# PART I The Theoretical Foundations



### **I** History of Central Banking

In a modern economy, markets are incomplete, information is both scarce and requires resources to discover and unlock, and transactions are costly. For these reasons, assets, liabilities and balance sheets matter and create a pivotal role for the financial sector that can help us to manage a portfolio of assets and even allocate resources to the future.

Banks and other financial intermediaries offer a range of services: they lower the information cost associated with investment and saving, and they provide insurance. But their most important function is the process we call intermediation, whereby banks match the needs of investors (retail deposits and wholesale lending) with borrowers who wish to finance consumption, investment or other business activities. From our current vantage point, a central bank appears to be a necessary component of a financial sector, and not just a component, but pre-eminent among the banks and assigned the responsibility to regulate the conduct of other banks and financial institutions as well as given a mandate to implement policy with far-reaching consequences. This was not always so.

A central bank with its modern roles and responsibilities emerged as a complete package only during the first decades of the twentieth century. These key functions are: (i) to be a banker to the government, (ii) to have a monopoly over the issuance of notes and coins, and to (iii) be regulator of and (iv) a lender of last resort to the financial sector (Capie et al., 1994). The forerunners of banks with one or more of these functions reach back hundreds of years, with the Sverige Riksbank of Sweden, founded in 1668, recognised as the oldest. The Bank of England (BoE) followed in 1694; then there was a long gap before the Banque de France was established in 1800. By

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the beginning of the twentieth century there were eighteen central banks internationally, a number that grew to fifty-nine by the middle of that century and has reached 179 at the time of writing (2022).<sup>1</sup>

The purpose of this chapter is to trace the evolution of central banking prior to the emergence of modern central banking in the twentieth century as well as the developments of that century until the disruption brought by the global financial crisis (GFC) of 2008/2009, followed by the crisis of the EUROZONE, the COVID-19 pandemic and the Russian invasion of Ukraine, starting February 2022, in slightly more than the subsequent decade. It is a dramatic story: the functions that define a modern central bank are inherently in tension, as will be evident from the post-war history of these institutions and their policy frameworks. The drama came to a head by the late 1970s, and the former Chair of the Federal Reserve Board (Fed) in the United States described it as follows at the time:

One of the time-honored functions of a central bank is to protect the integrity of is nation's currency, both domestically and internationally. In monetary policy central bankers have a potent means for fostering stability of the general price level. By training, if not also by temperament, they are inclined to lay great stress on price stability, and their abhorrence of inflation is continually reinforced by contacts with one another and with like-minded members of the private financial community. And yet, despite their antipathy to inflation and the powerful weapons they could wield against it, central bankers have failed so utterly in this mission in recent years. In this paradox lies the anguish of central banking. (Burns, 1979, p. 7)

From that crisis in the 1970s emerged a widely shared modern framework for monetary policy as well as an institutional framework shared by many central banks. This consensus has been challenged

<sup>&</sup>lt;sup>1</sup> The dates and numbers of central banks in the past were taken from Tables 1.1 and 1.2 in Capie et al. (1994) and the latest count of central banks from the website of the Bank for International Settlements (www.bis.org).

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fundamentally in the aftermath of the GFC. This book concerns one important dimension of that consensus, the independence of central banks, which has lately been under severe pressure.

#### I.I A BANK FOR THE GOVERNMENT

Towards the end of the thirteenth century, Marco Polo learnt of the paper money issued for Kublai Khan at the mint of Kanbala. The colourful account is worth quoting at some length:

In this city of Kanbala is the mint of the Great Khan, who may truly be said to possess the secret of the alchemists, as he has the art of producing money by the following process.

...[T]he coinage of this paper money is authenticated with as much form and ceremony as if it were actually pure gold or silver; for to each note a number of officers, specially appointed, not only subscribe their names, but affix their seals also ... in this way it receives full authenticity as current money, and the act of counterfeiting it is punished as a capital offence. When thus coined in large quantities this paper currency is circulated in every part of the Great Khan's dominions; nor dares any person, at the peril of his life, refuse to accept it in payment.

All his Majesty's armies are paid with this currency, which is to them the same value as if it were gold or silver. Upon these grounds, it may be certainly affirmed that the Great Khan has a more extensive command of treasure than any other sovereign in the universe. (Polo, 1930, p. 159)

The Venetian's metaphor was more penetrating than he could have intended in an era when alchemy retained an air of respectability. Ultimately, however, the treasure of the Khan's mint, like the alchemist's prize, proved ephemeral. Because the Mongol Empire's revenue was indeed vast, the abuse of seigniorage was not, initially, extreme and the subsequent inflation contained; but over time, the balance of revenue and expenses turned ever less favourable and inflation rose. As the value of money declined in the succeeding states, trust eroded

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and paper money was eventually abandoned to restore stability in exchange (Tullock and McKenzie, 1985; Kasper and Streit, 1998).

