The Quest for Stable Money
Central Banking in Austria, 1816–2016
# Table of contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td>12</td>
<td>A first try at monetary autonomy—the Wiener Stadt Banco (1706–1816)</td>
</tr>
<tr>
<td>13</td>
<td>Public banks in the 1600s and 1700s—innovative payment services and public debt management</td>
</tr>
<tr>
<td>15</td>
<td>A bankrupt sovereign in need of a public bank</td>
</tr>
<tr>
<td>23</td>
<td>Paper money and inflation</td>
</tr>
<tr>
<td>34</td>
<td><strong>Fragile stability during the Nationalbank's formative years (1816–1848)</strong></td>
</tr>
<tr>
<td>35</td>
<td>A private stock corporation as a guardian of Austria's currency</td>
</tr>
<tr>
<td>46</td>
<td>Note-issuing bank of an economically and politically heterogeneous empire</td>
</tr>
<tr>
<td>52</td>
<td>The tasks of the Nationalbank</td>
</tr>
<tr>
<td>64</td>
<td><strong>Turning from the treasury's banker to the banker's bank (1848–1878)</strong></td>
</tr>
<tr>
<td>65</td>
<td>1848—the revolution accelerates long-term change</td>
</tr>
<tr>
<td>70</td>
<td>The return to convertibility proves to be a moving target</td>
</tr>
<tr>
<td>81</td>
<td>Taking on a new role in the financial system</td>
</tr>
<tr>
<td>88</td>
<td>Monetary policy after 1866: from fiscal to monetary dominance against all odds</td>
</tr>
<tr>
<td>96</td>
<td><strong>200 years of monetary policy in pictures</strong></td>
</tr>
<tr>
<td>112</td>
<td><strong>Two governments, one bank—the Austro-Hungarian monetary union (1878–1914)</strong></td>
</tr>
<tr>
<td>114</td>
<td>A separate note-issuing bank for Hungary?</td>
</tr>
<tr>
<td>124</td>
<td>Return to a stable external value</td>
</tr>
<tr>
<td>131</td>
<td>Conducting business in a large empire</td>
</tr>
<tr>
<td>142</td>
<td><strong>World War I and the collapse of monetary union (1914–1919)</strong></td>
</tr>
<tr>
<td>143</td>
<td>War preparations and the initial weeks of conflict</td>
</tr>
<tr>
<td>144</td>
<td>State financing and central bank policy during the war</td>
</tr>
<tr>
<td>150</td>
<td>The end of the monarchy and the joint currency</td>
</tr>
<tr>
<td>152</td>
<td><strong>Hyperinflation and a new currency (1919–1931)</strong></td>
</tr>
<tr>
<td>153</td>
<td>Hyperinflation and stabilization</td>
</tr>
</tbody>
</table>
The League of Nations loan
Central bank policy under foreign control, 1923–1929
The schilling replaces the crown

**The Creditanstalt crisis, the Great Depression and World War II (1931–1945)**
The Creditanstalt crisis
Restructuring of banks
Stable exchange rate, stagnating economy
Liquidation of the OeNB, the reichsmark replaces the schilling

**Schilling reinstatement and economic miracle (1945–1971)**
The schilling returns
Dynamic catch-up process and stability risks

**Austria's hard currency policy (1971–1999)**
The crisis of the Bretton Woods system
Exchange rate policy as an anti-inflation policy
Financial market liberalization, EU accession and preparations for the euro

**A single European currency—the OeNB as a Eurosystem central bank (1999–2016)**
Monetary policy may change, but the objective does not
The common monetary policy, 1999 to 2015
New instruments to ensure financial stability

**Conclusion**

Currencies
Notes
References
Sources
List of tables, charts and maps
Photo credits
Index
Acknowledgments
A first try at monetary autonomy—the Wiener Stadtbanco (1706–1816)

“The paper money scissors absolutely have to be taken out of the treasury’s hands … History and experience have invariably shown that if the power to cut out paper money lies with the public administration, it is as if a child had been handed a knife: It is impossible to prevent the treasury from damaging the country.”

Count Zinzendorf in a petition to the emperor submitted August 1, 180612
On June 1, 1816, Emperor Francis I signed the decrees establishing the privilegirte oesterreichische National-Bank, almost exactly one year after the conclusion of the Congress of Vienna marking the end of a 20-odd-year period of wars in which Europe and Austria had been embroiled. Ultimately, the Austrian Empire emerged as one of the victorious powers, albeit with empty state coffers and a depreciated currency. The pressing tasks of the newly founded note-issuing bank thus consisted in supporting the state in restoring financial order and in reestablishing a sound currency.

The National-Bank was not the first bank Austria had created to shore up government finances. The first proposals to found banks based on Italian models were made in the first half of the 17th century, but they were never implemented. Not until some 80 years later were financial institutions established that should assist in securing long-term financing for the public budget: the Banco del Giro, founded in Vienna in 1703, and the Wiener Stadtbanco, the Vienna City Bank, established in 1706.

