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## Monetary anchors in a digital age: A historical perspective on the ECB's digital euro and US stablecoins

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## Monetary Anchors in a Digital Age: A Historical Perspective on the ECB's Digital Euro and US Stablecoins

Prof. Dr. Jan Greitens, Frankfurt

### Abstract:

This paper contributes to current debates surrounding the digital euro and US stablecoins by unpacking the present-day relevance of two important episodes in monetary history: Prussia's effort in the 18th century to implement a uniform coinage standard across the Holy Roman Empire, and the 19th century Currency School-Banking School debate. While the ECB presents the digital euro as a conservative measure designed to preserve the existing two-tier system and the euro as a currency anchor, Prussia's failed reform efforts show that political will must be accompanied by political clout for a monetary standard to become widely accepted. Meanwhile, the US is promoting stablecoins backed by government debt in order to foster innovation and extend the dominance of the dollar. Based on a close reading of Hayek, this paper critiques currency competition as a justification for stablecoins. The risk of a fragmented monetary system no longer amenable to central bank control is also discussed with reference to the Currency School-Banking School debate, which discloses the perennial importance of balancing stability with elasticity while also avoiding fragmentation. In this way Prussian and British historical experience with monetary system reform sheds valuable light on the parameters that policymakers should consider when devising or assessing proposals for digital money, as a failure could lead to uncertainty and the fragmentation of the monetary system or excessive rigidity in the money supply.

Keywords: Digital Euro, Monetary Anchor, Gresham's Law, Currency Competition, Stablecoins

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## Monetary Anchors in a Digital Age: A Historical Perspective on the ECB's Digital Euro and US Stablecoins

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## Introduction

The European Central Bank (ECB) has put forward various reasons for implementing a digital euro, including the desire to preserve the euro as a “monetary anchor” - Yet what does the ECB actually mean by this term, which does not appear frequently in the monetary literature? Explanations offered by Fabio Panetta, a former member of the ECB’s Executive Board who headed up the digital euro project, are illuminating and provide historical perspective, thus meriting their citation at length (Panetta, 2021):

People’s confidence in private money is underpinned by its convertibility on a one-to-one basis with the safest form of money in the economy - central bank money, the monetary anchor - and hence with other regulated forms of money. (...) Without central bank money to provide an undisputed monetary anchor, people would have to monitor the safety of private money issuers in order to value each form of money, undermining the singleness of the currency. Indeed, there were recurrent crises in the past when different forms of private money coexisted in the absence of sovereign money, such as during the free banking episodes of past centuries. History shows that financial stability and public trust in money require a widely used public money alongside private monies.

Panetta thus presents the notion of a hierarchy of money in which central bank money is the safest form of money at the top of the scale, while the credit money of commercial banks has a subordinate position as a claim on central bank money (Mehrling 2013). He stresses the importance of the “singleness of the currency,” meaning a general unit of account that underpins all economic transactions, such that there is no difference in value between central bank currency and private credit money (Garratt & Shin 2023, 1). Panetta also refers to historical circumstances in which such a monetary anchor did not exist, specifically mentioning the free banking era in the US in the 1830s to 1860s.

Drawing on historical examples, this study discusses the different approaches to changes in the monetary system caused by technological developments in the EU and USA. First, we explore the digital euro concept that has been developed by the ECB. We then present the ECB’s perspective on scenarios that could led to the perceived necessity of introducing a digital euro. The next section addresses the parallel debate on stablecoins in the US. Subsequently, the study presents a European example of a fragmented monetary system - namely, that of the Holy Roman Empire in the 18<sup>th</sup> century, and Prussia’s attempt to counter fragmentation by introducing its own currency standard between 1750 and 1755. Next, we examine the famous debate between the Currency and Banking Schools in the run-up to the Second Peel Banking Act of 1844, which was an integral step in the establishment of England’s modern two-tier banking system. Finally, conclusions are drawn from these historical analogies for the digital euro and stablecoins.

## Key Features of the Digital Euro

The ECB's proposal for the digital euro is crucially informed by Europe's two-tier banking system. The first tier consists of the ECB, which conducts business with commercial banks using currency or central bank money. Repo transactions between the central bank and commercial banks take place at this level. The second tier comprises commercial banks that do business with households and companies. Commercial banks do not use central bank money for these transactions, but rather private credit money or commercial bank money. However, the central bank is connected to households and companies through cash, which is the only form of central bank money that households and companies can hold (Banerjee et al. 2025). The fact that private credit money is always denominated in units of currency has a disciplinary effect: When households and companies withdraw deposits in the form of currency, this limits the issuance of private credit money. The German-language theoretical discussion has a special term for this anchoring function of currency, coined by Lorenz von Stein, a key figure in 19th-century administrative science: currency is a *Foundation* (roughly, "foundation") of the monetary system (Stein 1858, 60).

