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U.S. CURRENCY

Actions Needed to Improve Coin Inventory Management

Statement of Lorelei St. James,
Director, Physical Infrastructure

GAO Highlights

Highlights of GAO-14-601T, a testimony before the Subcommittee on Monetary Policy and Trade, Committee on Financial Services, House of Representatives

Why GAO Did This Study

Efficiently managing the nation's inventory of circulating coins helps to ensure that the coin supply meets the public's demand while avoiding unnecessary production and storage costs. This testimony is based on GAO's October 2013 report on the Federal Reserve's management of the circulating-coin inventory. It addresses (1) how the Federal Reserve manages the circulating coin inventory and the related costs, (2) the extent to which the Federal Reserve follows key practices in managing the circulating-coin inventory, and (3) actions taken to respond to potential changes in demand for currency (coins and notes).

What GAO Recommends

GAO's October 2013 report included several recommendations to the Federal Reserve to ensure the efficient management of the coin inventory and potentially to reduce costs. These included recommendations (1) to develop a process to assess factors influencing coin operations costs and identify practices that could lead to cost-savings and (2) to establish additional performance goals and metrics relevant to coin inventory management. The Federal Reserve generally agreed with the report's recommendations and, in response, has developed a plan for addressing them.

View GAO-14-601T. For more information, contact Lorelei St. James, (202) 512-2834, stjamesl@gao.gov.

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What GAO Found

In 2009, the Federal Reserve centralized coin management across the 12 Reserve Banks and established national inventory targets to track and measure the coin inventory. However, based on GAO's analysis of Federal Reserve data, from 2008 to 2012, total annual Reserve Bank coin-management costs increased by 69 percent, and more specifically, costs at individual Reserve Banks increased at rates ranging from 36 percent to 116 percent. GAO found in October 2013 that the Federal Reserve did not monitor coin management costs by each Reserve Bank—instead focusing on combined national coin and note costs—thus missing potential opportunities to improve the cost-effectiveness of coin-related operations. Furthermore, the agency had not taken steps to systematically assess factors influencing coin management costs and identify practices that could lead to cost savings.

In managing the circulating-coin inventory, the Federal Reserve followed two of five key inventory management practices GAO identified and partially followed three. For example, the agency followed the key practice of collaboration because it has established multiple mechanisms for sharing information related to coin inventory management with partner entities such as depository institutions. The Federal Reserve partially followed the key practice of performance metrics, which involves identifying goals, establishing performance metrics, and measuring progress toward goals. While the Federal Reserve had developed some performance metrics of upper and lower national coin-inventory targets, it had not developed goals or metrics to measure other aspects of its coin supply-chain management, such as costs. Establishing goals and metrics, such as those related to coin management costs, could aid the Federal Reserve in using information and resources to identify additional efficiencies.

To collect data and information on potential changes in the demand for currency (coins and notes), the Federal Reserve has conducted studies and outreach with groups such as depository institutions and merchants, and found a general consensus that the use of currency may decline slightly in the near term. This expectation is due, in part, to an increase in alternative payment options (e.g., additional forms of electronic payments), but interrelated factors—such as technological change and economic conditions—make it difficult to predict long-term currency demand. In 2010, the Federal Reserve began to develop a long-term strategic framework to consider potential changes to currency demand over the next 5 to 10 years and how this change could affect operations. This effort includes, among other things, examining internal operations for distributing coins and processing notes as well as conducting research into the use of payment types to understand currency use in the United States to better position the agency to adapt to future changes in demand.

Chairman Campbell, Ranking Member Clay, and Members of the Subcommittee:

I am pleased to be here today to participate in this hearing that examines the Federal Reserve System's management of the circulating coin inventory. Efficiently managing the nation's inventory of circulating coins helps to ensure that the coin supply meets the public's demand while avoiding unnecessary production and storage costs. The Federal Reserve System's 12 Federal Reserve Banks (Reserve Banks) fulfill the coin demand of the nation's depository institutions (e.g., commercial banks, federal savings associations, and credit unions) by managing coins held in inventory and ordering new coins from the United States Mint (U.S. Mint). In 2013, the U.S. Mint produced 10.7 billion coins. According to the Department of the Treasury (Treasury), coins worth approximately $42.6 billion were in circulation at the end of fiscal year 2012. The Federal Reserve System is comprised of a Board of Governors (Board) and the Reserve Banks, which are self-funded entities that engage in a variety of activities that generate revenue, such as earnings from lending to financial institutions. The costs of operating the Federal Reserve System are deducted from these revenues, and the remaining amount is transferred to the General Fund of the U.S. Treasury (General Fund). In 2012, the Federal Reserve System transferred $88.4 billion to the General Fund.