Public banks in the 1600s and 1700s—innovative payment services and public debt management

On foundation, the Banco del Giro and the Wiener Stadtbanco joined the ranks of some 25 public banks already established across Europe. These banks were operated by the treasury, by autonomous provincial or municipal entities, or by groups of people endowed with special rights and privileges by government. The first public banks were set up in the late Middle Ages in the western Mediterranean area; banks in the Netherlands and Germany followed in the 16th century. Public banks were generally founded for one of two reasons, one being the need for an institution that would provide a stable means of payment. This was the case in Amsterdam, Genoa or Hamburg, which had suffered from the simultaneous circulation of different types of coins of varying qualities before the advent of public banks, whereas in Venice, cashless payment transactions had come to a standstill after the private banks that had handled them became insolvent. A second reason to found a public bank lay in the hope...
of facilitating the management and servicing of the public debt. To this end, national or municipal debt to individuals was—in simplified terms—converted into deposits with the public bank. These deposits were tradable through transfers and could be used as a means of payment for private transactions. Such arrangements providing for the transfer of debt into a form of money made holding public debt more attractive, so it became easier for the government to take out new debt. Ergo, these banks’ common feature consisted in the creation of book money—deposit currency that had a more stable intrinsic value than coins or holdings with private banks and that was thus the preferred instrument for payments or could be traded more readily than other public debt instruments. Providing a stable means of payment and making government debt tradable are of course closely linked functions, as the Stadtbanco example will show below. At any rate, for all their differences, the public banks of the 15th to 18th century were the precursors of modern central banks, given their pivotal role of creating a liquid means of payment with a stable value.16

The banking models which evolved in the 15th and 16th centuries were further refined and adjusted over time. The mainspring of these developments were innovations that enhanced the quality of financial instruments—debt instruments and especially payment instruments. For such advances to catch on, their advantages had to accrue to issuers—the banks or the public administration—and to users of the instruments alike. Clearly, issuers had a vested interest in their instrument being used, which in the long run would happen only if people were willing to adopt it. Innovations could be technical, legal or institutional. Banknotes are an example of a technical innovation (pioneered by Sweden, France and England) that broadened the reach of money transfers because it freed businessmen from the need to hold an underlying bank account to make or receive payments. A legal innovation was the possibility of paying taxes without physically transferring coins, another winning feature of banknotes and bank deposits. Finally, an example of an institutional breakthrough was the removal of the bank of issue from the direct control of the state, preventing the government from covering its expenditure by putting too much money into circulation. The independence of the bank of issue protected monetary stability and increased the appeal of banknotes and ledger money alike.
A bankrupt sovereign in need of a public bank

The merits of public banks for a well-functioning economy and for a high credit standing of the state did not go unnoticed in Austria. Indeed, a number of blueprints were developed in the 17th century for banks that would facilitate payments and support trade. Yet the first public bank to be actually established in Austria in the early 18th century was clearly created for another key reason: out of the need to improve public debt management.

Public finances in Austria around 1700

The driving force behind the foundation of the Banco del Giro in 1703 was the looming insolvency of the state following the death of the merchant and banker who had played a central role in public finance, Samuel Oppenheimer. The very fact that a single individual could be a linchpin is indicative of how public finances were organized during the reign of Leopold I: They were inextricably bound up with the identity of the reigning monarch. Revenues and expenditure as well as debt were connected to the monarch ad personam. Technically, the national budget was dependent on two revenue streams, which theoretically fed two expenditure streams. One stream of revenue was the income that arose from royal prerogatives, like monopolies, returns from mining rights and the rights to levy tariffs, customs and excise duties. This revenue—the camerale revenue, i.e., income administered by the court treasury (Hofkammer)—was mainly channeled into civil spending. The funds for the military budget resulted from tax income, called contributionale income, the collection of which had to be authorized by the diet in which the nobility, the clergy and the municipal administration were represented. Above all during wartime, the authorized expenditure was often less than needed, and the representatives of the estates wielded their power of assent to elicit concessions from their sovereign in other matters. Not surprisingly, the negotiations often proved arduous. Time and again, the sovereign was forced to bankroll gaps in the military budget by drawing on the camerale budget or by borrowing, even more so as Austria was in a state of almost permanent warfare.
Just like all state revenue went to the sovereign ad personam, all debt incurred was his personal responsibility, not that of the state. Debt was generally collateralized by pledging earmarked revenue to which the sovereign was entitled, like customs or tolls. Binding debt ad personam to the sovereign subjected such transactions to high risk. The rule of law was not fully developed, and the sovereign’s dealings with his creditors were autocratic and arbitrary. If the coffers were empty, creditors could face unilateral extensions of payment deadlines or see short-term claims rolled over into long-term debt. Creditors with less clout could be turned away; major creditors could be charged as criminals or jailed. Many of the government’s business partners were, moreover, at a disadvantage in transactions with the erratic authorities because they were members of a religious minority. Jews were especially vulnerable: All Jews had been expelled from Vienna within recent memory, in 1670, and the few families that had been permitted to settle in Vienna since were subject to tough restrictions. As timely payments by government depended on the negotiation skills of individual creditors, government promises of payment were virtually untradable. Thus it was that around 1700, only few creditors were willing or able to lend the sovereign money. For the government, the lack of attractiveness of its debt securities meant that it had to pay high interest of between 6% and 12% or temporarily even 20% on long-term debt; short-term and thus more pressing loans commanded even steeper rates.

To effectively wage war and to meet all other official expenses in this system, the sovereign depended on wealthy private-sector financiers for buying weapons, keeping the troops supplied, procuring goods and, of course, funding the related transactions. In Vienna, this money came from a group of warehousers and court suppliers, who served as both brokers of goods and brokers of money: merchants were bankers and vice versa. The business model drew extensively on international family networks that facilitated trading and banking. Most of all, the networks also gave merchants and bankers access to their business partners’ considerable financial resources for onward lending to the sovereign. These merchant families were by no means all Jewish; Protestants also played an important role. In addition to providing their own capital, the court agents also negotiated loans from the nobility and high officials to the
sovereign. For these lenders, engaging the services of a court agent had benefits: The court agent was sufficiently indispensable to the emperor to enforce his claims—and thus indirectly those of his suppliers and creditors—against the emperor. But the mutual dependency of the sovereign and the financiers as well as the powerful role of individuals made this system highly vulnerable to disruptions.