The ECB is concerned that technological developments such as distributed ledger technology (DLT) could lead to currency competition within the eurozone and potentially end the two-tier banking system. The use of cash is declining, and private cryptocurrencies and stablecoins offer an alternative means of performing monetary functions beyond the purview of central banks. Globally active banks and other payment service providers can compete with national currencies, potentially with their own units of account. In an extreme scenario, which central banks regard as the greatest danger, the very concept of an anchoring to the unit of account could come under threat. This would place the very sovereignty of states over monetary matters at risk. This debate erupted with the Meta Group's attempt to launch Libra (later renamed Diem), a stablecoin with its own unit of account that would have been linked to a basket of currencies. Stiff regulatory opposition put a halt to the project, which would have created a private unit-of-account alternative to the dollar or euro. Among other effects, this would have weakened central bank control over monetary policy (Ahnert et al. 2022)

From the ECB's perspective, the need for a digital euro depends in no small part on the perceived risk of digital currencies forcing a transition from the current two-tier financial system to a single-tier one. While the volume of European stablecoins is quantitatively insignificant compared to other monetary assets in the European Union, it is rising sharply and has exceptional potential to grow further (Aerts et al. 2025).

## The ECB Perspective on the Evolution of Money

In response to the technological developments, the ECB hopes to introduce the digital euro as a means of preserving European sovereignty over monetary policy. Ulrich Bindseil (2024), the former ECB head of the digital euro project, has outlined a framework for how the ECB could shape the development of the digital euro. Specifically, Bindseil sketches six stylized options for how the monetary system could evolve, ranging from extremely conservative to extremely radical changes in the role of analog central bank money (i.e. banknotes or cash), commercial bank money, and central bank digital currency (CBDC), meaning the digital euro.

### Conservative options

Conservative option 1: Conservative CBDC - Banknotes and commercial bank money are preserved and a retail CBDC is primarily added to assume part of the use of cash as digital payments, while maintaining the existing balance between public (central bank) and private (bank) money. This approach aims to embrace innovative technologies while still preserving the advantages of cash (such as privacy and resilience), at the cost of running two retail forms of central bank money (cash and CBDC).

Conservative option 2: Restore the Role of Cash - No CBDC is issued; instead, monetary policy deliberately tries to stop or reverse the decline of cash by enforcing effective legal tender status, maintaining or expanding ATM networks, and subsidizing or enforcing free cash usage. This will strengthen the positive aspects of cash (privacy, financial inclusion, robustness) but leave the central bank outside electronic retail payments and may forgo efficiency gains from digital public money.

### Radical options

Radical option 1: Cashless Society - Cash is phased out, leaving only CBDC and private electronic money. The advantages are lower cash-infrastructure costs and potentially better control over illicit cash-based activity, but society loses cash's strengths in terms of privacy, inclusion, and offline resilience.

Radical option 2: Sovereign Money - Commercial bank money is eliminated and replaced with CBDC; all retail money is a direct liability with the central bank. This promises to end classic bank runs and means more seigniorage for the state, but implies a very difficult transition, loss of bank deposit-lending synergies, and strong centralization of credit allocation on the central bank's balance sheet.

Radical option 3: The End of Central Bank Money - No CBDC is issued and banknotes are allowed to disappear; no central bank money is in circulation, rendering money purely private. This minimizes CBDC project risk

and avoids public-sector involvement in retail payments but leaves the monetary system's anchor unclear and raises risks of financial instability, private market power, and geopolitical vulnerability if dominant providers are foreign.

In light of the foregoing scenarios, Bindseil (2024) concludes the ECB is in a precarious situation, caught between private money and cash and the fractional reserve system. He asserts the current equilibrium is unstable because technological change implies continuous evolution. Against this backdrop, the purpose of CBDC is to preserve the status quo. Indeed, it can be viewed as a conservative measure that aims to retain the current unit of account as an anchor, prevent fragmentation, and bring the two-tier banking system into the digital age (Bindseil & Senner 2024, 13).

The authors place CBDC in the middle of this triangle of options, indicating that the ECB would take a very balanced position.