In October 2013, we issued a report on the Federal Reserve's management of the circulating coin inventory and made several recommendations to the Federal Reserve to ensure the efficient management of the inventory and potentially to reduce costs.[1] My statement today is based on that report and addresses (1) how the Federal Reserve manages the circulating-coin inventory and the related costs, (2) the extent to which the Federal Reserve follows key practices in managing the circulating-coin inventory, and (3) actions taken to respond to potential changes in demand for currency (coins and notes). For the October 2013 report, we interviewed federal and foreign officials, experts, and industry representatives; reviewed documents and data on coin inventories; and compared the Federal Reserve's coin inventory management practices to key practices in supply-chain management.

[1]GAO, *U.S. Currency: Coin Inventory Management Needs Better Performance Information*, GAO-14-110 (Washington, D.C.: Oct. 28, 2013).

More detailed information on our objectives, scope, and methodology for that work can be found in the issued report. We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Inventory Management Has Been Centralized; Rising Costs Have Not Been Analyzed

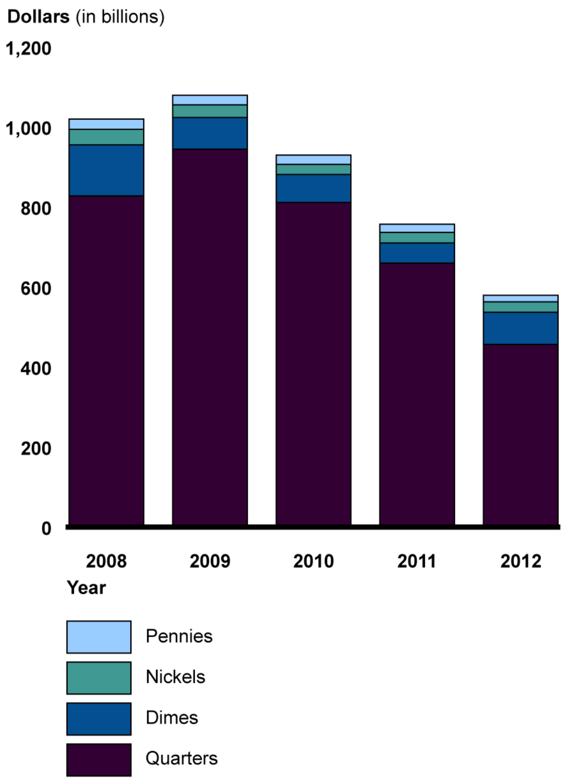
Coin Inventory Management

In 2009, the Federal Reserve centralized coin management across the 12 Reserve Banks and established national inventory targets. Previously, each Reserve Bank office set and managed its own inventory levels, resulting in varying levels of inventory held relative to demand. Under the centralized approach, the Federal Reserve's Cash Product Office (CPO) manages distribution of the coin inventory, orders new coins, and acts on behalf of the Reserve Banks in working with stakeholders, such as depository institutions. From 2008 through 2012, the combined inventory for pennies, nickels, dimes, and quarters decreased 43 percent, due, in part, to the centralized program.[2] (See fig. 1.) In 2009, CPO also established national upper and lower inventory targets for pennies, nickels, dimes, and quarters to track and measure the coin inventory. CPO officials noted that these targets help meet their primary goal in managing the nation's coin inventory: ensuring a sufficient supply of all coin denominations to meet the public's demand. The upper national-inventory target serves as a signal for CPO to reduce future coin orders from the U.S. Mint to avoid the risk of approaching coin-storage capacity

[2]Our October 2013 report focused primarily on inventory management of pennies, nickels, dimes and quarters. Due to the December 2011 Treasury decision to cease production of new $1 coins for circulation, the Federal Reserve's current management of the $1-coin inventory is focused on managing those $1 coins already in storage or circulation.

limits and the lower national-inventory target serves as a signal to CPO that there is a need to increase future coin orders to avoid shortages. We analyzed national inventory targets from 2009 to 2012 and found that in most cases these targets were met.

