Are Coins and Notes History in The US?

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Abstract

There is a famous saying: Money changes companies and companies change money. Nowadays there are more and more opinions about the future of money and central banks. Is money issuance still a function of central banks? Regulation or deregulation? Society without physical money? These are just some of the questions we hear from both the general public and the financial banking world.

This paper is a small study of money issuance and its necessity from a central bank perspective. The study on the US case is based on data published by the Federal Reserve and brings the US dollar issuance into focus. Based on volume and tightness analysis, the results show that there is still a need for physical currency in the US, especially small denomination.

Although credit cards have replaced many cash transactions in recent years, the dollar is a sought-after physical currency outside the US.

Key words: currency, Fed, monetary policy
J.E.L. classification: G01, G20, G21, G24, G30, E50

1. Introduction

The emergence of money in human history was a major step towards modern society. While in the beginning the form of money - obviously unregulated - was varied, today we talk about varieties of money and regulatory institutions.

The US economy developed mostly on the basis of private property, and in this context physical money appeared early compared to today's regulatory institution, the Fed.

The need for a US central bank arose as a result of the bank failures of the early 20th century. Early uncertainties also existed: in the late 18th and early 19th centuries, the US Congress twice passed bills providing for the establishment of a US bank. However, the partially implemented project did not continue.

In the early 1900s, the financial crises brought the issue of setting up a financial regulatory institution to the fore. We finally have the public and government consensus needed to create a truly independent central bank. As a result, in 1913 the Fed was established.

The original goals of the Federal Reserve System were to provide the country with a more stable currency, provide facilities that would lead to reduced commercial lending, and improve oversight of the banking system. Today, the Fed has multiple objectives and has a monopoly on money issuance by decision of the US Congress.

2. Theoretical background

Within each banking system, the issuing bank plays a key role. Through its functions, its links with other banks and with the economy, the US central bank plays its role in the monetary issuance process.

The Board of Governors is the issuing authority for Fed notes. It aims to meet the public's needs by having sufficient cash in circulation. Federal Reserve Banks receive, distribute and process Federal Reserve notes. It also distributes coins through depository institutions. The Board of
Governors and the Reserve Banks work together to maintain the confidence and integrity of the currency, the US dollar.

The Federal Reserve Bank's 28 cash offices provide cash services for over 8,000 savings loan and credit union banks. The amount of currency in circulation depends significantly on the public’s demand for currency.

The amount of money in the economy is an important element of monetary policy. Monetary cycles follow one another, and decisions on money issuance are linked to central bank policies.

Over time, there have been controversies in monetary theories, including those related to central bank independence.

Given that the Fed has multiple objectives, the importance of which changes over time, we find studies linking money supply to other factors of a cyclical or countercyclical nature. An older empirical study was carefully revisited by Bernanke & Carey (1996). They found that real wages were strongly countercyclical in a case of 22 countries between 1931 and 1936.

For international and historical evidence one can read the study on the determination of business cycles and the role of money quantity by Backus & Kehoe (1992) and later by Bergman, Bordo, Jonung (1998). Interpretation of international historical evidence are all the more complicated when one seeks to measure the exact duration of business cycles.

Basu & Taylor (1999) have shown that monetary shocks are not neutral in their effect on the economy.

Building on these issues revealed in the literature we will issue money as a function of the Fed.

3. Research methodology

In the literature, including on the basis of specific datasets, there is a wide range of approaches to the causal relationship between the quantity of money and monetary policy instruments.

The decision to issue physical money is strongly related to monetary policy. In recent years, to overcome the limits of traditional monetary policy imposed by the effective lower bound on short-term interest rates, the Federal Reserve, but and other central banks from the advanced economies have used new monetary policy instruments. Bernanke B (2020) reviewed these. He focused on the easing of quantitative easing (QE) and the forward guidance of the main new instruments used by the Fed.

The impact of US monetary policy on banks, the volume of banknotes issued, the leverage of US banks globally on dollar-denominated cross-border bank flows are important topics of the studies. Romer and Romer, 2004 studied US monetary policy shocks identified from narrative sources of the Federal Reserve's Greenbook forecast. Compared to Bruno and Shin (2015), who use standard recursive monetary policy identification techniques, they find that leverage declines faster and to a much larger extent after monetary tightening, suggesting that the declining availability of debt financing plays a significant role in the propagation of monetary policy through the banking system. In our study, we aim to investigate the dynamics of outstanding volume in the US.


In the US, domestic demand is driven by the use of currency transactions influenced mainly by the prices of goods and services, and then by the level of household income. External influenced by political and economic uncertainties.

According to studies published by the Federal Reserve, between 50% and 66% of all US currency issued is held by individuals or entities located abroad.

The Federal Reserve Board has decided that the notes currently issued are $1, $2, $5, $10, $20, $50 and $100.