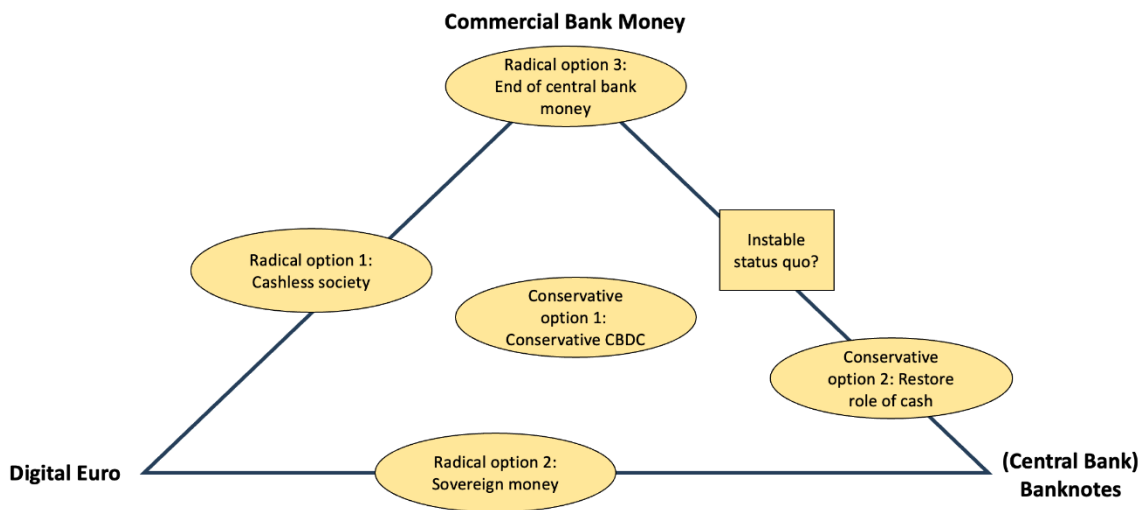


Figure 1: Triangle of options for CBDC. Source: Adapted from Bindseil (2024) and Bindseil & Senner (2024)

How can the ECB digitize the existing monetary link between the central bank and households without altering the two-tier banking system? This is a very sensitive issue. If the digital euro is made too attractive, it will support the existing trend toward disintermediation. Such disintermediation is happening for regulatory reasons, as part of the development of the Capital Markets Union (CMU), and due to digital transformation (Greitens 2024). Alternatively, the digital euro could be unattractive, in which case it would simply be a costly project that achieves little and fails to preserve the anchor function.

## Gresham's Law and Hayekian Currency Competition

The current US administration is actively promoting technological developments in this area through the GENIUS Act. This legislation promotes the substantial expansion and wider adoption of stablecoins through regulatory oversight, which could bolster their credibility and trustworthiness. As a result, the share of stablecoin-based payment transactions has been rising across the US and globally. Importantly, the law's reach transcends US jurisdiction to increase dominance of the US dollar.

US debate on this topic harks back to the "free banking era" in the US, which ran from 1836 to 1863. President Andrew Jackson's decision not to renew the charter of the Bank of the United States set the stage for the proliferation of banks and a diverse array of circulating currencies (Petratos & Baugus 2025, 6). On the day of his inauguration in 2017, US President Donald Trump visited the Jackson monument in Washington. This was not an arbitrary act of homage; the idea of weakening the Federal Reserve (Fed) and enabling currency competition is old and widespread among those who currently make up and support the US administration (Ortiz 2017). Such an approach is also frequently associated with Friedrich August von Hayek (1976), who called for the denationalization of money and free currency competition.

Hayek sought to refute Gresham's law - that is, the notion that bad money chases out the good. Sir Thomas Gresham (1519-1579) was a founder of the London Stock Exchange and financial advisor to Queen Elizabeth. Just three days after her accession to the throne in 1558, he wrote to the Queen to explain that the deteriorating condition of her father Henry VIII's silver coins had caused an exodus of gold coins from England. The devalued silver coins were worth more domestically in nominal terms than in the form of silver bars abroad, and this relationship was reversed for gold coins. Consequently, gold coins were taken abroad. To address this problem, Elizabeth reformed the coinage system and reintroduced better coins.

The term Gresham's law was first introduced by Henry Dunning Macleod (1858, 476-477). Macleod illustrates this law with a quotation from a pamphlet written during the Great Recoinage of 1696: "When two sorts of coins are current in the same nation, of like value by denomination, but not intrinsically, that which has the least value will be current, and the other as much as possible hoarded, or exported. Which may be expressed more shortly thus: Bad money always drives good money out from circulation" (Macleod 1896, 64).