In Western Europe the state emancipated itself progressively from the reigning monarch during the 17th and 18th centuries. This dissociation was the prerequisite for a modern market for government debt. The Habsburg monarchy embarked on this process later than other countries: It did tap the existing Western European markets to issue bonds from the late 17th century onward, collateralizing the bonds with revenues from copper and mercury mining. Domestically, though, the government broadly retained its funding habits. Yet by the beginning of the 18th century, the decision makers had realized that the framework of public finance governance, in particular public debt management, had to be improved on the pattern of foreign models. Oppenheimer’s death in 1703 very dramatically exposed the system’s weak spots.

Oppenheimer had been truly essential in keeping Austria’s public finances afloat. On his decease, scores of creditors turned to the government for satisfaction with the argument that Oppenheimer had merely brokered their business and that their claims on Oppenheimer ultimately represented claims on the state. As the state did not have the funds to service its debts with Oppenheimer, it imposed a moratorium, thus precipitating a general financial crisis. The need to mitigate the immediate impact of the bankruptcy and the foresight to address the basic problems of state debt management at the same time led to the creation of the Banco del Giro, a bank that was not only named after its Venetian namesake created in 1619 but also copied its business model: making claims on the state, notably those from the Oppenheimer bankruptcy, transferable in the form of bank accounts. The respective claims would thus no longer be assertable directly for payment in cash from the state, but instead be kept in circulation as book money. If accountholders found that book money was useful for facilitating payments, the state even stood the chance of attracting additional deposits from individuals in the medium term—provided the liabil-
ities of the Banco del Giro were credibly backed. That was to be achieved by assigning selected state revenues as collateral. And this is the very point at which the project failed: The provinces and the court treasury, the body in charge of administering the *camerale* budget and thus the precursor of the finance ministry, insisted that tax revenues were earmarked and could not be reallocated at a whim. Hence, the Banco del Giro did not obtain the funds it needed and was unable to fulfill the role it had been assigned. While it continued to exist as part of the Stadtbanco founded in 1706, it no longer played a role as an independent institution.\(^{32}\)

**Benefiting from Vienna’s credit score—the Wiener Stadtbanco**

In the meantime, Count Gundaker Thomas von Starhemberg, head of the court treasury since 1703 and hostile to the Banco del Giro, was promoting banking projects of his own, which were crowned with success after the death of Leopold I and the accession to the throne of Joseph I in 1705. Like the masterminds of previous bank plans for Austria, Starhemberg was well aware of the achilles heel of any public bank in an absolut monarchy: The ability to build public trust hinged on independence from the state, and building trust was a prerequisite for getting citizens to make deposits and accept money issued by the bank in payment. To build trust in the independence of his initial banking project, Starhemberg intended to give a prominent role to the estates of the Austrian and Bohemian crown lands. His rationale was as follows: being representative bodies, the estates had the right to levy taxes and enjoyed autonomy from the emperor and were thus in a position to lend financial support to the bank.\(^{33}\) The scenario that was actually implemented in 1705 accorded this role to the City of Vienna, which was an integral part of the Lower Austrian estates. Starhemberg thus copied a system that had worked well in France, where the king exploited the good credit score of the municipality of Paris to raise new debt more easily and at a lower cost.\(^{34}\)

The bank thus created started to operate in 1706 under the name of Wiener Stadtbanco.\(^ {35}\) Unlike the business model proposed earlier, which intended the bank to use its deposit base in support of trade and industry, the sole purpose of the Stadtbanco was to fill the state’s war coffer. To this effect, the state trans-
ferred part of its debt to the municipality, which assumed responsibility for the payment of interest and capital on the debt and received earmarked tax revenues in return. To secure the public’s trust, the bank was run by municipal government officials, and the municipality of Vienna also provided guarantees for the bank’s liabilities. The Stadtbanco’s independence from influence was meant to ensure that the bank accepted government debt only if it was appropriately covered by tax revenues. Depositors were promised exemption from taxation and protection against seizure of property, especially during wartime. This was a material advantage particularly for foreign creditors. In return, the Stadtbanco had to cede any profits from its more efficient administration of the pledged taxes or from lower interest on debt to the state. In other words, like the Banco del Giro, the Stadtbanco was not a bank in the modern sense, but a special agency administering the public debt. It generated advantages for the state’s creditors and thus made holding state debt more attractive, which in turn made it easier to finance the public debt at a lower interest rate.

In reality, the role of the Vienna municipality in administering the bank was far weaker than the public was led to believe, and it was curtailed more and more over time. As a case in point, the Ministerial-Bancodeputation—the supervisory body first installed to represent the finance ministry at the Stadtbanco—was given the right to intervene directly in operations as early as in 1706. In 1716, the magistrate lost the right to appoint the bank’s officials. In retaliation, the municipal authorities in 1717 announced that they would be liable for the Stadtbanco’s debt only to the extent of the anticipated income on the revenue assigned to the bank. Increasingly, the separation between the bank and the treasury existed only on paper.

