THE BANKNOTE - SOURCE COMPANION

Ketineni Ramarao

This companion lists every source cited in The Banknote, in citation order. For each source it gives the reference, the specific claims in the book it supports, an honest statement of how it was read, and its limitations. Bracketed references in the main text ([C1], [C2], …) resolve here. Web sources were accessed on 1 November 2026 unless noted otherwise.

[C1] Richard von Glahn, "The Rise and Demise of Paper Money in Imperial China", Hoover Institution research brief, 2025-04-30

- Read level: full.
- Supports: Song monetary system; jiaozi private origins late 10th c. Sichuan; state takeover 1023; "maintain equilibrium" policies (silver reserve buybacks, tax acceptance half coin/half paper, 3-year redemption cycles); Song military overissue; Mongol continuation and coin ban; Ming depreciation and retreat to silver.
- Limitations: brief summarizing a book; numbers not detailed.
- https://www.hoover.org/research/rise-and-demise-paper-money-imperial-china

[C2] Sveriges Riksbank, "First banknotes in Europe"

- Read level: full.
- Supports: Stockholms Banco 1661 credit notes; Palmstruch; 1660 recoinage bank run trigger; notes unlinked to deposits; inflation; failure; 1664 withdrawal; Palmstruch death sentence 1668 reprieved, died 1671.
- Limitations: short official summary.
- https://www.riksbank.se/en-gb/about-the-riksbank/history/historical-timeline/1600-1699/first-banknotes-in-europe/

[C3] Bank of England Museum, "Our earliest Bank of England note" (Miranda Garrett, 2021-03-05)

- Read level: full.
- Supports: goldsmith running cash receipts; BoE founded 1694 issued notes as receipts; 'promises to pay' still on notes; earliest surviving BoE note 18 June 1697, GBP22 handwritten running cash note, withdrawn in two payments (5 and 17), odd denominations from coin shortage.
- Limitations: blog.
- https://www.bankofengland.co.uk/museum/online-collections/blog/our-earliest-bank-of-england-note

[C4] Wikipedia, “Jiaozi (currency)”

- Read level: full article.
- Supports: jiaozi as promissory note Chengdu 11th c.; denominations 500 wen to 5 guan; exchange fee 30 wen per guan; sixteen merchant houses standardized (Jiaozi hu); nationalization Jiaozi wu 1023; first government series 1024 (1 guan to 10 guan); 1068 1-guan note 40% of circulation; Huizong 1105 replacement qianyin; inflation figures (3.78M min vs 700k iron cash; 1204 +5.3M min; 100-400 cash per min); 1192 fixed 770 wen per guan; 2-year expiry later 3 (1199); cap 1,255,340 min covered 1/5 in cash; huizi replacement 1256; multiple seals anti-counterfeiting.
- Limitations: tertiary; key figures cross-checked against C1 where possible; use with attribution care.
- https://en.wikipedia.org/wiki/Jiaozi_(currency)

[C5] Wikipedia, “Stockholms Banco”

- Read level: full article.
- Supports: founded 1657 Palmstruch; charters Nov 30 1656; exchange bank + loan bank; copper/silver daler dual currency; 1660 copper content cut 17% causing run; 1661 credit notes (Kreditivsedlar) round denominations 5/25/100/1000 copper daler, signed by Palmstruch; 1666 second series (Palmstruchare) 10/25/50/100 silver daler; overissue 1663, value fell, refused redemption from Oct 1663/1664; liquidation completed 1667; privilege transferred to Riksens Standers Bank Sept 17 1668 (world’s oldest surviving central bank).
- Limitations: tertiary; some claims cite Bindseil/Marmefelt.
- https://en.wikipedia.org/wiki/Stockholms_Banco

[C6] Wikipedia, “John Law’s Company”

- Read level: full article.
- Supports: Company founded 1717; Law’s Bank France’s first central bank; merged Feb 1720; shares 500 livres face payable in government debt bills; rue Quincampoix trading; May 1719 East Indies/China companies acquired; collapse second half 1720; receivership April 1721.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/John_Law%27s_Company

[C7] Wikipedia, “Marco Polo”

- Read level: full article.
- Supports: Polo in China 1271-1295; first Western record of paper money (among porcelain, gunpowder); dictated to Rustichello in Genoese prison.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Marco_Polo

[C8] Wikipedia, “Coin”

- Read level: relevant sections.
- Supports: earliest coins Iron Age Anatolia late 7th c. BC, Lydia (Alyattes, d. c.560 BC); electrum 40-55% gold; Phanes inscribed coin Ephesus 625-600 BC; Herodotus I.94 Lydians first to use gold and silver coin and sell by retail; small silver fractions for retail late 6th c. BC.
- Limitations: tertiary, some [citation needed] flags.
- https://en.wikipedia.org/wiki/Coin