Given a fixed nominal ratio of exchange between gold and silver coins, bad money (i.e. with a metal value lower than the nominal value, in this case silver coins) displaces good money (i.e. with a metal value higher than the nominal value, in this case gold coins), the latter of which is exported or hoarded as a store of

value. Essentially, Gresham's Law states that "bad money drives out the good." However, it does not apply when there are freely floating exchange rates and full transparency.

Hayek calls for currency competition without a general unit of account and truly flexible exchange rates between different currencies. Under these assumptions, an effect that may be called "anti-Gresham's law" emerges. Specifically, Hayek notes that "Gresham's law will apply only to different kinds of money between which a fixed rate of exchange is enforced by law. If the law makes two kinds of money perfect substitutes for the payment of debts and forces creditors to accept a coin of a smaller content of gold in place of one with a larger content, debtors will, of course, pay only in the former and find a more profitable use for the substance of the latter. With variable exchange rates, however, the inferior quality money would be valued at a lower rate and, particularly if it threatened to fall further in value, people would try to get rid of it as quickly as possible. The selection process would continue toward whatever they regarded as the best sort of money among those issued by the various agencies, and it would rapidly drive out money found inconvenient or worthless" (Hayek 1976, 35). Hayek assumes that ensuring the stability of a currency's value is essential for all monetary functions and that people will be eager to use the more stable currency (Hayek 1976, 56-58). Currency competition also makes monetary policy impossible, which is another of Hayek's intentions (Hayek 1976, 89-92).

For Hayek, a gold or silver standard can only ensure stability to a limited extent. "The gold standard, fixed rates of exchange, or any other form of obligatory conversion at a fixed rate, served no other purpose than to impose upon the issuers of money such a discipline and, by making its regulation automatic, to deprive them of the power arbitrarily to change the quantity of money. It is a discipline that has proved too weak to prevent governments from breaking it" (1976, 82). Hayek thus refers to gold as a "wobbly anchor" (1976, 82).

Hayek argues that stability is better guaranteed through a competitive currency system. "Convertibility is a safeguard necessary to impose upon a monopolist, but unnecessary with competing suppliers who cannot maintain themselves in the business unless they provide money at least as advantageous to the user as anybody else" (Hayek 1976, 84). However, this can only work with non-convertible currencies that have their own units of account. "It should be specially observed that the demand for free banking at that time was wholly a demand that the commercial banks should be allowed to issue notes in terms of the single established national currency. As far as I am aware, the possibility of competing banks issuing different currencies was never contemplated. That was, of course, a consequence of the view that only banknotes redeemable in gold or silver were practicable, and therefore that notes for other than the standard quantity

of precious metal would seem to be merely inconvenient and not serve any useful purpose” (Hayek 1976, 71).

This involves fluctuating exchange rates and uncertainties, but Hayek does not consider the resulting costs to be significant. “The concurrent circulation of several currencies might at times be slightly inconvenient, but careful analysis of its effects indicates that the advantages appear to be so very much greater than the inconveniences that they hardly count in comparison, though unfamiliarity with the new situation makes them appear much bigger than they probably would be” (Hayek 1976, 84). In this way, Hayek views maximum transparency as a prerequisite for effective currency competition (Hayek 1976, 44-46).

However, for Hayek, currency competition cannot take place in a system with a general unit of account: “It is, however, clearly not practicable to allow tokens with the same name and readily exchangeable against each other to be issued competitively, since nobody would be in a position to control their quantity and therefore be responsible for their value. The question we have to consider is whether competition between the issuers of clearly distinguishable kinds of currency consisting of different units would not give us a better kind of money than we have ever had, far outweighing the inconvenience of encountering (but for most people not even having to handle) more than one kind” (Hayek 1976, 42-43).

Hayek also notes that third parties should not issue claims on private currency, i.e. credit money on a private bank’s unit of account. Hayek calls this type of credit money “parasitic currency” (1976, 53). However, since preventing this is impossible, it must be clear that private banks issuing such currency do not act as lenders of last resort. Hayek also asserts that credit money issuers should be required to maintain a 100% reserve ratio (1976, 53-55).

Hayek ultimately reverses Gresham’s Law, asserting that good money will always prevail over the bad. However, this reversal depends on the fulfillment of specific conditions. Hayek underscores the need for a flexible exchange rate system without a general unit of account. This stands in sharp contrast to Gresham, who argued for a fixed exchange rate system with silver as the unit of account (Hayek 1976, 42).

To what extent is Hayek’s theory of currency competition applicable to the current environment, particularly in relation to stablecoins? As stablecoins are backed by US Treasuries, the dollar is the common unit of account; this backing mimics a fixed exchange rate system, with the dollar fulfilling the role played by silver for Gresham. In this way, the preconditions identified by Hayek for currency competition are not fulfilled in relation to stablecoins and a Hayekian currency competition cannot take place.