Figure 1: Reserve Bank Coin Inventory, 2008-2012



Source: GAO analysis of Federal Reserve data. | GAO-14-601T

In managing the coin inventory, CPO determines if coins should be transferred from an area with more coins than needed to fulfill demand or if additional coins should be ordered from the U.S. Mint. If there is an insufficient supply of coins to meet demand and transferring coins from another location would not be cost-effective, CPO orders new coins from the U.S. Mint based on its 2-month rolling forecast of expected demand. After submitting orders to the U.S. Mint, CPO may increase an order or defer shipments to later months based on updated information. In part to respond to these changes, each month the U.S. Mint produces a safety stock of coins.[3]

Coin Management Costs

Our analysis found that in 2012, Reserve Bank costs related to coin management were approximately $62 million.[4] To monitor costs related to currency management, including coins as well as notes, CPO officials said they review these costs at the national level because individual Reserve Banks may vary in their accounting for operational costs related to coins and notes. In October 2013, we found that from 2008 through 2012 total annual Reserve Bank currency-management costs increased by 23 percent at the national level.

While cost information for coins and notes is available separately, CPO does not separately monitor the Reserve Bank's coin management costs. Looking specifically at coin management costs, which include direct and support costs, our analysis found that they increased by 69 percent from 2008 through 2012. More specifically, Reserve Bank direct costs for coin management increased by 45 percent during this period, about $5 million across the 28 offices, and support costs increased by 80 percent, about $19.6 million across these offices. Direct costs include personnel and equipment. CPO officials attributed the increase in coin management costs mainly to support costs. Support costs include utilities, facilities, and information technology as well as other local and national support services such as CPO's services.

Although Reserve Bank coin management costs have risen since 2008, we found in October 2013 that CPO had not taken steps to systematically assess factors influencing direct and support costs related to coin management and assess whether opportunities exist to identify elements of its coin inventory management that could lead to cost savings or greater efficiencies across the Reserve Banks. We also found that the rates of increasing coin management costs differ across Reserve Banks. Specifically, using data provided by CPO on individual Reserve Banks'

[3]Producing a safety stock helps the U.S. Mint respond to changes in monthly coin orders as well as seasonal changes in coin demand. If the safety stock is not applied to the current coin order, it can be used to fill future orders.

[4]Reserve Bank costs include the CPO's administration, coin handling, and interbank coin transfer costs. U.S. government costs related to coin management also include costs for the U.S. Mint's production and distribution of new coins.

costs, from 2008 through 2012, coin management costs increased for all Reserve Banks, with the increases ranging from a low of 36 percent to a high of 116 percent. The Federal Reserve's 2012–2015 strategic plan includes an objective to use financial resources efficiently and effectively.[5] In addition, according to a leading professional association that provides guidance on internal controls, as part of the internal control process, management should ensure that operations, such as managing an inventory, are efficient and cost effective, and this process includes monitoring costs and using this information to make operational adjustments.[6] Without taking steps to identify and share cost-effective coin management practices across Reserve Banks, the Federal Reserve may be missing opportunities to support more efficient and effective use of Reserve Bank resources. To address this issue, in our October 2013 report we recommended that the Federal Reserve develop a process to assess the factors that have influenced increasing coin-operations costs and the large differences in costs across Reserve Banks and to use this information to identify practices that could lead to costs savings. We concluded that taking these actions may help the Federal Reserve identify ways to improve the cost-effectiveness of its coin management, potentially increasing the revenues that are available for the Federal Reserve System to transfer to the General Fund. The Federal Reserve generally agreed with the recommendations in our report, including the above recommendation as well as recommendations discussed below, and has developed a plan for addressing them. In response to the recommendations, the Federal Reserve also noted that it would define a new metric that measures the productivity of Reserve Bank coin operations and that will enable it to monitor coin costs and identify cost variations across Reserve Banks. We will continue to monitor the Federal Reserve's progress in addressing our recommendations.

[5]Federal Reserve System, *Strategic Framework 2012-15* (2013).

[6]Committee of Sponsoring Organizations of the Treadway Commission (COSO), *Internal Control—Integrated Framework* (1992). COSO is a joint initiative of five professional associations dedicated to providing thought leadership through the development of frameworks and guidance on enterprise risk management, internal control, and fraud deterrence.