[C9] Wikipedia, “Negotiable instrument”

- Read level: relevant sections.
- Supports: bills of exchange history: adesha Mauryan India 3rd c. BC; Roman praescriptiones 1st c. BC; Tang dynasty fey tsien (flying money) 8th c.; Knights Templar pilgrim notes c.1150; Ilkhanid Persia ‘cha/chap’ paper money mid-13th c. collapse after ~3 years; suftadja from 8th c.; Italian bills 13th-15th c.; Statute of Money 1335 England.
- Limitations: tertiary, one self-published flag.
- https://en.wikipedia.org/wiki/Bill_of_exchange

[C10] Wikipedia, “Tally stick”

- Read level: relevant sections.
- Supports: split tally system, English exchequer tallies to 1826, 1834 burning of tallies caused Palace of Westminster fire.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Tally_stick

[C11] Marco Polo, The Travels, Book 2 Ch. XXIV "How the Great Kaan Causeth the Bark of Trees… to Pass for Money" (Yule 1903 translation, via Columbia afe.easia PDF)

- Read level: excerpt.
- Supports: Polo on Kublai's mint at Cambaluc; mulberry bark paper; "secret of alchemy in perfection"; money passing universally; merchants required to sell gold/silver/gems only to the Emperor | additional: denominations half tornesel up to ten bezants; officials sign and seal, chief officer's vermilion seal; forging punished with death; 'vast quantity… which costs him nothing, that it must equal in amount all the treasure in the world'; 'ten bezants' worth does not weigh one golden bezant'; merchants sell metals/gems only to Emperor, twelve appraisers, paid in paper; wares of 400,000 bezants several times a year.
- Limitations: 1903 Yule translation excerpt | limitations: excerpt of translation.
- https://afe.easia.columbia.edu/mongols/figures/ser_xxiv.pdf

[C12] Howard Hotson, "Printing and the economy: the first paper money", Cabinet (Oxford), May 2019

- Read level: full.
- Supports: Tang bills of exchange/flying cash; Song notes depicting the coins they stood for; by early 12th c. central government issuing tens of millions of notes/year in multiple colours on special anti-counterfeit paper; Yuan banknote with bronze printing plate; Polo chapter XXIV quote; Ming first to replace metal coinage entirely with paper; by 1425 paper lost over 99% of value against gold; Ming banknote is British Museum History of the World in 100 Objects no. 72; paper money the only Asian printing described in European writings before Gutenberg (eight medieval descriptions).
- Limitations: museum commentary page.
- https://www.cabinet.ox.ac.uk/printing-and-economy-first-paper-money

[C13] British Museum collection object CIB,EA.260, Ming banknote (1 guan, 1375)

- Read level: full object page.
- Supports: Ming Great Ming Circulating Treasure Certificate; Board of Revenue issuer; mulberry paper; 340x218mm; illustration of 1000 coins in 10 stacks; dragon border; on display Room 68; bibliog: MacGregor A History of the World in 100 Objects no. 72.
- https://www.britishmuseum.org/collection/object/C_CIB-EA-260

[C14] BBC Radio 4 / Neil MacGregor, "A History of the World in 100 Objects, Episode 72: Ming Banknote" transcript

- Read level: full transcript.
- Supports: feiqian 'flying cash' name; note larger than A4, soft velvety grey mulberry bark (legally approved material); printed one side woodblock black ink; Ming emperor founded Imperial Board of Revenue and 1374 'treasure note control bureau'; inscription 'To counterfeit is death. The informant will receive 250 taels of silver, and in addition the entire property of the criminal.'; note depicts the coins it represents; Ming design decision: paper convertible into copper coin; c.1425 government suspended paper money; silver bullion basis of Ming monetary world thereafter.
- Limitations: radio script; convertibility point simplifies (paper was inconvertible fiat in practice per von Glahn - flagged conflict, C1 vs C14; C14 refers to the Ming note's declared equivalence rather than enforceable convertibility).
- https://www.bbc.co.uk/programmes/articles/42sW89NYmxB60VNTmWz4fPx/episode-transcript-episode-72-ming-banknote

[C15] Katie Allen / Bank of England, "Banknotes: a short history", The Guardian, 2013-09-10