Nevertheless, the present-day situation with a view to stablecoins has certain parallels to the free banking era, as banks were authorized to issue their own currency denominated in dollars, i.e. the general unit of account. This period is regularly described as a time of uncertainty; banknotes often circulated at a discount, and there were frequent bank failures. Yet, to what extent were these features of the free banking era problematic? Scholars have arrived at divergent conclusions. Specifically citing the free banking era, Eichengreen (2025) issues an urgent warning regarding the negative effects that will result from the GENIUS Act. Other assessments of the era are more ambivalent (Rolnick and Weber 1983; Dwyer 1996). While discussions comparing the free banking era and stablecoins are now widespread (e.g. Petratos & Baugus 2025), another historical episode with parallels to the present has received decidedly less scholarly attention: the Prussian coinage reform attempts of the 18<sup>th</sup> century.

## Prussia's Attempt to Overcome Monetary Fragmentation through Reichstalerization, 1750-1755

The condition of the coinage system in the Holy Roman Empire became increasingly dire from the late 17th century onward. Monetary policy was highly decentralized, with responsibility for coinage distributed across different administrative units, so-called Reichskreise. Prior attempts to implement a coinage standard across the Holy Roman Empire, such as the Leipzig coinage standard of 1690, had failed. Full-weight silver coins became increasingly scarce, causing a growing reliance on copper coinage. Many minor coins flowed into Prussia, and international trade was primarily conducted using French gold coins or Dutch silver coins. Good silver coins increasingly disappeared from circulation, as Gresham's law would predict. Coins minted at full weight were quickly withdrawn from circulation and hoarded or melted down to re-mint underweight or minor coins. Attempts to ban foreign coins only intensified scarcity problems. Smaller territories with minting rights continuously sought to gain advantage by altering the silver content of their coins.<sup>1</sup>

When Frederick II ascended to the throne of Prussia in 1740, he initially did nothing to address the confused state of money. Only over time - particularly from 1749 onward - did he attempt to assert Prussian coinage independence, in part due to the general lack of improvement in the Holy Roman Empire, but also in response to the actions of Austria, which began minting its Maria Theresa thaler in 1753. This was a period of rising tensions between Prussia and Habsburg-led Austria for supremacy over the Holy Roman Empire.

Frederick II had been observing Johann Philipp Graumann's activities as master of the mint under his brother-in-law, the Duke of Brunswick, for some time. In January 1750, Frederick II brought Graumann to

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<sup>1</sup> This section references Greitens (2020).

Berlin to oversee the reorganization of the coinage. Graumann was tasked with devising a reform that would increase Prussian state revenues, promote trade, make Berlin the predominant location for bills of exchange, drive out foreign coins, and ultimately make Prussian coinage preeminent across the Holy Roman Empire. Frederick II called the newly established Prussian thaler the Reichstaler, meaning “imperial thaler,” a namesake that disclosed the ambition of the project.

The most significant element of Graumann’s reform came in May of 1750 with the publication of an edict establishing a new and uniform coinage system throughout the monarchy; the Reichstaler was to be both the medium of exchange and unit of account. As minting activities were expanded, importing sufficient quantities of silver became difficult; prices rose in line with scarcity, such that minting activities produced increasing losses. From 1754 onward, Frederick II gradually pushed Graumann aside, and he was relieved of his duties in 1755. In this way, Frederick II’s effort to establish a uniform and stable coinage standard was ultimately a failure. Against the backdrop of a fragmented coinage system, Prussia lacked the political power necessary to enforce the use of Prussian coins throughout the Holy Roman Empire.

During the Seven Years’ War of 1756-1763, the Graumann system was abandoned, as Prussia reduced the quantity of silver in its coins in order to finance wartime expenditures. However, Prussia’s post-war attempt to restore a stable currency also failed. In the war’s aftermath, the territories of the Holy Roman Empire had to decide which coinage standard to adopt: Habsburg or Prussian. Saxony, often caught in the middle of the power contest between Austria and Prussia, chose the Habsburg coinage standard. The principalities in Westphalia that had remained independent, such as Paderborn, also chose the Habsburg standard over the Prussian one. The Graumann standard gradually spread to neighboring German states in the decades after 1770. Over time, a Prussian thaler area arose, and the so-called Vereinstaler, adopted in 1857, remained in circulation until 1907. The Prussian standard achieved this pre-eminence thanks to Prussia’s growing economic and political power; this was not achievable through monetary policy alone.

