HISTORY OF PRINTED MONEY

The history of printed money is as old, in some ways older, than minted money. Before coins were invented in about 660BCE, when trade was basically barter, and goods and products were traded back and forth between tradesmen, artisans, citizens and officials, excess goods were stored at home, or in community warehouses or other public facilities. This necessitated the development of methods to keep track of who had what stored where – leading to the development of writing itself.

Babylonian Clay Receipt
3250 BC

The earliest clay-tablet storage records so far discovered were small, usually square, relatively thin, bits of clay with a few symbols representing various products and their quantity pressed into the clay and given as receipts to the people depositing their produce in common warehouses. Since these products were fungible; i.e. exactly alike, its probable that from the first day, people owning such receipts began to trade them for goods or other receipts for different stored products owned by other people. These exchanges would have been much more convenient than trying to carry large quantities of products home, to a shop, or from one storage location to another. Thus, with little conscious recognition, and no doubt crude by modern standards, hand-printed (albeit on clay) money was born. Only later, when tradesmen realized some highly-regarded metals, especially gold and silver, could be traded for just about any product would coins have been invented.

Although "paper money" is a term used to describe most government and institutional printed money, the term is a misnomer. It would be far more accurate to refer to banknotes as "printed money", because can also be found made of clay, wood, pounded bark, cloth, leather, parchment, metal foils, and in recent years, plastic with paper-like characteristics.

Russia, 25 Rubles, Printed on parchment leather c.1816.
Issued for use in Russian-Alaska Territories
(Photo courtesy of Numismondo.com)

Printed or written money as we know it is nothing more than a receipt for goods, services or labour, which can be traded for other goods, services or labour in lieu of coins or specie.

Use of receipts representing money in the modern sense can be traced to early Roman times, when money lenders would accumulate deposits of coin to lend to borrowers, and write receipts to depositors to certify ownership of the amounts deposited and lent out. Some money lenders would let depositors endorse their receipts to third parties. Once receipts for specific amounts of value, but not specifying a bearer by name, were written and circulated, true paper money came into being.

Lenders also formed business liaisons between themselves, recognizing and accepting receipts issued by other members of the same group, such as a banking guild. This practice soon broadened to include lenders in other towns, some significantly distant from one another. Given the dangers of travel between population centres 2000 years ago, the convenience for travellers of obtaining a certificate of deposit from a lender in one place, recognized by a lender in another, was a great advance over carrying large amounts of gold or silver on their person. As for the lenders, when they needed to clear balances, they could pool their resources to form guarded caravans to protect the movement of gold between cities. Few individual travellers could afford such services on their own.


Gold Coin of Emperor Trajan
Issued c. 112-114 AD
(Courtesy of Classical Numismatic Group Inc.)

Surviving literature from the Roman period does not confirm money lenders went to the next level of writing and circulated bearer receipts representing specific, repeated,

face-values in gold or coin. If they had, the concept would have constituted the first paper money in the modern sense of the term. Based on available ancient sources of information, the honour of inventing and using paper money in that manner goes to the Chinese.

The first mention of the use of paper as money is found in historic Chinese texts. Emperor Chen Tsung (998-1022) awarded rights to issue universal bills of exchange to 16 merchants during his rein. When, however, several of these merchants failed to redeem notes on presentation, the credibility of the money was undermined and the public refused to accept it. In 1023, the Emperor rescinded the merchants' issue rights and established a Bureau of Exchange within the government charged with issuing circulating paper notes. These are now considered the first true government-issued banknotes. Printing plates made of brass from this period have been found by archaeologists and have been used to print recreated examples of these early banknotes. No original-issue notes of this series are known to have survived.

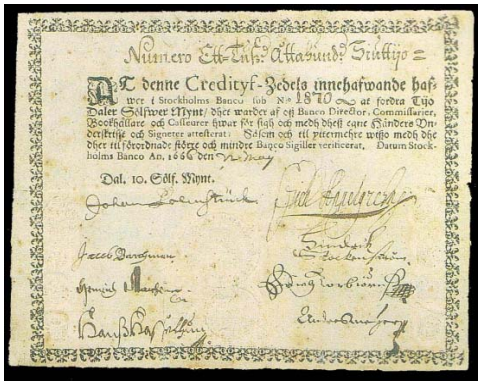
In 1296, Marco Polo, describing his travels in China, made a fleeting reference to paper used as money in the Chinese Empire. Europeans found the idea so preposterous and unbelievable, the very credibility of his accounts of having traveled and lived in China were questioned.

