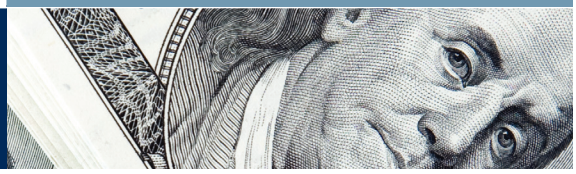
Payments Perspectives



Costs of Keeping Ahead of Counterfeiters

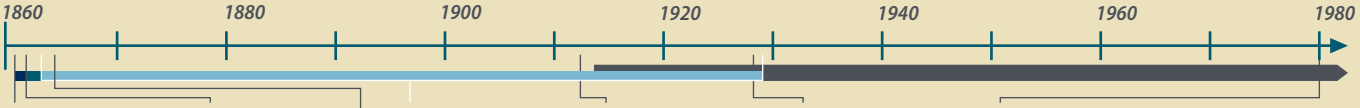
Money has been counterfeited since coins came into use in ancient times. In the United States, the Secret Service was founded in 1865 to address counterfeiting of the national currency that had been established three years earlier.

Over time, staying ahead of counterfeiters has been crucial to maintaining confidence in the integrity of the dollar both in the United States and abroad. To this end, the U.S. Department of the Treasury seeks to "apply continuous downward pressure on the penetration of counterfeit notes," as Peter R. Fisher, Under Secretary of the Treasury for Domestic Finance, stated in 2003.[1] Although public education, good design, and law enforcement are major contributors toward this goal, the Reserve Banks serve as the filter of last resort for counterfeit currency passed into circulation. It is, therefore, imperative that Federal Reserve cash operations have the correct equipment to ensure that the used currency reissued into circulation is counterfeit-free and fit for commerce.

The estimates regarding the amount of counterfeit currency in circulation have varied over time. According to one 2003 Federal Reserve study, approximately $1 to $2 of every $10,000 in circulation may be counterfeit.[2] In a joint report to Congress published in 2006, the estimate was lowered to $1 for every $12,400 in circulation.[3] Today, the value of currency in circulation is estimated to be $918 billion, of which Federal Reserve Notes circulating outside Fed vaults make up more than $880 billion. If one assumed that counterfeit passing activity grew proportionately with the value of Federal Reserve Notes in circulation, there would be approximately $70 million in counterfeit currency in circulation today using the rate estimated in 2006.

While the U.S. currency design introduced in 1928 lasted several decades, counterfeiters in more recent years have taken advantage of advances in technology to enhance their illicit products. With the proliferation of inexpensive office equipment, software and Internet-based information exchange during the 1990s, a new wave of "casual counterfeiters" began to supplant the quality of traditional printing methods with quantity and ease of access to readily available "spending money."

At a Glance: Currency in the United States



1861: United States Treasury prints and circulates paper "demand notes," also known as "greenbacks," to help finance the Civil War.

1862: Congress retires demand notes and authorizes issuance of legal tender.

1865: Secret Service established to help combat counterfeiting of national currency.

1863 to 1929: Banks permitted to issue their own notes produced on government-authorized paper and carrying the same basic design.

1913: Federal Reserve Act creates Reserve Banks, which in 1914 begin issuing Federal Reserve Notes.

1928: Basic face and back design of currency adopted.

1980s: Printing professionals based in South America band together in loose confederations. Fueled by money made in illicit drug and arms trafficking, they share traditional printing methods and materials, introducing a more sophisticated type of counterfeit.

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At a Glance: Currency in the United States

1989:
A bank teller in Manila, Philippines, detects a note that doesn't seem quite right. The discovery of this first highly deceptive note blossoms into an international investigation on what is popularly referred to as the "Supernote."

1990:
Currency redesign to address advances in traditional printing methods that had led to high-quality or highly deceptive counterfeits.

1990s:
Proliferation of inexpensive office equipment, software and Internet information leads to a new wave of "casual counterfeiters."

1996:
Currency redesign includes adding a watermark, color-shifting ink and a large offset portrait. Government commits itself to ongoing redesigns on a schedule of roughly one new design every seven to 10 years.

2000s:
Color and other features added to U.S. currency to prevent users of copying machines, scanners and printers from illegally reproducing Federal Reserve Notes.

Sources: U.S. Department of the Treasury, U.S. Secret Service, Federal Reserve System

As a result, the United States has had to improve currency designs with greater frequency. The redesign of Federal Reserve Notes in 1990 followed advances in traditional printing methods that had led to high-quality or highly deceptive counterfeits. With the 1996 series design, the government committed itself to ongoing redesigns on a schedule of roughly one new design every seven to 10 years. In 1996, the redesign included adding a watermark, color-shifting ink and a large offset portrait. In the early 2000s, as digital counterfeiting emerged as a threat, color and other features were added to U.S. currency to prevent users of copying machines, scanners and printers from illegally reproducing Federal Reserve Notes.