- Read level: full.
- Supports: 1694 BoE founded to raise money for William III's war; goldsmith running cash notes 'or bearer'; notes handwritten, cashier-signed; 1696 no notes under GBP50; 1725 partly printed; 1745 range GBP20-GBP1000; 1759 first GBP10 (Seven Years War gold shortage); 1793 first GBP5; 1797 runs and suspension, GBP1/GBP2 notes; 1853 first fully printed notes; 1914 Treasury 10s/GBP1; 1925 partial gold return, 1931 left gold; 1970 historical figures on notes; Australia 1988 polymer commemorative, first all-polymer nation.
- https://www.theguardian.com/business/2013/sep/10/banknotes-history

[C16] Wikipedia, "Stop of the Exchequer"

- Read level: full.
- Supports: 1672 Charles II repudiation; Crown debt sold to goldsmith bankers; stop declared 2 Jan 1672, one year then extended; GBP1,211,065 obligations ~ king's ordinary revenue; fleet financing for Third Anglo-Dutch War; Burnet quote ('the bankers were broken, and multitudes… ruined'); Backwell among ruined; Goldsmith Bankers case to 1692/1696; settlement Appropriation of Revenue Act 1700 at 3%; legacy: founding of Bank of England 1694, GBP1.2m loan at 8% plus GBP4,000 management; English state never defaulted again.

- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Stop_of_the_Exchequer

[C17] Wikipedia, "John Law (economist)"

- Read level: full article.
- Supports: Law b.1671 Edinburgh, d.1729 Venice; duel killing Beau Wilson 1694, fled; Money and Trade Considered pamphlet; banknotes backed by land/gold/silver idea; Regent approved Banque Generale 1716; System expanded money supply via fiat money, centralized revenue/coinage/borrowing in Company; Controller-General of Finances 5 Jan 1720; held share price at 9,000 livres March 1720; 21 May 1720 engineered reduction of notes and shares, reversed in six days; public rushed to convert notes to coin; collapse 1720; ambiguity whether collapse was sovereign default.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/John_Law_(economist)

[C18] Wikipedia, "Banknotes of Scotland"

- Read level: relevant sections.
- Supports: Bank of Scotland first bank in Europe to successfully print its own banknotes (1695); three Scottish retail banks (Bank of Scotland, Royal Bank of Scotland, Clydesdale) issue notes today; Scottish notes not legal tender anywhere in UK incl. Scotland, classified as promissory notes; Sir Walter Scott's 1826 Malachi Malagrowther campaign to preserve Scottish note issue, portrait on BoS notes; shared colour scheme blue/brown/purple/red/turquoise.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Banknotes_of_Scotland

[C19] Wikipedia, "Early American currency"

- Read level: full article.
- Supports: Massachusetts Bay Dec 10 1690 first authorized government paper money in the Western world; oldest surviving bill Feb 3 1690 (20 shillings); commodity money (tobacco, beaver, wampum); bills of credit redeemable at future date, retired via tax acceptance; Currency Acts 1751 and 1764; Continental currency denominations $1/6 to $80; Congress issued $199,990,000; depreciation to 1/5-1/7 face by end 1778, 1/40 by 1780, ceased to circulate May 1781; British economic warfare counterfeiting (Franklin quote); exchanged for treasury bonds at 1% in 1790s; Robert Morris Bank of North America 1782; Constitution gold and silver clause; Juilliard v. Greenman quote.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Continental_currency

[C20] Wikipedia, "Greenback (1860s money)"

- Read level: full article.
- Supports: Demand Notes July/Aug 1861 $50M, green reverse; First Legal Tender Act Feb 25 1862 United States Notes; exceptions (customs duties, interest on debt); Edmund Dick Taylor suggestion to Lincoln Jan 1862; California/Oregon defiance; greenback vs gold premium 29% Dec 1862, 152 spring 1863, 131 after Gettysburg; by June 30 1863 $3.3M Demand vs ~$400M Legal Tender; denominations $1 to $1,000, portraits Chase/Hamilton/Lincoln; pre-war government borrowing on private bank loans at up to 12%, some banks asking 36%.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Greenback_(1860s_money)

[C21] Wikipedia, "National Bank Note"

- Read level: full article.
- Supports: National Bank Notes issued 1863-1935 by federally chartered banks; backed by US bonds deposited with Treasury, notes up to 90% of bond value; 5% redemption fund; monetization of federal debt; charter numbers and dual serials; retired as currency type in 1930s consolidation; pre-war wildcat banking context.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/National_Bank_Note

[C22] Wikipedia, "Federal Reserve Note"

- Read level: full article.
- Supports: FRN current US banknotes; Federal Reserve Act 1913; liabilities of Reserve Banks, obligations of US government; BEP prints; Reserve Banks post collateral, pay face value; 'this note is legal tender for all debts, public and private'; initially redeemable in gold/lawful money; Emergency Banking Act 1933 removed redemption obligation; 1928 small-size format from Philippine peso silver certificate size; Fed shreds 7,000 tons of worn currency/year; average

circulation life (as of 2018): $1 6.6y, $5 4.7y, $10 5.3y, $20 7.8y, $50 12.2y, $100 22.9y; 75% cotton 25% linen from Crane Currency, Dalton MA.

- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Federal_Reserve_Note

[C23] Office of the Comptroller of the Currency, “History of the OCC 1863-1865”

- Read level: relevant page.
- Supports: March 1865 Congress passed 10% tax on notes of state banks to drive adoption of national system; McCulloch’s preference for conversions.
- https://www.occ.treas.gov/about/who-we-are/history/history-of-the-occ/1863-1865/index-occ-history-1863-1865.html

[C24] Crane Currency, “Where It All Began” (company history page)

- Read level: full page.
- Supports: Stephen Crane supplied paper for first US securities (Paul Revere engraved plates, Revolutionary War); Zenas Crane mill for banks/printers; Zenas Marshall Crane embedded vertical silk threads in paper; Civil War collar paper; W. Murray Crane 1879 US banknote paper contract; 2002 Crane took over Tumba Bruk (paper/banknotes since 1755); first demetallized security thread; MOTION thread debuted Swedish 1000 kronor; 2018 new facility; prints for over 50 central banks (self-claim, dated).
- Limitations: vendor page - offered features/self-history only.
- https://www.cranecurrency.com/company/history/

[C25] Giesecke+Devrient, “Intaglio printing on banknotes”

- Read level: full page.
- Supports: intaglio gives rich colours, vivid motifs, tactile relief; paper compressed and shaped in printing; special-effect inks colour-shift/variable visibility; covert machine-readable features; FIT (Fine Intaglio Technology) computerised engraving + laser; retrogravure art history.
- Limitations: vendor page.
- https://www.gi-de.com/en/currency-technology/banknote-solutions/banknote-security-technology/printed-security-features

[C26] De La Rue, “Banknote Security Features”

- Read level: full page.
- Supports: De La Rue only polymer substrate supplier that also designs and prints complete banknotes (self-claim); product range: IGNITE/KINETIC STARCHROME colour-shift micro-optic threads; PUREIMAGE diffractive thread; OPTILIGHT nano optical features; Enhanced GEMINI UV two-colour feature; ASSURE embedded level-3 machine-readable security in SAFEGUARD polymer.
- Limitations: vendor page.
- https://www.delarue.com/currency/security-features

[C27] Colin Ward, “Polymer banknotes”, CSIROpedia, 2011

- Read level: full article.
- Supports: 1966 decimal currency, forgeries within a year; Thredbo think tank 1968; Dave Solomon and Sefton Hamann; OVD concept (device that changes with viewing angle etc., cannot be photographed); Kodak point; CSIRO-made plastic laminate; pilot plant 50M test notes + 1.25M OVDs; Turbula test (synthetic dirt, abrasion, artificial sweat); $3/$7 test notes; 1988 Bicentennial $10 first polymer note; by 1998 all Australian notes polymer, first country; savings >$20M/year; Securency 1996 JV with Innovia Films; by 2009 exporting to 25 countries, >3 billion notes.
- Limitations: CSIRO retrospective.
- https://csiropedia.csiro.au/polymer-banknotes/

[C28] Note Printing Australia, “Banknotes” (history page)

- Read level: full page.
- Supports: Thredbo 1967/1968 brainstorming under RBA Governor HC ‘Nugget’ Coombs (page says formed 1960 RBA, think-tank at Mt Thredbo); 20 years development; secret printing plant Port Melbourne; 1982 blind feel test with Governor Bob Johnston; 1988 first polymer note ($10 Bicentennial); polymer used in >50 countries, >150 denominations.
- Limitations: company page.
- https://www.noteprinting.com/history

[C29] schwarz-druck.de, “Die Entstehung des Wasserzeichens” (watermark history)

- Read level: full page.
- Supports: watermark demonstrably from 1282 Bologna paper mills (wire on mould/dandy roll); thinner fibre layer shows lighter in transmitted light; raised+deepened elements simulate halftones - technique still used for banknote watermarks.
- Limitations: company history page.
- https://schwarz-druck.de/en/die-entstehung-des-wasserzeichens/

[C30] Markus Kuhn (Cambridge), "The EURion Constellation" (2002) + Steven Murdoch summary page