Despite the close association between the Wiener Stadtbanco and the court treasury, the new institution nevertheless succeeded in gaining the trust of the public over time. At the outset, the bank was mainly engaged in setting up and managing interest payments on the claims on the predecessor bank, Banco del Giro, and in rolling them over into longer-term debt of the Stadtbanco. It also succeeded in increasing profits by managing the taxes and duties transferred to it more efficiently. From 1712, the bank received growing volumes of deposits that could be withdrawn anytime subject to a period of notice that was contin-
gent on the amount withdrawn. By 1724, some 90,000 investors had made deposits with the Stadtbanco, bringing the total volume to several million florins.\textsuperscript{39} No small part of the Stadtbanco’s success was due to the scarcity of interest-bearing, liquid investment alternatives in the early 18\textsuperscript{th} century. The Stadtbanco was particularly attractive for small investors. The estates of deceased craftsmen, for instance, frequently contained deposits of 100 to 1,000 florins, sometimes also more.\textsuperscript{40} The circle of government creditors expanded, marking another key step toward reducing the dependence of government on a single creditor.\textsuperscript{41} The great appeal to investors was reflected by the drop in the interest rate on government debt from between 9\% and 20\% at the start of the century to just 5\% to 6\% in the late 1720s. Consequently, all 6\% government bonds were converted into 5\% bonds in 1732 and into bonds carrying only 4\% interest in 1766.\textsuperscript{42} At the same time, the Stadtbanco’s high credibility made it possible to raise large volumes of funds for the state at short notice if required.\textsuperscript{43} From the finance administration perspective, the Stadtbanco was thus a tremendous success.

The further biography of the Stadtbanco was conditional on the development of the fiscal deficit. The government tried to take advantage of the Stadtbanco’s favorable financing conditions without going so far as to endanger the bank’s credibility and the confidence in its liabilities. It is hardly surprising that differences of opinion often arose between the bank’s management and government officials about defining the limits of government borrowing. Moreover, the different perceptions were compounded by political conflicts. Emperor Charles VI, for example, was less well disposed toward the bank than his predecessor, Joseph I, and attempted to establish a new bank that was directly answerable to the state. This institution, Universal-Bankalität, operated from 1715, but with little success. It had to be taken over by the Stadtbanco in 1721 to prevent its insolvency.\textsuperscript{44} The Stadtbanco, though, proved to be an effective support in financing the numerous and, on occasion, long drawn-out wars against the Ottoman Empire and France. A comparison of the public debt at the beginning and at the end of Charles VI’s reign illustrates the Stadtbanco’s importance: The volume of direct government debt financing—money the state received directly from creditors—barely changed from 1711 to 1740 and came to
just under 50 million florins. Conversely, during the same period, the government debt held by the Stadtbanco rose from 12 million to nearly 55 million florins, meaning that all new government borrowing during Charles VI’s thirty-year reign was handled by the Stadtbanco.45

**Municipal bank in name only: turning into a general government authority**

Maria Theresa’s accession to the throne in 1740 did not result in any immediate changes in the Stadtbanco’s management. Providing cash advances to the state and issuing Stadtbanco debt certificates for government use as payment or collateral remained the bank’s most important operations.46 1745 marked the death of Count Starhemberg, on whose initiative the bank had been founded in 1706 and who had decisively influenced the bank’s policy as the president of the Bancodeputation since 1711. After the Austrian war of succession (1740–1748) had ended, Empress Maria Theresa introduced a number of reforms to transform Austria from a loose association of estates-based states to a uniform, centrally administered state. The reforms concerned the military, educational and legal systems and especially the administration of public finance. In the next decades, the power of the estates was gradually curtailed and at least the Bohemian and Austrian lands were combined into a centrally administered state.47

Against the backdrop of these reforms, the organization of the Stadtbanco was an anachronism with its co-management by the Vienna municipal authorities and its authority to levy various duties, depriving the sovereign of his direct claim to this revenue. In an era of absolutist centralization, policy makers clearly favored a purely state-operated credit institution. Accordingly, from 1749, the influence of the Vienna municipal authorities was limited to appointing the chief tax collector and cashier, whereas the bank was run exclusively by the civil servants seconded from the finance ministry. A Prussian diplomat in Vienna aptly described this change when remarking that the Bancodeputation, originally simply charged with supervising that the management appointed by the municipal authority complied with regulations, had “gradually taken full management control of the Stadtbanco, reducing the role of the municipal administration to that of lending its name.”48 But the reforms launched
in 1749 by Count Friedrich Wilhelm Haugwitz, Maria Theresa’s chief financial
counselor, left the statutory organization of the Stadtbanco and of the Bancodeputation unchanged, at least on the surface.\textsuperscript{49} Nobody wished to damage
the bank’s creditworthiness by moving it closer to government control. In the
public eye, the president of the Bancodeputation now personified the guaran-
tee that the bank would retain a certain degree of independence from the
treasury and would thus secure its public standing and its success. This strategy
continued to work for the time being when Count Rudolf Chotek was elected
president of the Bancodeputation in 1749.\textsuperscript{50}

Yet the treasury’s appetite was by no means sated. When a government re-
form was launched in 1761, Chancellor Wenzel Anton von Kaunitz criticized the
lack of state control of the tax revenue earmarked for the Stadtbanco. Kaunitz
did not have a high opinion of the Stadtbanco’s independence and designed a
scheme for a state bank fully integrating the Stadtbanco as well as the Bancodeputation into the treasury.\textsuperscript{51} Another plan, masterminded by a counselor
to Empress Maria Theresa, Count Karl von Zinzendorf, envisaged upgrading
the Stadtbanco into a bank of issue, based on the model practiced in England.\textsuperscript{52}
Zinzendorf proposed converting government debt into bond debt, his inten-
tion being that government funding needs would no longer be met by the
Stadtbanco but directly by investors. However, both plans proved unfeasible.
Zinzendorf at least succeeded in founding the Vienna Stock Exchange in 1771,
a public, regulated market that made trading in government securities more
transparent and thus more attractive to investors.\textsuperscript{53} In a political environment
with increased absolutist and centralization tendencies, the forces in favor of
putting a single agency in charge of government revenue prevailed in the end.
Further reforms incorporated the Bancodeputation into the court treasury in
1764/65. Nevertheless, the appearance of independence was kept up, and even
Joseph II was aware that the autonomy of public debt management, for the very
purpose of which the Stadtbanco had been launched in 1706, had to be pre-
served on paper so as not to compromise the attractiveness of the Stadtbanco’s
bonds.\textsuperscript{54} Ultimately, although its independence was increasingly curtailed, the
Stadtbanco existed for more than 100 years, to be superseded only by the
Oesterreichische Nationalbank in 1816.\textsuperscript{55}
Paper money and inflation