Johann Heinrich Gottlob Justi (1766) was a major critic of Graumann’s coinage project. He complained about the initiators of such projects, whom he saw as motivated by greed. Justi viewed the hyperinflation at the start of the Thirty Years’ War and John Law’s failed currency reform in France as negative examples of such projects. From his perspective, the state was the guarantor of trust in the monetary system; bad coinage was a “plague that has caused unspeakable harm to commerce” (322, my translation). For Justi, coins should only represent the value of silver they contain, the state should not earn revenues from seigniorage, and fiscal interests should be kept separate from monetary policy.

In the Holy Roman Empire, the Münzregal (right of minting) was derived from the Bergwerks-Regal (right of mining). While Justi saw revenues from mining as justified, in his view the sole purpose of the right of minting was to simplify trade, by assuring a coin's precious metal content. Accordingly, the state should not seek to derive revenues from minting activities. To cover minting costs, a state required its own mines, for the turning of a profit on the minting of silver and gold purchased abroad "is a pure impossibility, unless one disregards the nature and ultimate purpose of money, as well as justice and fairness, such that constant disorder arises, with ruinous effects for the coinage system" (Justi 1766, 308, my translation).

Justi's 1766 treatise on finance, which was dedicated to Frederick II, alluded to Graumann's failed project: "What does a ruler gain by minting low-value coins? In fact, nothing at all. Through this whole business, he has achieved nothing more than enriching the promoters of such an enterprise and giving profit-seeking people who have bought up gold and silver in other countries before him the opportunity to achieve their self-serving intentions. On the other hand, he has not only incurred futile coinage costs but also placed many subjects in more miserable circumstances than before, and made his country poorer overall. It can thus be seen that a ruler who wants to mint coins for his own account and profit without mines finds himself in very similar circumstances to someone who devastates the fertile fields of his subjects and turns them into a forest in order to exercise his hunting and forestry rights" (Justi 1766, 312-313, my translation). Overall, it was a damning assessment of Graumann's project.

For Justi, money experts were those who profit from monetary plurality. "This business has thus become a very difficult science in its own right" (Justi 1766, 325). Justi thus maligned unscrupulous entrepreneurs who sought to profit from the fragmented monetary system. A large number of publications from this period sought to warn readers about bad coins, providing illustrations to aid in the recognition of good ones. However, some actors naturally exploited informational asymmetries to earn arbitrage revenues from constantly fluctuating exchange rates (Justi 1766, 325-6).

In conclusion, a monetary union requires political unity because a currency cannot function without political support. It was only after the unification of the German states in 1871 under Prussian leadership that Prussia's currency gradually became established throughout Germany. The implications for the digital euro as a monetary anchor would appear to be twofold: First, political consensus is necessary for such an anchor to be established. Without sufficient political support, ECB implementation of the digital euro will not be successful. Second, a currency must offer stability for it to be accepted. An unstable currency, whether analog or digital, will lose acceptance within a globalized monetary system given the opportunity to switch to alternatives, such as US stablecoins. Therefore, the state must manage the currency in good faith, without fiscal aims or other purposes in mind.

A fragmented monetary system engenders specific problems. The risk that stablecoins will be backed with increasingly substandard or non-transparent collateral are significant, as issuers have a strong financial incentive to weaken the coins' underlying assets. Similarly, in the 18th century it was never possible to fully squash the incentives to commit fraud. Furthermore, fraud breeds uncertainty, which can have a negative impact on investment and growth.

## Stability versus Elasticity: the Currency School-Banking School Debate

The 19th century British debates over monetary policy were crucially informed by prior historical events, which bear brief synopsis here: In 1666 England began transitioning from early modern bimetallism to a de facto gold standard, becoming the first European country to do so. This process began with the abandonment of seigniorage revenue. In an attempt to increase the quantity and quality of coins in circulation, the government permitted individuals to bring precious metals to the Royal Mint at the Tower of London, where coins could be produced free of charge. This reduced transaction costs, thus narrowing the "melting point" - the threshold at which it became profitable to export coins for their precious metal value. This also made gold more attractive than silver, which had been the dominant metal until then. The price of gold in England was also falling due to significant gold discoveries (Kalkmann 1895, 2-14; Pilar 2013, 458).