- Read level: full abstract/page.
- Supports: colour photocopiers refuse to copy recent banknotes; they detect the EURion constellation - a pattern of five small circles; found on many banknote designs; kept secret; reverse-engineered at Cambridge.
- Limitations: academic note, 2002-era machines.
- https://www.cl.cam.ac.uk/~mgk25/eurion.pdf

[C31] Bank of England Museum blog, "Operation Bernhard" (Alison Cook, 2024)

- Read level: full.
- Supports: Operation Andreas 1940 revived as Bernhard 1942 under SS Major Bernhard Krueger; aim to pay spies/buy supplies and destabilise UK economy; 142 Jewish prisoners at Sachsenhausen; ~150 security marks identified (intentional minor defects per denomination); paper matching look and feel; ageing by hand; failure to crack serial numbering, reuse led to first detection 1943 (British bank in Morocco); prisoners moved to Austria, liberated by US 6 May 1945; notes among best counterfeits ever.
- https://www.bankofengland.co.uk/museum/online-collections/blog/operation-bernhard

[C32] Wikipedia, "William Chaloner"

- Read level: full article.
- Supports: Chaloner 1650-1699; Birmingham groats, guineas, pistoles, banknotes, lottery tickets; Knightsbridge house; Newton as Warden of the Mint pursued him; 'A Jappaner in clothes threadbare… in a short time put on the habit of a gentleman' (Newton); hanged Tyburn 22 March 1699 for high treason; 17th c. English currency disarray, clipping; Craig quote 'the most accomplished counterfeiter in the kingdom'.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/William_Chaloner

[C33] Wikipedia, "Superdollar"

- Read level: full article.
- Supports: supernotes high-quality fake $100s, worldwide circulation from late 1980s; printed intaglio on cotton/linen recreating security features; 19 families by 2006; tell-tale errors (lamp post line, N slash, clock hands); Operations Smoking Dragon/Royal Charm 2002-2005, 87 arrests, $4.5M seized, origin undetermined; Arnaouti Manchester gang convicted 2005, 350k $100 bills; North Korea accusations based partly on defectors of doubtful reliability; 2013 new $100 design with 3D security ribbon.
- Limitations: tertiary, some [by whom?] flags - used with attribution.
- https://en.wikipedia.org/wiki/Superdollar

[C34] Wikipedia, "Euro banknotes"

- Read level: full article.
- Supports: euro notes since 2002 (euro virtual from 1999); 7 denominations EUR5-EUR500, identical design across eurozone; pure cotton fibre; July 2023: 29.624 billion notes, EUR1.569 trillion; first series replaced by Europa series from 2013 (no EUR500 in ES2); average life ~3 years (<1y EUR5, >30y EUR500); design competition 1996 (44 proposals), won by Robert Kalina; windows/gateways obverse, bridges reverse, stylised not real buildings; ECB signature, 5 linguistic acronym variants.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Euro_banknotes

[C35] Wikipedia, "De La Rue"

- Read level: full article.
- Supports: founded 1821 Thomas de la Rue (Guernsey, straw hats to stationer); 1831 playing cards Royal Warrant; 1855 postage stamps; 1860 first banknotes (Mauritius); 1995 acquired Portals (BoE banknote paper since 1724); 1997 Harrison & Sons; 2003 acquired BoE Debden printing works; 2018 sold paper business (Portals International); 2019 sold Identity Solutions (HID, GBP42m); 2024 contracted with BoE for Charles III banknotes; Oct 2024 sold authentication business to

Crane NXT (GBP300m); April 2025 Atlas Holdings takeover agreed (GBP263m), completed 3 July 2025, delisted; revenue GBP310.3m (2024), 1,674 employees; ‘world’s largest commercial printer of banknotes’ (company description); serves over 69 national currencies.

- Limitations: tertiary.
- https://en.wikipedia.org/wiki/De_La_Rue

[C36] Federal Reserve, “How much does it cost to produce currency and coin?” FAQ

- Read level: full page.
- Supports: Fed orders currency annually from BEP, which charges cost of production; 2025 currency operating budget USD1,040.0M; variable printing costs USD4.1c ($1/$2), 7.1c ($5), 6.8c ($10), 7.3c ($20), 11.3c ($100; no $50 run in 2025); fixed costs USD688.6M; Reserve Banks buy coin at face value from Mint. (Figures re-verified live 1 Nov 2026.)
- https://www.federalreserve.gov/faqs/currency_12771.htm

[C37] ECB, “Banknote production and stocks”