Next to the foundation of the Stadtbanco, the issue of paper money was the second great financial innovation in Austria in the 18th century. Paper money—an interest-free, readily transferable means of payment—was the end-point of a development begun in 1706 to devise more liquid and thus lower-interest forms of government debt. The introduction of paper money marked a significant structural break in Austria’s monetary history. Once again, the government’s pressing need for funds gave rise to this innovation. In 1762, Austria was in the throes of the final stage of the Seven Years’ War (1756–1763) and urgently required additional money that it was unlikely to obtain from either taxes or loans. The Stadtbanco was instructed to issue 12 million florins of paper money, called Bancozetel. The paper florins carried neither interest nor a compulsory conversion rate; nobody could be forced to accept them. But they came with the convenience of being legal tender at par for up to half of tax payments due. The new notes could be paid for only with coins and could be redeemed for coins at the Stadtbanco at any time. As it was assumed that part of the notes would remain in circulation, the Stadtbanco could lend the government the cash equivalent. To make the paper florins attractive for use in payments, they were issued in fairly small denominations: Some 4.5 million of 12 million florins were notes with a face value of 5 florins. The issue was intended as a temporary measure to tide over the government until it could return to floating government bonds. Therefore, holders of at least 200 paper florins were entitled to exchange these for Stadtbanco obligations bearing 5% interest, and the law called for the destruction of redeemed paper florins. 7.8 million paper florins were returned until 1766 and were burned in a high-profile operation just outside the city walls, “on the glacis left of Schotten-Thor.”

Despite these returns, paper florins had remained in circulation for a notable period. Their appeal showed among other things in their premium of 1% to 2% on coins in the market: The public was obviously willing to pay extra for the ease of handling paper florins. Their success story made paper money issues a keystone of government strategy for future wars. While paper money issuing was still looked upon mainly as an extraordinary measure, issues on a
small scale even during peacetime were heralded as a way to economize on coin metal and to accustom the public to paper notes.\textsuperscript{61} When the bulk of the paper florins launched originally had been redeemed by 1770, a second 12 million paper florin tranche was issued in 1771. Again, the issuing volume was officially announced, but this time, there were two important changes compared to 1762: The notes could no longer be exchanged for interest-bearing bonds, but they could now be used to pay taxes to the full extent. In fact, half of all tax debts over 10 florins had to be settled in paper money. This forced the general public to use paper money, resulting in the spread of paper florins to peripheral areas previously unfamiliar with paper money. When more paper money was issued in 1785, geographical coverage was extended to Galicia, Hungary and Transylvania.\textsuperscript{62} The value of the paper money issued thus reached 20 million florins throughout the Habsburg monarchy.

**Paper money finances the Napoleonic wars**

In 1792, a long series of wars between France and varying European coalitions began during the French Revolution and continued throughout Napoleon’s reign. With some interruptions, the military conflict went on for more than 20 years, until 1815. Austria participated in nearly all wars in the coalitions against France, so until 1814, it was invariably among the losers. The wars and the reparation payments to the victors were expensive, and issuing new paper money was a quick fix to finance the required expenditure, driving a powerful rise in the volume of paper florins in circulation from 1797 onward (chart 2.1). As a result, the government increasingly had to resort to coercion to keep paper florins in circulation. First, new issues were no longer officially announced, as the public became apprehensive about the growing amounts of paper money and more and more frequently presented paper money for exchange into coins. Second, the government decreed in 1796 that paper money had to be accepted for government payments to individuals. In early April 1797, the government restricted paper florin redemptions for coins to 25 florins and extended compulsory acceptance to transactions between individuals. Once the unlimited convertibility of paper florins had ended and acceptance for private-sector transactions had been made mandatory, the last two hurdles to
an unfettered issue of further paper money had been removed. The path to inflation had been cleared.

From now on, not only did the circulation of paper money swell rapidly, but the remaining metal currency also began to disappear from circulation. At the stock exchange, the premium of paper money over silver reversed into a rising premium of silver over paper money (chart 2.1). The dwindling volume of silver coins in circulation made payment transactions more cumbersome. People hoarded not just the largest coins, like the 1-florin coin, but also the smaller coins—they, too, were made fully of silver. The silver content of the florin had been standardized in the coin reform of 1753 that defined 20 florins to equate 1 Cologne fine mark, which contained about 234 grams of silver. Agreements with Bavaria and most imperial estates made this “Convention standard” the general coinage standard in Germany, too. Austrian coins were thus also referred to as “Convention standard florins,” as expressed by the abbreviation “CM” for Conventionsmünze used after the abbreviation “fl” for florin. The Convention standard was also applied to smaller coins down to the 3-kreutzer coin, 20 of which contained the same amount of silver as a florin coin (in the predecimal system, 1 florin equaled 60 kreutzer). People therefore hoarded low- and high-denomination coins alike. This represented a problem for payments: Large amounts could be settled with paper money, but there was no paper substitute for small amounts, as the lowest paper money face value was 5 florins. Low and mid-value coins were already in short supply during the winter of 1794/95. The government responded by issuing smaller coins with a markedly lower silver content. In the next few years, a debasement race between silver coins and paper money ensued, where the declining value of paper money made it attractive to hoard even the newer coins with a lower silver content. Whereas the silver content of the 1-florin coin remained intact in mint runs after 1796, the silver content of the 6-kreutzer and 12-kreutzer coins was diluted to less than half. After 1799, all pretense was dropped and coins were minted only in copper; after 1807, even the 30-kreutzer coin (½ florin) was struck in copper. In this fashion, no less than 150 million florins worth of silver coins and 10 million florins worth of copper coins were put into circulation—only to disappear again in no time. In 1799, the first paper money with face values of
1 florin and 2 florins was issued. In June 1800, about 190 million paper florins were in circulation, and by the time Austria had been defeated in the War of the Second Coalition at the end of 1801, the circulation had ballooned to nearly 320 million florins.