The Federal Reserve Follows Some Key Practices in Managing the Circulating-Coin Inventory but Lacks Others

In October 2013, we found that the Federal Reserve, in managing the circulating-coin inventory, follows two of five key inventory management practices we identified and partially follows three. Establishing, documenting, and following these key practices contributes to a more effective inventory-management system.[7] Specifically, the Federal Reserve follows key practices for collaboration and risk management and partially follows key practices for performance metrics, forecasting demand, and system optimization. For example, it follows the key practice of collaboration because it has established multiple mechanisms for sharing information related to coin inventory management with partner entities such as depository institutions. In addition, the Federal Reserve follows the risk management key practice because it has identified sources of potential disruptions, assessed the potential impact of risk, and developed plans to mitigate risk at multiple levels of its operations.

In the key practice area of performance metrics, we found that the Federal Reserve has developed some metrics in the form of upper and lower national coin-inventory targets. However, it has not developed other goals or metrics to measure other aspects of its coin supply-chain management—such as costs. Characteristics of this key practice include agencies' identifying goals, establishing performance metrics, and measuring progress toward those goals. We concluded that establishing goals and metrics, such as those related to coin management costs, could aid the Federal Reserve in using information and resources to identify additional efficiencies. To address this issue, we recommended that CPO establish, document, and annually report to the Board performance goals and metrics for managing the circulating coin inventory and measure performance toward those goals and metrics. In its response, as noted previously, the Federal Reserve said that it planned to define a new metric that measures the productivity of the Reserve Bank's coin operations and use this metric to monitor coin costs.

In the key practice area of forecasting demand, we found that the Federal Reserve forecasts future coin demand and uses this information to make decisions, but does not systematically track the accuracy of its monthly

[7] To effectively manage inventory, private and governmental organizations involved in production and distribution operations use supply-chain and operations-management practices. We identified five key supply-chain practices and selected supporting characteristics for each that are applicable to coin inventory management to assess the Federal Reserve's management of the circulating-coin inventory.

forecasts compared to the final coin orders. Our analysis of initial monthly CPO coin orders and final orders (actual U.S. Mint coin shipments) from 2009 through 2012 indicated that initial orders were consistently less than the final orders. A leading operations management industry association that offers professional certifications recommends that forecasting results must be continuously monitored and a mechanism should be in place to revise forecasting models as needed, and that if the forecast consistently exhibits a bias, the forecast should be adjusted to match the actual demand. We concluded that taking additional steps to assess forecast accuracy could help CPO identify the factors influencing forecast accuracy and then adjust forecasts to improve accuracy. To address this issue, we recommended that CPO establish and implement a process to assess the accuracy of forecasts for new coin orders and revise the forecasts as needed. In its response, the Federal Reserve reported that in addition to implementing a more formal program for assessing new coin order forecasts, CPO has begun working to refine the accuracy of its coin forecasts.

In the key practice area of system optimization, we found that CPO does not fully use available information and resources to optimize system efficiencies within the supply chain. Specifically, it does not use the range of information available to establish and track performance metrics to measure progress. Better information related to forecast accuracy and costs—such as the types of information we recommended that the Federal Reserve develop—could aid CPO in using its information and resources to identify inefficiencies and further support the interrelated key practice of system optimization. For example, the U.S. Mint's monthly production of new coins could be more efficient with improvements to the accuracy of initial new-coin orders. In part to improve this linkage, we concluded that optimizing U.S. Mint's and individual Reserve Bank's operations could potentially contribute to reducing U.S. Mint or Federal Reserve costs related to circulating coins.

Demand for Currency Expected to Decline Gradually in the Near Term, but a Variety of Factors Make Predicting Longer-Term Change Difficult

To collect data and information on potential changes in the demand for currency, the Federal Reserve has conducted studies and outreach with groups such as depository institutions and merchants, and found a general consensus that the use of currency may decline slightly in the near term. According to the Federal Reserve, this expectation is due, in part, to an increase in alternative payment options (e.g., additional forms of electronic payments), but interrelated factors—such as technological change and economic conditions—make it difficult to predict long-term (i.e., 5 to 10 years) currency demand. According to many agency officials, stakeholders, and foreign government officials we spoke to, while there may be changes in the use of various types of payments in the coming years, the effect on currency demand is likely a gradual decline.