Gresham's law was applicable under these circumstances. As full-weight silver coins were worth more as precious metal bars abroad than as coins in England, gold was imported to England and silver was exported. This resulted in silver coins increasingly disappearing from circulation, leaving gold coins available in abundance. As Master of the Royal Mint, Isaac Newton attempted to keep silver coins in the country by aligning the official bimetallic ratio between gold and silver with prevailing market rates for precious metals. A royal proclamation issued in 1717 fixed the value of the gold guinea coin at 21 shillings; however, this was insufficient to align the mint ratio with the prevailing market ratio. Gold became the means of exchange for merchants, thus establishing a de facto gold standard in the country. Thus, while England had switched on a practical level to gold currency, gold coins were not declared legal tender until 1774. Silver minting was abandoned in 1798, and the gold standard was officially adopted in 1816 (Kalkmann 1895, 42-46; Pilar 2013, 459).

The establishment of the Bank of England in 1694 set the stage for the Financial Revolution, which saw the emergence of a three-tier banking system, comprising country banks at the local level linked to private London banks as their intermediaries; these London banks were in turn linked to the Bank of England. William III's financial difficulties resulted in merchants being granted the royal privilege of establishing a chartered

private note bank in the form of a joint-stock company in exchange for cheap loans. This was the origin of the Bank of England. Unlike the Bank of Amsterdam, the Bank of England could not only issue banknotes against bullion, but also against commercial bills, which were convertible into coins. Combined with its monopoly on issuing notes within a 60-mile radius of the City of London and the prohibition of any other joint-stock banking in England, this innovation enabled the Bank of England to acquire a prominent position in the English banking system. This step-by-step development resulted in a two-tier financial system wherein state borrowing was conducted via the Bank of England and its banknotes began to dominate payment transactions (Dickson 1967, Tilly 2003, 56-60). Although the Bank of England was not yet a central bank in the modern sense, its notes effectively anchored the English monetary system. This development can be described as a solution for addressing England's fragmented monetary system, which ultimately culminated in a gold-backed currency.

During England's Restriction Period (1797-1821), the suspension of the Bank of England's gold convertibility amid the Napoleonic Wars sparked the Bullion Controversy. This debate centered on the role the Bank of England should play. Was a gold standard necessary for monetary stability? What was the proper role of the central bank during a crisis? And how could the money supply be elastically adjusted in such cases?

The return to the gold standard in 1821 was immediately followed by a monetary crisis, because gold's elasticity was considerably reduced. Various debates about whether changes were needed took place in Parliament during this period, thus giving birth to the Currency School-Banking School debate.<sup>2</sup> At its core, this dispute centered around the distinction between currency and credit money. While the earlier Bullion Controversy primarily focused on the role of state-issued paper money as currency, without considering credit instruments such as bills of exchange or cheques, the expanded debate now included credit money. The controversy reached a peak during the deliberations over the passage of Prime Minister Robert Peel's Second Bank Act of 1844 and its subsequent implementation.

The Currency School position gained significant support from politicians and the directors of the Bank of England, and ultimately prevailed. The Bank of England was divided into two departments by the Bank Charter Act of 1844. The Issue Department became solely responsible for issuing banknotes as currency, and the Bank of England's exposure to liquidity risks was prevented by its close ties to the gold stock. The Bank of England also obtained a legal monopoly over the issuance of banknotes. The Banking Department

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<sup>2</sup> This description of the debate follows Diatkine & de Boyer (2008) and Rieter (1971, 122-152).

was expected to conduct its business in the same way as a private bank, i.e. by brokering loans, but not by discounting bills for Bank of England notes.

Consequently, the activities of the Banking Department depended entirely on the quantity of banknotes it obtained from the Issue Department. This reform resulted in paper automatically circulating like metallic reserves in terms of value and amount. In other words, the issuance of banknotes adjusted immediately to gold price movements, and the currency could no longer be abused. Therefore, stability won out over elasticity in the management of the money supply.

The implementation of the Bank Charter Act was accompanied by deflation. Credit money quickly grew in significance to compensate for this development, to such an extent that cashless transactions became a defining feature of the British monetary system. Ultimately, however, the Act created an excessively rigid and inelastic system; during financial crises, the government was forced to suspend its limits on uncovered note issuance for the first time in 1847, and again in 1857 and 1866, to provide sufficient liquidity to the economy.

This system was the brainchild of the Currency School, which placed a key focus on stability. Following in the footsteps of David Ricardo and Lord Overstone, Currency School proponents had insisted on a mechanical link between the quantity of Bank of England notes in circulation and the Bank's gold reserves. The proponents of this school also stood in the tradition of John Locke and the Quantity Theory of Money, which posited that the money supply is exogenous and that prices adjust endogenously.