Chart 2.1: Paper money in circulation, silver price of paper money at the Vienna Stock Exchange and food prices in Vienna (logarithmic scale)

In the period displayed, currency reforms were implemented in 1811 and again in 1816. Data comparability over time was ensured by converting all nominal values into paper florins as used before 1811. From the beginning of wars against France in 1792 until 1816, the volume of paper money in circulation grew a hundredfold in Austria. During these years, brief peacetime periods in which the circulation volume was stable from 1803 to 1805 and 1810 to 1813 alternated with phases in which the money volume surged, in particular from 1809 to 1810 and 1813 to 1816. Until 1796, the rising amount of notes in circulation had no effect on the price of paper money in silver or the general price level. Even after silver traded at a premium over paper money, the devaluation of paper money at the stock exchange trailed money supply growth for a long time. In 1806, paper money inflation finally accelerated. In 1818, the price of silver and the general price level stabilized at about 12 times the pre-war level.
Index

advances 52, 61, 62f., 68f., 79f., 135f., 150, 249
development of 46, 57, 59, 84f., 87f., 90, 94f., 144,
147f., 167, 188, 193
eligible counterparties and collateral 43, 45, 61, 57,
84f., 92
interest rate on 43, 88, 92, 163, 233
Allgemeine Depositenbank 165—166
allied military schilling 195
Alpine lands 49
Androsch, Hannes 224
Anglo-Austrian Bank 159, 172
Antizipationsscheine (anticipation certificates) see
paper money
Arnstein & Eskeles, banking house 48, 69, 87
Austrian State Treaty (1955) 214
Austro-Hungarian Bank see Nationalbank
Austro-Keynesianism 228
Avenol, Joseph Louis Anne 182
Banco del Giro 13, 17f.
Bancozettel see paper money
banking union 264f.
Bank for International Settlements (BIS) 178f., 208
Bank of England 22, 157, 159f., 165f., 169f., 172, 175, 178f.,
180, 260; (Peel’s Act) 78f.
bank of issue, regional 115
banknotes see paper money
coinage standard see florin, Wiener Münzkon-
vension
Compromise, Austro-Hungarian see Hungary
convergence criteria 239
discount operations 52, 60f., 68, 247
counterparties in 43, 45, 56, 69, 82, 86f., 135f.
development of 43, 45, 56, 86f., 90, 92, 94f., 134f., 144,
150, 249
devaluation (change of silver or gold parity) (1811)
29f. (1892) 128; (1933) 183; (1936) 187
Devisenzentrale (central office of payments to and from
foreign countries) see foreign exchange control
Dietrichstein, Josef 41
discount committee 60, 56, 131
discount operations 52, 60f., 68, 247
branch offices of the Nationalbank
contract offices 132f.
establishment of 56f., 83f., 115, 120, 131, 133
exchange offices 47, 48f.
international 83f., 115, 119, 121, 131, 134f.
Braun's, Viktor 164, 172, 176, 187
Bretton Woods 204, 221, 223, 225, 246
Brno 47, 51, 82
Bruck, Karl Ludwig 73, 115
Bruns, Gijsbert 179
Budapest 47, 51, 82f., 95, 115, 119f., 121, 131, 134f.
Bundesbank, Deutsche 224, 234, 245—247
capital flight 155, 158, 210, 224f.
capital market legislation (1954) 211
Castiglioni, Camilla 165
checkers of deposit 148
Charles VI 20
clearing agreements 183, 204
coin 24
hoarding of 25f.
in circulation 50f., 130
coefficient of variability see florin, Wiener Münzkon-
vension
Crown, fl. 128
currency basket 225
currency reform, see florin, crown, schilling
currency separation 122, 150
current account 188, 203, 205, 229
debt crisis, international 235f.
deflation see price developments
Dessewffy, Emil II
development 43, 45, 56, 69, 82, 86f., 135f.
development of 43, 56, 86f., 90, 92, 94f., 134f., 144,
147, 162, 177, 182, 183, 186
individual limits in 60, 119f., 122
restrictions of 56, 59f., 68f. see also lending, rediscount ceiling
simplification of 84, 90, 132
discount rate, official 56, 59f., 69, 87, 89, 92, 119, 132, 139, 147f., 162, 165, 179f., 207, 210, 218, 230
see also interest rate level
economic growth 31, 48, 80f., 90f., 95, 145, 168, 199f., 203, 208, 214, 228f., 254f.
see also interest rate level
discount rate, official 56, 59f., 69, 87, 89, 92, 119, 132, 139, 147f., 162, 165, 179f., 207, 210, 218, 230
see also interest rate level
economic growth 31, 48, 80f., 90f., 95, 145, 168, 199f., 203, 208, 214, 228f., 254f.
see also interest rate level
discount rate, official 56, 59f., 69, 87, 89, 92, 119, 132, 139, 147f., 162, 165, 179f., 207, 210, 218, 230
see also interest rate level
economic growth 31, 48, 80f., 90f., 95, 145, 168, 199f., 203, 208, 214, 228f., 254f.
einlösungsscheine (redemption certificates) see paper money
einlösungs- und tilgungsdeputation 28f., 39, 40
eskeles, bernhard 41
estates as operators of public banks 18
euro 227, 243
european banking authority (eba) 264
european central bank (ecb) 239, 246–251, 254–256
european currency unit (ecu) 239
see also interest rate level
exchange rate 129—131
see also hard currency policy
exports, promotion of 216, 230f.
francis i 13, 35
francis joseph i 100
free banking 114f.
francis, banking house 48
funk, walther 191
fx swaps conducted by the nationalbank 130, 167
galicia 24, 46f., 49, 84, 123, 134
geneva protocols 157
gesellschaft für revision und treuhändige verwaltung 185
geymüller, banking house 41, 48
gijn, anton van 161
gold balance sheet act 167f.
gold bloc 187
goldklassemverordnung 183
gold coins, minting of 126
gold reserves see reserve assets
gold standard 89, 117f., 124f., 127–131, 157, 175f.
great depression 176
grundentlastung (agrarian reform legislation) 71, 84f., 88
hainisch, michael 169
hamburger bank 87
hard currency policy 225f., 231—234
haugwitz, friedrich wilhelm 22
havenstein, rudolf 154
hengel, adrianus Johannes van 185
hotel de ville de paris 18
hungary 24, 47f., 56, 66, 84f., 87, 91, 94f., 113, 133–136
compromise, austro-hungarian 115–117
compromise, austro-hungarian 115–117
compromise, austro-hungarian 115–117
compromise, austro-hungarian 115–117
compromise, austro-hungarian 115–117
control over who runs the nationalbank and nationalbank policy 119f., 134
demand for a hungarian note-issuing bank 113f., 117–119, 128, 134
demand for a hungarian note-issuing bank 113f., 117–119, 128, 134
demand for a hungarian note-issuing bank 113f., 117–119, 128, 134
renegotiation of customs and trade union 118f., 127
hungarian commercial bank 114f.
hyperinflation 155
hypo-alpe-adria 262f.
independence of the bank of issue 15, 18, 21f., 37f., 42f., 79, 89, 120f., 128, 160, 213, 241, 244f., 250
indicator 225
inflation see price developments
inflation targeting 245f.
inflation targeting 245f.
inflation targeting 245f.
integration, economic 51, 101, 115, 123, 135f., 153
interest rate level
foreign 59, 139, 144, 171, 175, 224f., 235
short-term market interest rates 56, 62, 69, 87, 92f., 93, 135, 147, 163, 170, 231, 233f., 255
interest rate level
foreign 59, 139, 144, 171, 175, 224f., 235
short-term market interest rates 56, 62, 69, 87, 92f., 93, 135, 147, 163, 170, 231, 233f., 255
interest rate level
foreign 59, 139, 144, 171, 175, 224f., 235
short-term market interest rates 56, 62, 69, 87, 92f., 93, 135, 147, 163, 170, 231, 233f., 255
interest rate level
foreign 59, 139, 144, 171, 175, 224f., 235
short-term market interest rates 56, 62, 69, 87, 92f., 93, 135, 147, 163, 170, 231, 233f., 255
international monetary fund (imf) 204, 207
jews 16, 17
joham, josef 195
joseph i 18
joseph ii 22, 46, 48
juch, otto 177
kanatik, eugen 195
kaunitz, wenzel anton 22
kautz, gyula 99
kay, robert 161, 169
kiemberg, victor 160, 181, 184f., 195
koren, stephan 187, 232f., 235