For the $5, $10, $20, $50 and $100 notes, the note has a letter and number designation that corresponds to one of the 12 Federal Reserve Banks. The largest note ever issued by the Federal Reserve was the $10,000 note.
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<tbody>
<tr>
<td>1$</td>
<td>10</td>
<td>10,3</td>
<td>10,6</td>
<td>11</td>
<td>11,4</td>
<td>11,7</td>
<td>12,1</td>
<td>12,4</td>
<td>12,7</td>
<td>13,1</td>
<td>14</td>
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<td>2$</td>
<td>1,9</td>
<td>2</td>
<td>2,1</td>
<td>2,2</td>
<td>2,3</td>
<td>2,3</td>
<td>2,4</td>
<td>2,5</td>
<td>2,7</td>
<td>2,7</td>
<td>2,8</td>
</tr>
<tr>
<td>5$</td>
<td>11,8</td>
<td>12,2</td>
<td>12,7</td>
<td>13,1</td>
<td>13,7</td>
<td>14,2</td>
<td>14,8</td>
<td>15,3</td>
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<td>17,1</td>
</tr>
<tr>
<td>10$</td>
<td>17,2</td>
<td>17,7</td>
<td>18,5</td>
<td>18,9</td>
<td>19</td>
<td>19,2</td>
<td>19,6</td>
<td>20,1</td>
<td>20,9</td>
<td>22,5</td>
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<tr>
<td>20$</td>
<td>141,1</td>
<td>148,9</td>
<td>155</td>
<td>162,2</td>
<td>171,3</td>
<td>177,2</td>
<td>183,8</td>
<td>188,5</td>
<td>190,5</td>
<td>234,9</td>
<td>237,9</td>
</tr>
<tr>
<td>50$</td>
<td>69,6</td>
<td>72,5</td>
<td>74,5</td>
<td>76,9</td>
<td>79,8</td>
<td>83,5</td>
<td>86,4</td>
<td>89,2</td>
<td>92,3</td>
<td>114,2</td>
<td>122,9</td>
</tr>
<tr>
<td>100$</td>
<td>782,6</td>
<td>863,1</td>
<td>924,7</td>
<td>1,014,5</td>
<td>1,082,2</td>
<td>1,154,8</td>
<td>1,251,7</td>
<td>1,343,5</td>
<td>1,424,7</td>
<td>1,636,8</td>
<td>1,769,3</td>
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</table>


Analyzing the value of the currency in circulation in the period 2011-2021, we can notice an increasing trend of each category of banknotes separately.

Figure no. 1 Value of currency in circulation, US Dollar (end of the year)


Figure no. 1 shows a significant increase in the total value of coins in circulation year on year. If at the end of 2011, the Federal Reserve recorded the value of $1,034.2 billion in circulation, in 2021 the value was $2,187.2 billion, an increase of 111.49% compared to the beginning of the period analysed.
The existence of these expenses is justified by: processing, payment, receipt, verification, destruction, transport and packaging of the coin. We therefore see an increase of $193 million in 2021 compared to 2011.

Table no. 2 Printing orders between 2020 and 2023

<table>
<thead>
<tr>
<th>Value</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
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<tbody>
<tr>
<td>1$</td>
<td>1,574,400</td>
<td>709,120</td>
<td>1,004,800</td>
<td>2,003,200</td>
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<tr>
<td>2$</td>
<td>0</td>
<td>51,200</td>
<td>102,400</td>
<td>128,000</td>
</tr>
<tr>
<td>5$</td>
<td>467,200</td>
<td>419,200</td>
<td>403,200</td>
<td>864,000</td>
</tr>
<tr>
<td>10$</td>
<td>460,800</td>
<td>300,800</td>
<td>256,000</td>
<td>364,800</td>
</tr>
<tr>
<td>20$</td>
<td>1,721,600</td>
<td>3,107,200</td>
<td>2,464,000</td>
<td>204,800</td>
</tr>
<tr>
<td>50$</td>
<td>236,800</td>
<td>499,200</td>
<td>752,000</td>
<td>192,000</td>
</tr>
<tr>
<td>100$</td>
<td>1,334,400</td>
<td>2,482,176</td>
<td>2,201,600</td>
<td>1,302,400</td>
</tr>
</tbody>
</table>

Table no. 2 reflects US dollar printing orders over the period 2020-2023. It show us that the need for currency has been increasing. On the one hand this is correlated with the needs of the economy, on the other hand it can be explained by the growing external demand.

However, the result contradicts some views that physical currency will disappear. If we look explicitly at the year 2023, we can see an increase in the number of small denomination banknotes put into circulation. For example, for 1 dollar we have double the number of banknotes printed compared to the previous year.
5. Conclusions

Every year, the Fed’s Board determines the number of new Federal Reserve notes needed to meet the public’s requirements and sends the printing order to the Treasury’s Bureau of Engraving and Printing (BEP). This order reflects the Board’s assessment of expected growth rates for payments and receipts of currency in circulation.

The Fed pays the BEP the cost of printing a new coin and also the related transportation cost from the Bureau’s Washington D.C. facility to the Bank’s cash offices.

When a depository institution orders a quantity of currency from Reserve Bank, the institution arranges for its transportation to destination.

When a depository institution deposits currency with a Reserve Bank, the Reserve Bank stores it in secure vaults until it is verified. During this complex verification process, the currency is counted and suspect banknotes, such as counterfeits, counterfeit notes and destroyed notes, are identified. The appropriate currency is returned to the vault and used to fulfil future orders from depository institutions.

On preparing for the future, the Fed's launch of FedNow has triggered new speculation about the digital dollar.

While FedNow is not currently tied to any digital US dollar initiative or the crypto space in general, experts warn that the system could end up being a precursor to the infrastructure for a central bank digital currency. This is a direction we plan to explore in the future.

Although payment instruments are often used at the expense of physical currency, the study shows that there is still a need for coins and banknotes in the US and around the world.

As for the role of the central bank, it will not diminish, but will change as the Fed adapts to the new forms of currency in circulation.

6. References