The oldest existing original banknote found to date was a fragment discovered in a cave. This banknote was issued by the Chinese Emperor Hiao Tsung sometime between 1165 and 1174. On its face, this surviving, rather sophisticated example depicted the amount or number of coins it represented, and is clearly descended from earlier issues, none of which have survived.

1 Kuan Banknote
China - Ming Dynasty
1368-1399
(Courtesy of Numismondo.com)

The first true banknotes from Europe were issued in Sweden in 1661. Much debate accompanied the issue, with some officials and merchants predicting paper money would herald the downfall of the country's monetary system. To overcome

such objections, the monetary authorities issued the banknotes with no fewer than 16 certifying endorsements from prominent and trustworthy officials – all signed individually by hand! Backed by the government's guarantee to redeem the banknotes in specie, they were an immediate success, replacing the necessity to carry large, heavy, easily stolen quantities of gold or silver.



Sweden, 10 Daler Silvermynt
P-A57, 1666
(Courtesy of Numismondo.com)

Within months, other European governments and merchants, observing the convenience, safety, and boost to commerce Sweden's experiment gave to its economy, issued paper money of their own.

Unfortunately, not all issuers were as meticulous as Sweden when it came to backing their currency with specie. Realizing not all the banknotes circulated would be redeemed, governments began issuing banknotes exceeding the value of the gold and silver in their treasuries. Further, whenever more money was needed, princes, banks and other issuers of money found it easy to print up another batch – which is exactly what they did. Most early printed money soon devalued, sometimes to the point of becoming worthless. (A lesson some governments today have yet to learn.)

The concept of paper money being new, most countries of the time lacked laws governing who could print money. Counterfeiting laws making it illegal to copy existing coins were updated to cover paper money, but few countries had prohibitions against anyone issuing their own currency. Soon states, principalities, cities, banks, guilds, institutions, and even private individuals – just about anyone with access to a printing press – started churning out banknotes. Indeed, the only hindrance to such issues was the public's readiness to accept any given banknote.

Under such circumstances, the face value of many banknotes became almost meaningless. A banknote's value was determined by the reputation of the issuer and the amount of specie backing it. Some notes were not accepted at all, rendering them worthless. Others were accepted only at a

discount from face value – which at times could be ten percent or lower. A rare few banknotes actually circulated at more than face value, especially if the issuers specified they would honour the banknote's exchange for specific amounts of gold or silver – metals which themselves often fluctuated in value.

These conditions presented the public with new problems. How could the man on the street know which banknotes were good and which were not? Newspapers helped by publishing lists of issuers and the discounts applicable to their banknotes. Banks, many of which circulated their own banknotes, also traded information. And, overlying the official networks, rumor often played a major roll in determining transaction exchange rates. Even a hint someone's wife's friend had trouble exchanging a banknote with an issuer was enough to undermine confidence in the issuing agency – driving some issuers to undeserved, premature bankruptcy.

Overall, however, the public's skepticism was well founded. Not only did some governments and other issuers of banknotes circulate banknotes with accumulated face values exceeding reserves, some of the more unscrupulous issuers circulated money with no backing at all – counting instead on less-knowledgeable users accepting them without questioning the note's provenance.

Unscrupulous issuers had a bag of tricks to avoid redeeming their banknotes. One method was to issue good money printed on poor-quality paper – the issuer hoping the paper would disintegrate before it was redeemed. Another was for the issuer to change addresses or even move to a different town. Or, issuers would circulate notes with sound specie backing and then, when their banknotes were well established, abscond with the backing gold or silver.