INDEX
Kreisky, Bruno 111, 224
Kübeck, Karl Friedrich 37
Lacina, Ferdinand 239
Länderbank 159
Latin Monetary Union 124f.
Lausanne Protocol 183
League of Nations
loans (Geneva) 156—158; (Lausanne) 181f.; (conversion) 187f.
commissioner-general 157, 160, 188
criticism of Nationalbank policy 166
Lederer, Carl 41, 63, 99
Lviv 47, 49, 101
lender of last resort 57, 67, 90f., 94, 165f., 256f.
lending control of 206f., 218f., 230
subsidized 218
volume of 206, 217f., 227
Leopold I 15, 18
Liberalization
financial markets 234f., 248
foreign trade 210, 215, 234
unwinding of (1972) 227
Lombardo-Veneta 47, 49, 78
London Club 236
Loveday, Alexander 182
Lucam, Wilhelm 93
Maastricht Treaty 239
Macmillan report 175
Mises, Ludwig 162
minimum reserves see reserve assets
Metternich, Wenzel Klemens 65f.
metallurgical reserves see reserve assets
Metterich, Wenzel Klemens 65f.
Mises, Ludwig 162
mortarium 17, 144, 178f., 182f.
mortgage loans 49, 52, 73, 85, 95
monetary union, Austro-Hungary as a 117f., 122f.
see also European Monetary Union
Nationalbank (as an organization)
advisor to 160, 163, 169
as a stock corporation 37, 44f., 70, 73, 117, 122, 159f., 213, 252f.
Austrian directorate (1919–1922) 153–155
banking supervision, role in 238, 258–266
Bezirksbegrenzungsgesetz 240
charter (1817) 41, 42, (1841) 42f.; (1863) 78–80, 116f.; (1876) 118–120, (1887, 1899) 120f.; (1911) 120f., 130f.; (1917) 149f.; (1922) 159–161, 165
conversion into a Reichsbank head office 192f.
dividends 44f., 90, 95, 123, 134, 252f.
Eurosystem, new role in the 247f., 250f.
executive committee 165
foundation (1816) 35; (1922) 158f.
General Council 119f., 120f., 132, 160, 196, 250
governing board 37–41, 43f., 56, 59, 79, 117, 119f., 122, 131
liquidation (1919) 150, 255; (1938) 189, 253
mortgage loan division see mortgage loans
Notenbankgesetz (1955) 211, 213, 252
Notenbanküberleitungsverordnung (1945) 195f., 212
organizational reform 240
renamed Austro-Hungarian Bank 119
role of the state commissioner 41, 42, 79, 83, 250
selection of management 37, 40f., 79, 119f., 160, 196, 250
tasks 36f., 52, 88f., 114f., 159, 213, 244f., 265f.
national conflicts 115f., 121f., 134
Nemes, Adam 40
Niederösterreichische Escomptegesellschaft 86f., 184
Niemeyer, Otto 176
Nixon, Richard 221, 225
Norman, Montagu 157, 177
O’Donnell, Joseph 29
oil prices 227, 232
open market operations 234, 248
Oppenheimer, Samuel 15
Österreichische Industrie-Aktiengesellschaft 185
paper money
circulation (relative to coins) 50f., 126, 139
cours forcé 25, 29f., 66, 114
denominations 23, 25, 66
discount on 25, 26f., 32, 35, 66, 76, 80, 124, 126f., 129–131
issued by the government (redemption certificates, anticipation certificates, small denominations used in the place of divisionary coins, state paper money) 29–33, 52–54, 72f., 80, 89, 92f., 113, 117, 123f., 127, 129, 131, 138, 146
issued by the Vienna Stadtbank (Bancozettel) 23–39
mandatory acceptance in private-sector transactions 24
premium on 24
silver or gold convertibility 23, 36, 38, 46, 66f., 70f., 75, 83, 113, 127f.
stamping, overprinting 28, 29f., 150f.
Paris Club 236
Paritätische Kommission (Parity Commission for Prices and Wages) 29
Partial-Hypothekaranweisungen see state debt, treasury bills
Partial-Hypothekaranweisungen see state debt, treasury bills
payments, cashless 52, 63, 131, 138, 249
Pillersdorf, Franz Xaver 33, 37, 40, 41
Pleiner, Ignaz 78, 79
Postsparkasse 139, 172
Prague 47, 54, 57, 82f., 115, 122, 150
premium losses 209
price-wage agreements 200
private banks 16, 37, 43, 49
privileged access to central bank credit 44, 56, 70
role in managing the Nationalbank 44f.
INDEX 316