- Read level: full page.
- Supports: euro production pooled among NCBs under ECB allocation, each NCB bears costs of its allocated share; 11 high-security printing works in Europe; example: French/German/Italian NCBs produced 1.7 billion EUR50 notes in 2017; hundreds of manual and automated quality tests; cotton-fibre paper, watermark/thread in paper, offset+intaglio+hot-stamped hologram+silkscreen colour-change; logistical stocks vs Strategic Stock (exceptional demand surges/supply interruption); NCB forecasts, ECB central forecast, redistribution to avoid national shortages/surpluses.
- Limitations: official ECB description.
- https://www.ecb.europa.eu/euro/banknotes/production/html/index.en.html

[C38] Wikipedia, “Automated teller machine”

- Read level: history sections.
- Supports: first ATM Barclays Enfield, North London, 27 June 1967 (De La Rue Automatic Cash System, DACS), beating Swedish Bankomat by nine days; John Shepherd-Barron of De La Rue, OBE 2005; early machines used carbon-14-impregnated cheques, later matched with four-digit PIN (James Goodfellow patent GB1197183, filed 2 May 1966); Docutel/Donald Wetzel US development; c. 3 million ATMs worldwide (~1 per 3,000 people).
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Automated_teller_machine

[C39] Wikipedia, “Brink’s”

- Read level: full article.
- Supports: founded 1859 by Perry and Fidelia Brink, Chicago; armored transport incl. Hope Diamond delivery; major robberies (1981 Nanuet Brink’s robbery, helicopter/inner-tube and Fokker 100 heists at Brink’s expense).
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Brink%27s

[C40] Federal Reserve, “Currency in Circulation: Value”

- Read level: full page (read in full, November 2026).
- Supports: 31 Dec 2025 total USD2,394.9bn in circulation; USD100 notes USD1,988.8bn (83.0% of value); USD20s USD220.4bn; USD50s USD123.5bn; USD1s USD15.2bn; 31 Dec 2024 USD2,322.9bn; growth from USD853.6bn (2008) ~2.8x.
- Limitations: issuer self-reported.
- https://www.federalreserve.gov/paymentsystems/coin_currcircvalue.htm

[C41] ECB blog, “Making euro cash fit for the future”, 4 Aug 2025

- Read level: full page (read in full, November 2026).
- Supports: 30.4 billion euro banknotes in circulation, ~EUR1.6tn value; growing 2.3%/yr volume, 1.7%/yr value after rate-hike plateau; ~EUR5,000 per euro area citizen.
- Limitations: figures ‘at present’ as of Aug 2025.
- https://www.ecb.europa.eu/press/blog/date/2025/html/ecb.blog20250804~9d3993abe0.en.html

[C42] Sveriges Riksbank, Payments Report 2024, “Few people pay by cash in stores”, 14 Mar 2024

- Read level: key figures and passages read (November 2026); not read in full.

- Supports: 10% of Swedes paid cash for last in-store purchase in 2023 survey, up from 8% 2022; Riksbank caveat: other data suggest continued decline, uptick may reflect cash buffers after Russia's 2022 invasion of Ukraine.
- Limitations: survey measure.
- https://www.riksbank.se/en-gb/payments–cash/payments-in-sweden/payments-report–2024/trends-in-the-payments-market/cash-is-rarely-used-and-the-supply-of-cash-services-is-decreasing/few-people-pay-by-cash-in-stores/

[C43] RBI Annual Report 2017-18, Ch. VIII Currency Management

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: SBNs returned Rs15,310.73bn (VIII.20); denominator Rs15,417.93bn notes outstanding 8 Nov 2016 (The Hindu, 29 Aug 2018, citing same report) = 99.3% returned; banknotes in circulation +37.7% to Rs18,037bn by end-March 2018; RBI printing spend Rs7,965 crore 2016-17 (vs Rs3,421 crore prior year), Rs4,912 crore 2017-18; 522,783 counterfeit pieces detected 2017-18, down 31.4% YoY.
- Limitations: issuer self-reported; unit check: billion not 'lakh crore'.
- https://www.rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1235

[C44] Atlantic Council CBDC Tracker, page updated May 2026

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: 146 countries/currency unions (>98% global GDP) exploring CBDC; 77 in advanced phase; 41 pilots; 3 fully launched retail CBDCs (Bahamas Sand Dollar 2020, Nigeria eNaira 2021, Jamaica JAM-DEX 2022), all slow adoption; e-CNY largest pilot, 3.4bn+ retail transactions ~RMB16.7tn by Dec 2025; US no retail CBDC (wholesale research only); Canada/Australia/Norway deprioritized retail.
- Limitations: secondary tracker; launched/pilot definitions differ across trackers; eNaira conflict resolved 1 Nov 2026: FIJ (C62) documented the wallet app withdrawn and sign-ups failing in Aug 2025, with CBN citing low acceptance and promising revival; this tracker still lists Nigeria as fully launched. The book reports both.
- https://www.atlanticcouncil.org/cbdctracker/