Gilmore, Texas, $1,1 October 1863
Tissue-thin Paper
(Courtesy of HA.com)

Not least were the counterfeiters. A few good artists made and circulated reproductions meticulously drawn by hand – a method which, given the amount of labour involved and the difficulty of reproducing a printed product, was probably not practiced extensively. Recognizing an opportunity, would-be counterfeiters were a problem from the beginning, whether in

China or Europe. Edicts are known specifying death to counterfeiters dating from the first kingdoms issuing money. The earliest known Chinese banknotes carried warnings against counterfeiting, implying they too had to contend with the problem.

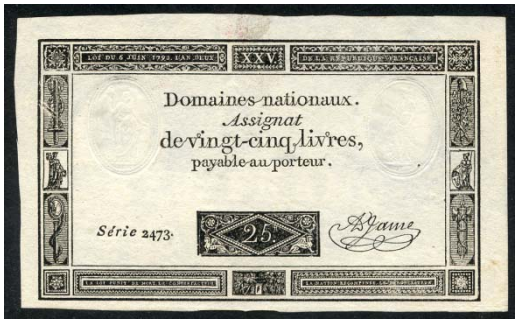
Elaborate engraving was not well developed when banknotes were first issued in Europe. Indeed, until about 1820, most banknotes tended to be rather crude – which meant they could easily be duplicated. Some early issues were so widely copied the counterfeits in circulation outnumbered legitimate banknotes. With public confidence in the balance, banknote designs became more sophisticated. Unfortunately, so did the counterfeiters.

The battle to thwart counterfeiters continues to this day. Early deterrents relied on punishment – principally death, but also some imaginative tortures to halt the practice. How effective these methods were is open to debate, but we can be sure the persons caught did not continue counterfeiting!

Detecting counterfeit banknotes is the second front in the battle against them. By definition, a fake banknote cannot be redeemed. The disadvantage of this position is it forces an innocent holder of a phony banknote to absorb the loss. Once discovered, a bad note is usually confiscated without reimbursement to the losing holder. Since counterfeiters usually concentrate on high-value banknotes, losses can be substantial.

Early banknotes usually relied on the difficulty of reproducing signatures and embossed seals to discourage reproduction. Generally applied by hand by specifically authorized persons, the task of signing each piece of money must have been onerous. Picture being that person and someone dumps hundreds of banknotes on your desk, each to be hand-signed in the same way, from first to last.

Special papers and inks were also employed in the making of banknotes. French Assignaughts, for example, included watermarks in their paper. The American colonies often printed banknotes on paper infused with mica particles. Sometimes high-denomination banknotes were printed in multiple colours, counting on separate passes through the press needed for the application of each colour to be too complicated for most counterfeiters to duplicate.



France, 25 livres, Assignat, P-A71
6 June 1793
Note validating seal impressions.
(Watermark does not show in scan.)

Several well-known early Americans applied their skills to outwitting counterfeiters. Paul Revere, a renowned silversmith (and early American patriot) engraved plates for Colonial banknotes. Benjamin Franklin, a printer by trade, came up with the idea of using tree leaves to print a vignette on the backs of banknotes, based on the observation no two leaves have exactly the same pattern of veins, thereby making the duplication of a banknote impossible. Impressions used were entered into a book, which could then be consulted for comparison whenever a doubtful banknote was encountered. The problem with the concept was the man who possessed the banknote had no way of immediately certifying the note's authenticity. Ordinary citizens probably did not even know where the master book was kept.

United States Continental Currency, $6, 22 July 1776
The leaf impression on the back was to prevent counterfeiting.

Other innovative techniques included special ways of cutting the paper surrounding the printed surface of a banknote, applying script to the ***inside*** of the banknote, and in modern times, imbedding metal strips or threads in the paper – a process now employed in the currency of most countries. Some French Assignaughts were printed with printed selvages, which were then cut in a wavy pattern from the banknote, given the same serial number and filed. Suspicious

banknotes could then be compared with the selvage on file to see if the printing on the selvage edge of a questionable banknote exactly mated with the printing on file to determine authenticity. A few other countries also used this technique. The Bank of England printed its pound-value banknotes in pairs, leaving three edges rough and one edge smooth. Different denominations had small, easily missed indents cut at selected points along the unfinished right or left edges.