Federal Reserve officials expect that their current procedures and approach to managing the coin and note inventory—including their forecasting and monitoring of the coin inventory targets discussed previously—will allow the agency to accommodate gradual shifts in demand. For example, to respond to increasing or decreasing demand for coins, CPO can decrease or increase coin orders from the U.S. Mint. According to the officials we met with, CPO is continually working to identify ways to streamline its processes to be more flexible and adaptable to changes, and CPO and the Reserve Banks have established plans and procedures, such as risk management plans, to address the effects associated with short-term, unexpected changes in coin and note demand. Experts we interviewed agree that well-managed currency systems are capable of handling major trend-based changes. According to inventory management experts we consulted, dependable forecasts—that take both trends and cyclical demand changes into account—are key to effectively managing a supply chain. Therefore, we concluded in our October 2013 report that combining forecasts with continual tracking of demand and inventory levels should allow the Federal Reserve to be able to adapt to any major trend-based changes in coin and note demand. As discussed earlier, this makes accurate forecasting by the Federal Reserve even more important.

While Federal Reserve officials we met with indicated their current processes should enable them to adapt to gradual changes in coin and note demand, a significant and unexpected change could affect the management of the coin and note inventories. CPO officials said that if a large decline in coin usage occurs, they would adapt their management of the inventory in response. For example, if demand for coins were to decrease suddenly, leaving too many coins in circulation, the Federal Reserve would first stop ordering new coins from the U.S. Mint and would then focus on storing the excess coin inventory. Coin attrition would reduce this inventory over time, and CPO officials anticipate that they would have sufficient storage capacity available to accommodate the excess coins. CPO officials told us that inventory levels would need to be well in excess of the existing targets before they would have an effect on storage capacity and related costs. While coin terminal operators did not expect a decrease in coin demand significant enough to exceed their storage capacity, additional storage could be needed to accommodate and store the coins returned by depository institutions to the Reserve Banks if there is a substantial decrease in public demand for coins.[8]

In 2010, CPO began to develop a long-term strategic framework to consider potential changes to currency demand over the next 5 to 10 years and how this change could affect CPO's operations. According to Federal Reserve officials, this framework is an internally focused effort to help share information, refine internal operations, and monitor trends. One component of this effort includes examining internal operations for distributing coins and processing notes as well as seeking to increase efficiency in these areas to better position the agency to adapt to future changes in demand. Conducting research is another component of this framework. For example, as part of a broader effort to look at trends in various payment types, one Reserve Bank is examining the detailed spending habits of a selection of consumers, who were asked to document their transactions and payment decisions over a period of time in a shopping "diary." Because determining how much of the currency in circulation is being used for transactions is difficult, this type of study may help officials better understand currency use in the United States. Australian, Austrian, and Canadian officials we interviewed for our 2013 report were also exploring the potential impact of alternative payment technologies and collecting new data to inform research efforts. For example, Austrian and Canadian officials have also conducted diary studies to better understand individuals' use of various payment options. Collecting detailed consumer-payment information through these types of studies may help officials better understand consumers' payment and currency management habits.

[8]Coin terminal operators are armored carrier companies such as Brink's and Dunbar that hold both Reserve Bank and other customers' coins in their facilities.

In conclusion, the Federal Reserve has taken steps to standardize its management of the circulating-coin inventory from a national perspective, steps that have led to improvements such as reductions in national coin inventories. The actions that it has planned to address our recommendations could potentially contribute to reducing federal costs related to circulating coins, a reduction that could increase the amount of money returned to the General Fund. While the Federal Reserve has a framework that it believes can adapt to expected gradual changes in coin demand, a significant and unexpected decrease in demand could lead to increased storage needs.

Chairman Campbell, Ranking Member Clay, and members of the Subcommittee, this concludes my prepared statement. I would be pleased to answer any questions at this time.

GAO Contact and Staff Acknowledgments

For further information on this testimony, please contact Lorelei St. James, at (202) 512-2834 or stjamesl@gao.gov. In addition, contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals making key contributions to the work this testimony is based on include Teresa Spisak and John Shumann (Assistant Directors); Maria Wallace; Amy Abramowitz; Lawrance Evans, Jr.; David Hooper; Delwen Jones; Sara Ann Moessbauer; Colleen Moffatt Kimer; and Josh Ormond.

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