"The rise of highly deceptive counterfeits has led us to ratchet up the level of sophistication of legitimate notes," said Andrew McAllister, vice president for the Federal Reserve System's Currency Technology Office, which is headquartered at the Federal Reserve Bank of Richmond.

The CTO is integral to currency redesign cycles. Its mission is to serve as the technical arm of the Cash Product Office (CPO), which is based at the Federal Reserve Bank of San Francisco, and to provide customer support services to the cash processing offices of the Federal Reserve System, the Bureau of Engraving and Printing, and the Secret Service on behalf of the CPO. The CTO's focus is on the automation of physical currency handling and the Federal Reserve System's high-speed currency processing environment.

The continuous drive to stay ahead of counterfeiters results in costs to governments that design new currency and upgrade cash-processing equipment, to companies that utilize cash-accepting equipment, and to consumers who pay indirectly for these efforts. For example, a U.S. currency redesign can result in equivalent costs of up to $390 million for non-recurring equipment upgrades for manufacturers of cash-accepting devices, based on available government data.[4] By comparison, the Federal Reserve Board for each of the past three years has budgeted an average $610 million for printing, shipping, counterfeit deterrence and other currency-related costs.[5]

"There's a public cost to staying ahead of the bad guys," said Roland Costa, senior vice president of the Currency Technology Office. "That's the other side of the coin, or bill. The fact that central banks are changing their technology on a regular basis has an impact on the banking and retail communities as well, as they have to adjust to these changes."

Cognizant of these costs, the CTO, in conjunction with the Bureau of Engraving and Printing and the Secret Service, initiated outreach in the late 1990s to original equipment manufacturers of currency-accepting machines. Examples of these machines include retail kiosks, vending and gaming equipment, and automated teller machines that accept deposits.

"U.S. currency redesign can result in equivalent costs of up to $390 million for non-recurring equipment upgrades for manufacturers of cash-accepting devices"

As part of this outreach, the Bureau of Engraving and Printing offers "test decks" of new currency design notes to equipment manufacturers approximately six months before the notes' release. In addition, the CTO offers test decks of genuine current Federal Reserve Notes to equipment manufacturers, who are able to test and calibrate their equipment to various "fitness"

levels. "Fit" currency is that which the Federal Reserve deems suitable for continued circulation, while "unfit" currency is no longer suitable for circulation. Fitness of currency (see http://www.frbservices.org/files/operations/pdf/FRB_fitness_guidelines_2008_dec_11.pdf) takes into account the degree of soiling and ink wear, as well as holes, tears and other factors.

The CTO also offers counterfeit notes in collaboration with the Secret Service to vendors for testing purposes. Original equipment manufacturers can schedule visits to the Currency Technology Office to test their machinery and make needed adjustments. Information about how currency wears when processed through manufacturers' equipment can also aid in the redesign of notes.

The $100 Federal Reserve Note – the most widely circulated and counterfeited denomination in the world – will debut a new design in late 2010 or early 2011. Future redesigns may also aid the blind and visually impaired populations.

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The views expressed in this article are those of the author(s) and not necessarily those of the Federal Reserve Bank of Richmond or the Federal Reserve System.

Endnotes:

[1] "The Objective for U.S. Currency Design is Continuous Improvement," Peter R. Fisher, Under Secretary for Domestic Finance, Department of the Treasury, Keynote Address to Banknote 2003 Conference, Washington, D.C., Feb. 2, 2003. (http://ustreas.gov/press/releases/kd3822.htm)

[2] "Estimating the Worldwide Volume of Counterfeit U.S. Currency: Data and Extrapolation," Ruth Judson and Richard Porter, Division of Monetary Affairs, Board of Governors of the Federal Reserve System, 2003. (http://www.federalreserve.gov/pubs/FEDS/2003/200352/200352pap.pdf)

[3] "The Use and Counterfeiting of United States Currency Abroad, Part 3," Board of Governors of the Federal Reserve System, The Department of the Treasury, United States Secret Service, September 2006. (http://www.federalreserve.gov/boarddocs/RptCongress/counterfeit/)

[4] "Study to Assess Options for Enabling the Blind and Visually Impaired Community to Denominate U.S. Currency," Department of the Treasury, Bureau of Engraving and Printing (ARINC Engineering Services), July 2009. (http://www.moneyfactory.gov/images/ARINC_Final_Report_7-26-09.pdf)

[5] "2009 New Currency Budget" and "2008 New Currency Budget" (two documents), Board of Governors of the Federal Reserve System. (http://www.federalreserve.gov/generalinfo/foia/2009newcurrency.htm and http://www.federalreserve.gov/generalinfo/foia/2008newcurrency.htm)

Related Links:

Federal Reserve Financial Services, Currency Quality Program (http://www.frbservices.org/operations/currency/currency_quality_program.html)

U.S. Secret Service, Public Web Site, "Know Your money." (http://www.secretservice.gov/know_your_money.shtml)

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