As for the Great Khan, it was government's continuous desire not just for finance, but for the management of government debt on favourable terms that motivated the establishment of some of the earliest central banks. The Nine Years War (1688–1697), and especially the need to rebuild the English fleet after the disastrous naval battle of Beachy Head (1690), prompted the government of William III (William of Orange) to establish the BoE as a limited liability company with the exclusive right to act as the government's banker, manage government debt and issue bank notes. Similar considerations motivated the establishment of the Banque de France, the Iberian central banks and the first two Banks of the United States in the nineteenth century (Capie et al., 1994, p. 7).

Governments' interest in cheap finance created an inherent tension with a bank that was at the same time a major investor in government bonds, the value of which would be eroded if the value of the currency was undermined. This tension, as well as the associated threat to the independence of the central bank, will take centre stage in our discussion of the monopoly central banks gained over the issuance of currency. Meanwhile Adam Smith had little doubt that 'in every country in the world ... the avarice and injustice of princes and sovereign states, abusing the confidence of their subjects, have by degrees diminished the real quantity of metal, which had been originally contained in their coins' (Smith, 1981 [1776], p. 43). The diminution in the real quantity of metal, as Smith described it, is the modern phenomenon of inflation.

In a number of post-Westphalian states, the motivation for the foundation of a central bank included explicitly the desire to develop the commercial banking sector. These included the central banks of the Netherlands, Denmark, Sweden, Norway and Austria–Hungary (Capie et al., 1994, p. 4). In many cases these were initially the only commercial bank in the respective country and did not need to be given *de jure* monopoly status on the issuance of currency.

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Over time, the corporate financial sector developed in these countries and business rivalry emerged between the private sector banks and the central banks. At this point, the central bank took its place among the rest of the banking sector, albeit with notable privileges as banker to the government. These central banks did not yet enjoy a monopoly on the issuance of currency, nor did they function as lender of last resort, let alone determine interest rate policy, features now regarded as the necessary functions of a modern central bank. The competitive tension between a privileged central bank and the developing commercial banking sector was resolved in most countries only during the early twentieth century with the withdrawal by central banks from commercial banking, while the 'commercial banks voluntarily accepted the central bank's leadership – even by such informal mechanism as the Governor's eyebrows', in the words of Capie et al. (1994, p. 3).

## I.2 A MONOPOLY OVER THE ISSUANCE OF NOTES AND COINS

It was in the course of the nineteenth century that central banks gained the monopoly over the issuance of local currency now associated with these institutions. During that century's early decades, the convertibility of central bank currency into gold and/or silver made it redundant to also require legal status for the central bank's currency. But that legal status was nevertheless valuable, and over the course of the second half of the century provided a pre-eminence to currency issued by the central bank. By the beginning of the twentieth century, it was expected in countries with a central bank that the latter would enjoy a monopoly to issue the means of payment.

#### I.3 A LENDER OF LAST RESORT

On the occasion of Milton Friedman's ninetieth birthday, Ben Bernanke, then Chair of the Fed, reviewed the evidence presented by Friedman and Schwartz (1963) in *A Monetary History of the United States* and concluded that they were right to assign much blame for

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the Great Depression on the failure of the Fed to support the banking sector. As Chair of the Fed, Bernanke said: 'We're very sorry. But thanks to you, we won't do it again.' The Fed would not neglect its lender of last resort duty again and in 2008, with Bernanke at the helm, the Fed had to make good on its promise. It did so, expanding the lender of last resort function of the modern central bank mightily not only to support illiquid banks, but also to prevent the entire financial system from collapsing in an extraordinary moment of crisis. In the process, they deployed concepts such as forward guidance and quantitative easing (QE) to justify a vast expansion of the central bank's balance sheet.

The idea that the central bank should use its balance sheet to provide temporary support to illiquid, though solvent, banks was not clearly understood until Bagehot's *Lombard Street* in 1873 (Bagehot, 1873). The logic behind the lender of last resort is that, under fractional reserve banking, a solvent bank can be forced into closure by even temporary liquidity pressure, the extreme form of which is a run on the bank. More disconcertingly still, such a panic could spill over to other banks, none of whom will be able to meet the liquidity requirements of a full-scale run on the banks. A central bank that steps in to provide temporary liquidity for a bank in such an embarrassing position will prevent the bank's collapse and restore public confidence in the banking system as a whole. If it is known that the central bank stands ready to perform this function credibly, then the public's confidence in the entire banking sector is strengthened and the risk of bank runs is reduced, if not avoided completely.

By 1913, the four main functions of a modern central bank could be recognised in the major central banks of the era, although the United States was to some extent an exception. Capie and his co-authors summarise this pre-war consensus as follows: the central banks enjoyed considerable independence from government and had, as its main objective, the maintenance of the gold standard (Capie et al., 1994, p. 15). To this end, the main policy instrument was interest rate control, the effectiveness of which was ensured

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by using discounting bills and open market operations. The central bank was the government's bank and no longer operated in competition with commercial banks. At this time, central banks had not yet been given a regulatory or supervisory role in the financial sector, but often exercised leadership and co-ordination to rescue financial institutions under the evolving lender of last resort principle.