154, 168f.
budget consolidation program (1931) 182
consolidation as a precondition for monetary sta-
bility 36, 70f., 127, 154f.
investment 169, 186f.
Nationalbank as fiscal agent 139
occupation costs 198
see also seigniorage, state debt
quantity theory 29, 36, 166
Raab, Julius 209
Rašin, Alois 150
rediscount ceiling 207, 230
Reichsbank, Deutsche 137, 189f.
Vienna head office 192f.
Reisch, Richard 160, 162, 165f., 179, 181
repo loans 92
reserve assets 52, 58f., 59, 65f., 70, 74, 77, 80, 90, 126,
136f., 140f., 143, 148, 161, 170, 180, 188f., 208, 212, 215,
234
revaluation gains on 209f.
retention quota 205
Rizzi, Hans 196
Rost van Tonningen, Meinoud 169, 181
silver standard 35f., 74, 88f., 117, 124–126
suspension of the free minting of silver 126
Sina, banking house 48
single resolution mechanism (SRM) 264f.
single supervisory mechanism (SSM) 264f.
sovereign default (1703) 17; (1811) 29–31
speculation (against the franc) 163; (against the
crown) 161; (against the schilling) 180
Spitzmüller, Alexander 154, 162
Stadion, Johann Philipp 35, 40, 41
Starhemberg, Gundaker 18, 21
state
control over who runs the Nationalbank 37, 40f.,
120, 160, 196, 250
control over Nationalbank policy 42f., 62, 69, 79,
83–85, 89, 120f., 167
share in the Nationalbank's profit 43f., 80, 252
state debt 31f.
administered by public banks 14, 19
agreement on the settlement of pre-war debt 209
bonds 17, 43f., 73; (reconstruction bonds) 21f;
(gold bonds) 129; (war bonds) 145f.; (Nationalanle-
hen, government bonds) 73, 84, 88
towards the Nationalbank 52–55, 65f., 70–73, 80,
89, 117, 120, 147, 154, 169, 183, 202
conversion of foreign debt (1934) 187f.
interest rates on 16, 20, 30, 44, 55, 80, 127, 158, 187f.,
208, 235, 239
treasury bills (Partial-Hypothekaranweisungen)
54, 93
see also public finances, sovereign default
state paper money see paper money
Steiner, Melchior 41, 48, 99
Steinwendler, Otto 151
Strakosch, Henry 176
Strong, Benjamin 157
subsidized loans 218
support committee 69, 82, 94f.
for the stock exchange (1873) 94; (1925) 164f., 170
terms of trade 205
Thaa, Viktor 179, 182
Thausing, Friedrich 195
Times (The Times) 166
Tisza, Kálmán 119
trade balance 190, 208, 210
Trieste 47, 49, 82f., 91, 115
Triffin, Robert 223
unemployment 168f., 188, 207, 247
Universal-Bankalität 20
Vienna Stadtbanko 13, 18–23, 38f.
Vienna Stock Exchange 22, 91, 93, 138, 163, 205, 235
Vissering, Simon 154
Währungsschutzgesetz (1947) 201
Wala, Adolf 240
Wallis, Josef 29
Warburg, Max 176
weekly financial statements 59, 65, 67, 146, 155, 167,
198, 213, 249
Wiener Commerzial- und Wechselbank 48
Wiener Giro- und Cassenverein 164
Wiener Münzkonvention (1857) 74f., 125
Wirtschaftskommission 200
World War I, preparations for 143f.
Zimmermann, Alfred 158
Zinzendorf, Karl 22, 28