Romania 10,000 Lei, P-57a, 28 May 1946
Note how selvage on the left side has been cut in a wavy pattern. Since the wavy cut tends to vary slightly between banknotes, the cut-away script can be compared with files to ascertain a banknote's authenticity.

Banknotes of Tibet, printed on paper hand-made from mulberry bark, were, in the paper-making process, when the paper was very thin, written upon, then layered with another thin sheet of paper, imprisoning the inscription within the paper. Held up to the sun or bright light, the inscription could be seen much like a watermark.

Tibet, 25 Srang, P-10a, 1947
Notice the faint, black script across the centre of the banknote. The script was applied to a thin layer of paper, which was then overlaid with another layer, giving the appearance of a watermark. When the paper dried, the banknote was printed.

The next innovation in banknote making was the employment of elaborate engravings to further complicate their reproduction by would-be counterfeiters. This technology was

brought to a high level in about 1840 by the American Banknote Company (ABC), which assembled teams of the best engravers of the time to hand-engrave banknote plates. Different engravers etched each part of a banknote, some specializing in portraits, while others engraved letters, numbers, etc., producing master plates used to make printing plates. Advanced for the time, a number of countries, including the United States, turned to the ABC to print their currency. Today, these banknotes, many of which are masterpieces of art in their own right, are highly regarded and sought after by collectors.

Mexico, Peninsular Bank of Mexico, 5 pesos, 1914
Printed by the American Bank Note Company, New York.

One engraving discovery to emerge in the early 19th century was the realization the faithful portrayal of human skin was extremely difficult – a skill mastered by few engravers. Exploiting the difficulty, despite the prudish mores of the time, many 19th century banknotes feature vignettes of nudes, presumably on the theory that the more skin the better. The Banque de France extensively employed the technique on French and colonial banknotes. The practice may have reached its peak on Finnish banknotes issued in the 1930s portraying happy groups of nudists.

Bolivia, 20 bolivianos, P-109b, 1911
Mercury, as the Roman God of Money (among other titles) often appears on money.
Engravers like to use his image, because he can be depicted nude.
This banknote was printed by the American Banknote Company.

Finland, 1000 Markkaas, P-67a, 1922
The inclusion of nudes on a banknote probably reached its zenith on this Finnish banknote with 13 depicted.
(Courtesy of Numismondo.com)

Although outwitting counterfeiters was the primary objective behind printing advances, necessity was also a force. By the mid-19th century, paper money was becoming more acceptable to people as a media of exchange. Expanding commerce and the industrial revolution saw a commensurate leap in the size and volume of financial transactions. The amount of money needed could no longer be physically or safely carried through the streets. Nor was it practical to move coin in huge amounts from one depository to another. Paper money filled the gap! And, it had to be secure.
Printed money was a perfect substitute for specie held secure in a single location. To facilitate security and counting, banking needs soon required high-denomination banknotes. Sound, trustworthy banks and some reserve banks and governments began to print and circulate banknotes with face values representing enormous sums of money in the 19th century. The United States produced banknotes of $1,000, $5,000, and $10,000. The Bank of England had £1,000 notes. France used Fr5,000 and so on.

United States, $5000, 1878
(Courtesy of Heritage Auctions, HA.com)

Some of these banknotes represented years of wages to the average worker. But the notes were not issued just to puff-up national vanity, they served real purposes. In a world where credit cards, large multi-branch banks, and electronic banking had not yet been invented, if someone bought a house, they had to pay in cash. Only the upper classes had chequing accounts. If in America for example, they might have paid with a $5,000.

If, however, they paid with a cheque, their bank might hold the cheque until it had accumulated several on another bank. At some point, probably every few days, the bank would have sent those cheques over to the bank they were written upon, and that bank would have returned to the first bank a banknote of $10,000.

The very highest denomination banknotes rarely circulated with the public. They were used primarily for intra-bank transactions. In the 1930s, in the United States, notes with a face value of $100,000 were printed exclusively for use between the nation's 12 Federal Reserve Banks. Similarly, the Bank of England printed nine £1 million pound notes for intra-international central-bank use covering transactions involved with administration of the post-World War II Marshall Economic Recovery Plan. (These banknotes have since been demonetized. Seven were destroyed. Two, serial numbers 7 and 8, are now in collector hands.)