[C45] ECB press release, 30 Oct 2025, digital euro next phase

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: Governing Council moved to next phase after Nov 2023 preparation phase; IF EU legislation adopted during 2026, pilot could start mid-2027, potential first issuance during 2029; dev costs ~EUR1.3bn to first issuance, ~EUR320m/yr operating from 2029; NOT yet pilot or launch.
- Limitations: conditional projection, not law.
- https://www.ecb.europa.eu/press/pr/date/2025/html/ecb.pr251030~8c5b5beef0.en.html

[C46] Federal Reserve, CY2026 currency print order

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: CY2026 print order 3.8-5.1bn notes, $108.9-139.6bn face value; $1 largest by pieces (1,299.2-1,440.0m pieces); $100 largest by value ($75.8-87.7bn); zero $2 notes; circulation rose 0.8bn notes/$43.1bn June 2024-June 2025, below pre-pandemic pace. (Line repaired against the live page 1 Nov 2026.)
- https://www.federalreserve.gov/paymentsystems/2026_currency_print_order.htm

[C47] CCL Secure, Guardian FAQ (VENDOR)

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: polymer used in "over 50 countries"; Guardian substrate on 80bn+ banknotes, 175 denominations, 40+ central banks; film made by sister company Innovia Films.
- Limitations: vendor marketing; no official global ledger of polymer conversion exists.
- https://www.cclsecure.com/guardian/guardian-tm-faqs

[C48] De La Rue announcement (1 May 2025) + Printweek (2 Jul 2025)

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: Authentication division sale to Crane NXT completed 1 May 2025; remaining currency business taken private by Atlas Holdings (ACR Bidco), GBP263m all-cash 130p/share, scheme effective 2 Jul 2025, delisted after ~80 years; De La Rue said banknote demand lowest in 20+ years.
- https://www.printweek.com/content/news/acquisition-of-de-la-rue-completes

[C49] Currency News, "Crane Currency: people, purpose and paper money", 27 May 2025

- Read level: key figures and passages read (November 2026); not read in full.

- Supports: Crane NXT (NYSE: CXT) spun from Crane Co April 2023; acquired De La Rue Authentication Solutions 1 May 2025, combined with TruTag/OpSec into Crane Authentication; currency backlog $105m end-2023, record high, book-to-bill 2.4 (group >$400m May 2025).
- Limitations: trade-press interview.
- https://currency-news.com/news/2025/may/28/crane-currency-people-purpose-and-paper-money/

[C50] Giesecke+Devrient PR, 3 Apr 2025

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: FY2024 record revenue EUR3.132bn (+5% organic), adj. EBIT EUR187m, record order intake EUR3.3bn; segments Digital Security, Financial Platforms, Currency Technology; family-owned, Munich.
- https://www.gi-de.com/en/group/press/press-releases/giesecke-devrient-continues-strong-growth-trajectory

[C51] ECB press release, 21 Feb 2025 (counterfeit euro banknotes 2024)

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: 554,000 counterfeits withdrawn 2024 = 18 per million genuine notes; EUR50 most faked (43.6%), EUR20 (36.0%); 97.8% found inside euro area; above post-COVID lows, below pre-pandemic years.
- https://www.ecb.europa.eu/press/pr/date/2025/html/ecb.pr250221~c0d1113d2c.en.html

[C52] Bank of England banknote statistics page (accessed 1 Nov 2026)

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: 2025 counterfeit rate “typically less than 0.0041%… less than 1 in 24,390”; ~200,000 counterfeits discovered 2025, GBP3.97m face value; GBP20 most counterfeited (178,000 pieces); BoE attributes decline since 2019 to polymer notes, paper withdrawal, police action, electronic payments.
- https://www.bankofengland.co.uk/statistics/banknote

[C53] NPR, 7 Oct 2013, quoting USSS spokesman Brian Leary

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: 2013 redesigned $100 note entering circulation (blue 3D security ribbon, colour-shifting numeral, microprinting); as of 2013, <0.01% of US dollars in circulation fake; ~$66m seized and ~$95m passed that year.
- Limitations: 2013 vintage, must be dated in text.
- https://www.npr.org/sections/thetwo-way/2013/10/07/230179216/all-about-the-benjamins-u-s-introduces-new-100-note

[C54] BIS Quarterly Review, March 2018, Bech/Faruqui/Ougaard/Picillo, “Payments are a-changin’ but cash still rules”