Thomas Tooke and John Fullarton were the primary advocates of the dissenting Banking School, and they too were part of a broader tradition. One of their forebears was Henry Thornton, who faced off against David Ricardo during the earlier Bullion Controversy. Thornton called for the discretionary expansion of liquidity during financial crises. Banking School theory was significantly shaped by the Real Bills Doctrine and Law of Reflux. The Real Bills Doctrine states that credit money cannot be over-issued if it is based on real bills (i.e. valuable short-term transactions secured by goods). The Law of Reflux asserts that money is destroyed when a loan is repaid. Thomas Tooke derived his Income Theory of Money from this insight, reversing the quantity theory to describe prices as exogenous and determined by real economic conditions rather than by the money supply. In Tooke's income theory, the money supply is driven by private commercial banks' credit creation.

The Currency School emphasized stability, while the Banking School prioritized elasticity. More specifically, the Currency School called for tight, rules-based control of the money supply while accepting monetary scarcity as a possible outcome. By contrast, the Banking School argued that money should remain elastic,

expanding as needed through loan issuance by private banks to support economic activity and investment. The two-tier banking system was not merely a compromise between these two positions, but rather a product of the competing and legitimate demands placed on the monetary and banking system as it evolved over time. With the establishment of the two-tier banking system, the Bank of England was responsible for assuring stability while commercial banks were responsible for assuring elasticity. The Bank of England note - that is, the currency - became the anchor that linked the currency to private credit money, thus ensuring this balance (Greitens 2026).

Considered against the backdrop of the Currency School-Banking School debate, the digital euro's goal of maintaining the two-tier banking system, thus ensuring a balance between stability and elasticity, is plausible and coherent. However, the digital euro cannot achieve this goal by itself. A range of supplementary measures are required, not least to improve the functionality of commercial banks by reconsidering banking regulation. In the US context, stablecoins may suffer from a lack of elasticity in the future, given the availability of safe assets to back them or general uncertainty regarding their value. In the wake of the Bank Charter Act of 1844, the Bank of England suspended the gold backing of its notes during crises; the same fate could befall stablecoins, potentially prompting the Fed to act as lender of last resort.

## Conclusions

The ECB is seeking to implement the digital euro to prevent the fragmentation of the existing monetary system, maintain the primacy of the state currency, and protect its singleness. As the digital transformation of the economy continues apace, the digitization of the euro would appear to be a *sine qua non* for preserving its anchor function, for cash alone will be unable to sustain this function in the future.

Our discussion of Prussia's failed introduction of a new coinage standard discloses a crucial precondition for the success of the digital euro - namely, political consensus in combination with political clout. Prussia's failure to appreciate its limited political power was fateful; policy alone is insufficient. Our historical discussion also reveals the importance of balancing stability and elasticity, because focusing solely on one aspect at the expense of the other can lead to a fragile system susceptible to crisis. Our discussion also showed the importance of a central bank that exercises control over monetary policy and is committed to price stability, without encroachment by fiscal policy pressures. Indeed, this focus on price stability is essential for confidence in a currency to be maintained in an environment of currency competition.

The US and Europe are ultimately pursuing divergent responses to technology-driven changes in the financial system. The US government is strongly focused on stablecoins backed by government debt to

enable the rapid adoption of technological innovation and consolidate the US's technological lead. This approach is associated with the goal of weakening the Fed and generating fiscal revenue through the issuance of Treasuries to back stable coins, which can be likened to a modern form of seigniorage. In contrast to the EU's plans for the digital euro, US stablecoins will not be limited to the US; one aim is to shore up the global dominance of the dollar by making US stablecoins available internationally. While Hayek's concept of currency competition provides the theoretical foundation for this approach, this concept is only partially applicable to the present case. One problem is that stablecoins can undermine the credibility and effectiveness of the Fed's monetary policy. In the event of a crisis, stablecoins' backing requirements will most likely be weakened, as has historically been the case for gold redeemability. This could lead to a situation similar to the free banking era in the US or the monetary fragmentation of the Holy Roman Empire, with attendant uncertainty and currency pricing risks.

In Europe, the main driver of the digital euro project is not member state governments or the European Commission, but rather the ECB, which is seeking to preserve its monopoly over the currency in the digital age. This paper sought to show how, historically, the relationship between elasticity and stability in a two-tier banking and monetary system was safeguarded, while also averting fragmentation. The problem with the European approach is that various technological innovations may not proceed at the same speed. If the development of the digital euro is driven by the ECB as planned, private-sector developments also from outside the EU could outpace the ECB's offerings, leaving the central bank unable to catch up, which could have fateful consequences for the euro. At the same time, disintermediation poses the risk of an inelastic monetary system, restricting the financing options available to firms. In the absence of sufficient political support, maintaining the monopoly over the currency may prove impossible.

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