#### 1.4 THE DEVELOPMENT OF MACROECONOMIC POLICY AND THE EMERGENCE OF THE MODERN CONSENSUS

The Great War ended not just the European empires, but also fiscal prudence and the sound monetary management associated with the gold standard. Continental governments, especially the former central powers and Russia, had nowhere to turn but the printing press in an ultimately futile attempt to match their expenditure with a dramatically diminished tax base. As the allies were increasing the pressures on the German fiscus at Versailles, Keynes left the peace negotiations to write *The Economic Consequences of the Peace* (Keynes, 1924), wherein he predicted not just the ensuing hyperinflation, but also the disintegration of industrial society that follows the destruction of its money.<sup>2</sup> These predictions proved distressingly accurate, and as inflation accelerated on the continent, Keynes rose to the front rank of economists.

The 1920s brought a brief respite, but the mis-priced return to the gold standard was ill-fated in Britain. Costly deflation ensued during the Great Depression; indeed, some – most famously Friedman and Schwartz (1963) – argued that the Great Depression was the result of monetary mismanagement, which allowed a recession to spiral into a depression.

Normal economic relations were suspended during the Second World War as price controls were combined with a dramatic expansion of the productive state. Towards the end of the war, however, a return to monetary order internationally

<sup>&</sup>lt;sup>2</sup> 'Lenin was certainly right', Keynes (1924, p. 220) argued: 'there is no subtler, no surer means of overturning the existing basis of society than to debauch the currency'.

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was fundamental to the negotiations at Bretton Woods, New Hampshire. Though the ensuing international monetary system was anchored to gold via the dollar, the system failed to restrain either the Fed, or other central banks, in the expansionary policies that followed the adoption of full employment and active stabilisation as goals for macroeconomic policy (Bordo and Schwartz, 1999). Monetary stability with flat money required different institutions, and these were slow to emerge.

The first post-war effort to create such institutions was the remarkable attempt that culminated at Bretton Woods at the end of the Second World War with an agreement on fixed (but adjustable) exchange rates among the signatories of the agreement. In this system the US dollar was anchored to gold and the other currencies pegged to the US dollar. The partner countries had to secure the bilateral exchange rates, which created the problem of the nth currency, describing the incentive for the United States to determine the inflation rate for the whole Bretton Woods System (BWS). During the 1960s and part of the 1970s, the US government had to finance the Vietnam War, and urged the Fed to provide the loans for these expenditures. These easy monetary conditions resulted in pressure on the US dollar to depreciate and capital to flow to partner countries. These foreign central banks then had to buy dollars to support the system, which meant they expanded their balance sheets and imported inflation.<sup>3</sup>

The system collapsed when the US government closed the gold window in August 1971, which unanchored the entire system, ushering in the era of floating exchange rates. Therefore, the full BWS lasted only from January 1959 (when the European currencies became fully convertible) to August 1971; in practice, the exchange rate used for transactions was much less stable than appears from the official rates (Reinhart and Rogoff, 2002).

<sup>&</sup>lt;sup>3</sup> Former German Chancellor Helmut Schmidt, an economist by training and then economics minister, was cited in the press as announcing that 'every dollar will be shot at the border in the future'.

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There are many differences between the institutional arrangements of the BWS and modern monetary policy regimes. A number of differences are listed by Rose (2007), including that the BWS was a deliberately designed system while modern floating exchange rates are not, and that gold had a central role in the BWS yet has none in the modern system. In his list of contrasts, the most important for this book is that central banks were politically dependent under BWS, in contrast with their largely independent modern successors. A major obstacle to central bank independence (CBI) was that the exchange rates in the BWS were a political decision: the central banks had to maintain the respective exchange rate of the national currency to the dollar. Therefore, they were not in full control of the monetary base, although they still tried to sterilise dollar inflows. In this respect, during the BWS, monetary policy was decided in cabinets to a certain degree.

The 1970s, following the collapse of Bretton Woods at the start of that decade, and the disturbances of the oil shocks, underlined the inability of the then existing monetary policy regimes to maintain monetary stability. Indeed, Figure 1.1 shows just how poorly a selection of prominent central banks fared in protecting the purchasing power of their respective currencies. The figure shows the extent to which the purchasing power (in 1960 terms) of 100 currency units in 1960 had been eroded by the end of the year 2020, for a selection of developed and developing countries.

The graph in Figure 1.1 should be interpreted as follows: each bar shows the percentage of 100 units of local 1960 purchasing power that remained after sixty years. It is the process of inflation that causes the bar to decline over time; absent inflation, the bars would have remained at 100 over time. For example, the cumulative impact of inflation in the United States since 1960 eroded the 100 units of local purchasing power in US dollar terms to 10.2 by 2020. Germany fared better, but still lost a cumulative 80 per cent of the purchasing power of the local currency over six decades, while the other countries on the graph did worse – and the entire purchasing power of the Turkish lira was, to some decimal places, wiped out over these decades.