Great Britain, £1 million, 1948
Issued to aid in the administration of the Marshall Plan
(Courtesy of Spink Auctions, London)

The next major innovation incorporating security features in banknotes was the insertion of one or more metallic threads in paper used for printing banknotes. Although the technique was patented in 1848, Great Britain was the first country to issue banknotes with the device one-hundred years later in 1948. When held up to light, the thread, which usually is embedded from top to bottom, stands out as a black line through the note. To thwart this device, counterfeiters simply drew a black line down the face of their notes – crude, but effective in dim light.

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Trinidad and Tobago, $50, P-34a, 1964
The embedding of a metallic thread (arrows) as an anti-counterfeiting measure was first employed by Great Britain in 1948.

In 1984, the Bank of England issued a £20 note with a broken security thread forming a series of 4 mm dashes appearing to weave in and out of the face of the banknote. At the time, this was publicized as the epitome of anti-counterfeiting technology – said to be impossible to replicate. As this writer heard the story, counterfeits began appearing within months. After printing their spurious notes, the counterfeiters merely made a series of dashes across the face of their notes with super-glue, stuck thin aluminum foil to the glue, and then peeled it off – a nearly perfect imitation of a metallic thread running in and out of the paper!

Since those early pursuits, most countries now incorporate some form of security thread in their banknotes. Modern threads may be made of metal, plastic or some other material, come in different colours, varying widths, weave from one side to the other, have micro-printed surfaces, and even be machine readable for counting and identification purposes. In addition, threads are rarely used alone. purposes. In addition, threads are rarely used alone.

Nearly all modern banknotes incorporate multiple anti-counterfeiting devices. Some, especially high-denomination notes, may have as many as fifty such elements, some obvious, some secret. These range from multiple alphabetical fonts, differing sizes and shapes for letters and digits in serial numbers, to special inks that can only be seen under ultra-violet or infrared light. Heat transfers of optical variable devices (OVD) and/or holograms are also favoured on modern banknotes.

Eastern Caribbean, $50, P-40d, 2000
Security features include windowed thread, vertical and progressive-Size serial numbers, foil orchid (upper right) and perfectly align-ment with back printed fish (lower left).

Egypt, £20, back of P-65, 2003
The small circles in the watermark, called "Omron Rings" are a recent security feature.

Australia pioneered the use of banknotes printed on polymer instead of paper. Not only do these banknotes have a longer life than paper banknotes, but by incorporating see-through windows in each note, they have proven to be almost impossible to replicate without expensive, special machinery. As this is being written, approximately 26 countries are now using the Australian technology for some or all of their banknotes.

Australia, $10, P-49a, 1988
Issued to commemorate the arrival of the first colonial settlers in 1788. Although banknotes printed on a plastic substrate had been tried previously, this issue was the first successful polymer banknote. In addition to being more secure, with its see-through window, the banknote also had a much longer life than banknotes printed on paper.

The banknotes of the future will have even more amazing security devices. Advances in coatings and inks will enable banknotes to be printed that will light-up or change colours when handled. Metallic strips heat-sealed to the polymer or paper can be impregnated with information. It will soon be possible to have banknotes which will add themselves up when they are deposited into a cash register, or subtract when taken out. Wallets can be designed, which will read the strips on the banknotes and show you instantly how much money you have in your wallet the moment you open it. Similar processes will permit banknotes to be identified if they are stolen. It should be possible to alert public transportation turnstiles to signal authorities if a specific banknote passes near special detectors. Most of these features can be expected within five years.

As we have seen, coupled with a little bit of knowledge about the evolution of the features that distinguish them, banknote collecting can be a fun and rewarding hobby. The same features making stamp collecting interesting can be applied to banknote collecting – with the added appeal that banknotes are bigger, tend to be changed less frequently, and are issued in fewer numbers than stamps. Indeed, ask a banknote collector how he or she came to collect banknotes, most will tell you they started collecting stamps, moved to coins, and as their income improved, started collecting banknotes. It’s a great hobby!

Melbourne, Australia, 20 July 2008

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www.CNGCOINS.com

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