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: cash in circulation rose 7% to 9% of GDP (2000-2016, CPMI members + 22 countries) while card payments grew; increase concentrated in large denominations (store-of-value demand); Sweden <2% of GDP vs Japan 20%; only Russia and Sweden showed card-for-cash substitution.
- https://www.bis.org/publ/qtrpdf/r_qt1803g.htm

[C55] BIS CPMI Briefs 25 Mar 2025 (2023 Red Book) and 27 Apr 2026 (2024 Red Book)

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: 2023 data: digitalisation with further decline in circulation but cash withdrawals stabilised; 2024 data: withdrawals declining, circulation “largely stabilised”.
- https://www.bis.org/publications/202604-commentary-red-book

[C56] LA Times, 23 Jan 1991 (contemporaneous) + USSR Presidential Decree 22 Jan 1991 No UP-1329

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: Pavlov reform: 1961-series 50- and 100-ruble notes withdrawn at midnight 22 Jan 1991; three days to exchange; max 1,000 rubles per person without proving legal origin to special commissions; savings withdrawals restricted; the two denominations over a third of cash in circulation; average monthly wage ~285 rubles.
- Limitations: contemporaneous journalism for mechanics.
- https://www.latimes.com/archives/la-xpm-1991-01-23-fi-534-story.html

[C57] ECB press release, 28 Feb 2002 + EU euro exchange page

- Read level: key figures and passages read (November 2026); not read in full.

- Supports: 1 Jan 2002 euro notes/coins alongside legacy; euro sole legal tender from 28 Feb 2002 (Netherlands 28 Jan, Ireland 9 Feb, France 17 Feb earlier); legacy banknotes fell EUR270bn (1 Jan) to EUR42bn (26 Feb); euro notes EUR133bn to EUR242bn; many NCBs redeem legacy banknotes indefinitely (Germany, Austria, Ireland, Luxembourg); France/Finland/Greece expired 2012.
- https://www.ecb.europa.eu/press/pr/date/2002/html/pr020228.en.html

[C58] Wikipedia, “Hyperinflation”

- Read level: key sections (read in full, November 2026).
- Supports: Weimar Germany 1923 highest denomination 100 trillion marks; 1 trillion marks exchanged per 1 Rentenmark (RM 4.2 = 1 USD); Zimbabwe peak monthly inflation 79.6 billion percent (Nov 2008, Hanke estimate); Venezuela inflation ~1,000,000% by end of 2018 (IMF estimate); Hungary 100 quintillion pengo (10^20) 1946 largest denomination ever officially issued; Zimbabwe $100 trillion note most zeros shown on a circulating note.
- Limitations: tertiary; Zimbabwe/Venezuela figures are estimates.
- https://en.wikipedia.org/wiki/Hyperinflation

[C59] Wikipedia, “Polymer banknote”

- Read level: full article.
- Supports: Tyvek polymer notes experimentally issued by Haiti, Costa Rica and Isle of Man from 1982 (developed by American Bank Note Company); modern BOPP substrate; Australia first full conversion 1996-1998 context.
- Limitations: tertiary.
- https://en.wikipedia.org/wiki/Polymer_banknote

[C60] U.S. Currency Education Program (uscurrency.gov), circulation data page

- Read level: key figures and passages read (November 2026); not read in full.
- Supports: official estimate that as much as one-half of the value of US currency circulates abroad.
- Limitations: official estimate, not a measurement.
- https://www.uscurrency.gov/life-cycle/data/circulation

[C61] Sveriges Riksbank, press release, "Introduce obligation to accept cash and strengthen banks' responsibility for cash", 19 May 2025

- Read level: full.
- Supports: obligation to accept cash for essential goods; banks' cash-handling responsibility; private deposit requirement; Thedéen: "urgent legislative action is needed to protect" cash infrastructure.
- Limitations: advocacy of proposals.
- https://www.riksbank.se/en-gb/press-and-published/notices-and-press-releases/press-releases/2025/introduce-obligation-to-accept-cash-and-strengthen-banks-responsibility-for-cash/

[C62] Foundation for Investigative Journalism (FIJ), "CBN's eNaira Inaccessible, Quietly Pulled Offline", Opeyemi Lawal, 30 Aug 2025

- Read level: full.
- Supports: eNaira launched Oct 2021; by Aug 2025 Speed Wallet app withdrawn and sign-up OTPs failing; CBN said 13 Aug 2025 it was working to revive it and that it failed on low acceptance and awareness.
- Limitations: single-outlet report; revival status unknown.
- https://fij.ng/article/cbns-enaira-inaccessible-quietly-pulled-offline/