activist), and Althea Gibson (international tennis champion and professional golfer).



■ The Peoples Bank of China has unveiled its new commemorative banknote celebrating the Year of Snake, which will be issued on 3 January. 100 million pieces will be available.

The Chinese zodiac cycle accommodates 12 animals, each of which is said to reflect specific human attributes. This is the second note second note in the zodiac series, and follows the award-winning Year of Loong (dragon) note issued in January (see page 13). The Bank will be issuing one commemorative note per year to mark each animal in the cycle.

The notes were designed and produced by China Banknote Printing and Minting (CBPM) at its new printing facility and polymer production plant in Guanzhou.

■ The Bank of Russia is set to cease production of one ruble coins (worth 1 US cent) and will print paper ruble banknotes for cost-saving purposes, following the resumption of 5 and 10 ruble note production in lieu of coins last year.

Officially, Russia uses coins in denominations of 1, 5, 10, and 50 kopeks and 1, 2, 5, and 10 rubles. The Bank of Russia's website indicates that 14% of the coins in circulation are of the 1 ruble denomination.

Separately, nearly 700,000 people have selected their preferences for designs that will appear on the reverse of the upgraded 1,000 ruble banknote, with the final design set to be unveiled by the Bank of Russia at the end of 2025.

The 1,000 denomination is dedicated to the Volga Federal District. The front of the banknote with images of sites from Nizhny Novgorod sites was presented last year and will remain unchanged, albeit that modifications were made after church leaders complained about the presence of Islamic but not Christian symbols.

The Bank of Russia has already issued modified 100 and 5,000 ruble banknotes, dedicated to the Central Federal District (encompassing Moscow) and the Ural Federal District in 2022 and 2023 respectively. It plans to issue new 10, 50 and 500 ruble banknotes as well, the symbols for which will also be selected by an experts after taking into consideration people's preferences.

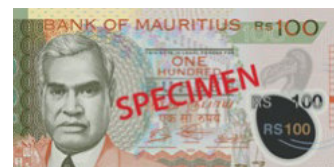
■ The Canadian government has announced that Terry Fox has been

chosen to feature on the next \$5 note. He came to fame for his campaign to raise money for cancer research (nearly \$25 million), despite suffering from the disease himself and dying from it in his early 20s.

The Canadian public had been invited to submit nominations for the new \$5 as part of the Bank of Canada's 'Bank NOTE-able' campaign, and more than 600 nominations met the qualifying criteria (Canadian by birth or naturalisation, outstanding achievement, deceased for at least 25 years). From this a shortlist of eight was reached, with the Minister of Finance making the final choice.

The new note will be polymer and predominantly blue, with a vertical orientation. Its introduction will follow some time after the new \$20, with a portrait of King Charles III, goes into circulation (in 2027). The new \$10, the first in the latest series and featuring civil rights activities Viola Desmond, was issued in 2018. Terry Fox replaces the portrait of the former Canadian Prime Minister Wilford Laurier on the current \$5, which will move to the new \$50.

■ The Bank of Mauritius has launched a new 1,000 rupee (MUR) banknote, printed by Oberthur Fiduciaire on GUARDIAN polymer.



Continued on page 16 >

... Note and Coin News

The new banknote is similar in design to the paper version, with a portrait of Mauritian statesman Sir Charles Gaetan Duval on the front. But it incorporates a number of polymer-specific features, including an intricate Cameo feature depicting the Dodo in the window, and an IRISWITCH™ Gold design for the 1,000 numeral.

New MUR 100 and MUR 200 banknotes, scheduled for release in 2025, will boast similar design elements and advanced security features, including an egg-shaped window accompanied by iridescent colours on the numerals 100 and 200.

Polymer versions of the MUR 25, 50, 500 and 2,000 denominations are already in circulation.

■ The National Bank of Romania has issued a commemorative 100 lei polymer banknote to mark 185 years since the birth of King Carol I.



The front of the note depicts an image of the King, the Star of Romani and a

battle scene from the country's War of Independence. The reverse shows a statue of the King and Peles Castle.

Security features in the GUARDIAN note include a complex window with optically variable and UV features, gold metallic ink, a simulated metallic security thread with demetallisation, and shadow watermark. Although legal tender, only 30,000 of the notes have been printed, and are being sold with a special folder for 150 lei. They are available for purchase through NBR branches.

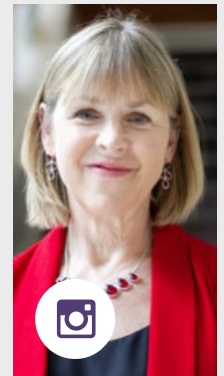
Events

3–5 FEBRUARY 2025
HIGH SECURITY PRINTING EMEA
 Basel, Switzerland
hsp-emea.com

5–7 MARCH 2025
INTERGRAF CURRENCY + IDENTITY
 Milan, Italy
intergrafconference.com

9–11 JUNE 2025
HIGH SECURITY PRINTING LATIN AMERICA
 Rio de Janeiro, Brazil
hsp-latinamerica.com

Publisher: Currency Publications Ltd (a Reconnaissance/Currency Research company).
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: Antti Heinonen, Chander Jeena, Alex Sadler, John Winchcombe.



Annual subscription rate: from **£1,520** plus postage (also includes the Currency Index database and Currency & Coin News Weekly). Ask about subscriptions for multiple access, including to the Currency News e-publishing platform.

The editorial team welcomes your news, contributions and comments. Please send these to info@currency-news.com

Charter Subscribers



Terms and Conditions

No part of this publication may be reproduced, stored in a retrieval system or translated in any form or by any means - electronic, mechanical, photocopying, recording or otherwise - without the prior permission of the publishers.

While every effort has been made to check the information given in this publication, the publishers cannot accept any responsibility for any loss or damage arising out of, or caused by the use of, such information. Opinions expressed in Currency News are those of the individual authors and not necessarily those of the publisher.

Copyright 2024. All rights reserved

ISSN 2516-6336

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

