1 *Introduction and Overview*

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1.1 Introduction

This volume tells the story of the changing fortunes of central banks from powerful, narrowly targeted, monetary institutions to expanded institutions with multiple tasks and uncertain outcomes. During this journey, the central banks gained hard-fought independence in the 1990s, which they are about to lose, at least partly, under a broader monetary and financial stability mandate. When governments must provide a fiscal backstop to the financial system, they also want to have a say. The script starts with twelve key contributions from the life of a central banker, Charles Goodhart.

The first contributions concern, fittingly, monetary history. Examining the 1907 collapse of the US economy, Goodhart (1969) established in his Harvard PhD thesis, *The New York Money Market and the Finance of Trade, 1900–1913*, that part of the explanation was found in fluctuations in the banking system, which operated at the time without a central bank. The interaction between money and banking has been at the heart of central banking until today. Goodhart (1972) repeated the historical 'banking' exercise for the UK in *The Business of Banking, 1892–1914*. Another key paper on monetary history by Goodhart (2018) is 'The Bank of England, 1694–2017', which will be published shortly by the world's oldest central bank, the Sveriges Riksbank. This history examines *inter alia* the relationship between the government and the Bank of England. Goodhart identifies a general pattern that the more severe the crisis is, and the less successful the central bank is in defusing that, the more likely will it be that the government will (re)take control. Independence is not an absolute concept.

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The second set of contributions is in the area of monetary policy with Goodhart's move to the Bank of England. This period – covering the late 1960s until the early 1980s – reflects the rise and subsequent collapse of monetary aggregates. At the time, the monetarist debate in the USA (Friedman and Schwartz, 1963) was crossing the Atlantic. In a key paper, 'The Importance of Money', Goodhart and Crockett (1970) investigated whether money was a leading indicator for moves in output and prices. While initial results suggested quite a stable relationship, Goodhart (1984) discovered 'The Problems of Monetary Management: The UK Experience'. This led to the famous Goodhart's Law that 'whenever a government seeks to rely on previously observed statistical regularity for control purposes that regularity will collapse' (Goodhart, 1984, p. 96). This Law also appears to be applicable to financial regulation, as discussed below. Finally, Goodhart's (1989a) *Economic Journal* paper, 'The Conduct of Monetary Policy', makes the point that state-of-the-art macroeconomic models have a much greater tendency to revert to a (unique) equilibrium than the economy in practice. The many imperfections behind this behaviour justify more intervention and more discretion than contemporaneous theory would suggest.

A third set of papers is on the determination of the money supply. In Chapter VI of his textbook, *Money, Information and Uncertainty*, Goodhart (1989b) argues that the multiplier approach – to go from base money to broad monetary aggregates – obscures the behavioural process whereby people and institutions choose to apportion their wealth and income (see also Goodhart, 2009). More recently, Goodhart (2017) argues that is has become impossible to continue with the fiction that the central bank sets the money stock by varying the monetary base within a system in which there was a predictably stable money multiplier. As banking is a services industry, it is more relevant to find the optimal balance between the control of monetary expansion and flexibility in allowing client access to money, via borrowing from banks. This conflict between 'control' and 'flexibility' mirrors the long-running debate between the 'Currency' and 'Banking' Schools, whereby the former puts greater weight on control and the latter on flexibility. In the aftermath of a financial crisis, there is a tendency for control, even at some expense in efficiency, growth and flexibility. In contrast, the greater the prior experience of stability, and the greater the ingenuity of the bankers, the more the banking system is allowed to generate flexibility and (apparent) efficiency.

A fourth set of contributions covers the heyday of central banks, as powerful institutions with narrowly defined monetary mandates. Mainstream academics stressed time inconsistency as the principal reason for central bank dependence. Politicians will reduce interest rates just ahead of elections to stimulate employment. This argument assumes short (or no) lags in monetary policy. But Goodhart and Huang (1998) argued that there are long lags in monetary policy. Politicians are then liable to vary interest rates 'too little, too late', but not in a desire to fool people into working harder. Given the time lags, the aim of monetary policy must be to control the future forecast of inflation, i.e. inflation targeting (the next topic below). This academically inspired move to central bank independence can be remembered as a period with high spirits and expectations. Charles Goodhart was a member of the Roll Committee (1993), a committee of the great and the good from the City that paved the way for the independence of the Bank of England, and was also among the first group of external members of the Bank's Monetary Policy Committee. On the academic side, Goodhart (1994) wrote a tongue-in-cheek paper, 'Game Theory for Central Bankers: A Report to the Governor of the Bank of England', making fun of the time-inconsistency literature. On a more serious note, Capie, Goodhart and Schnadt (1994) did a major review, 'The Development of Central Banking', covering thirty-two central banks, including their rise to independence.

As the newly independent central banks started a quest for a new compass for monetary policy in the late 1980s/early 1990s, Goodhart provided supporting evidence to the parliament in Wellington for the Reserve Bank of New Zealand as the first mover towards inflation targeting in 1989. In a fifth set of papers, which include 'Strategy and Tactics of Monetary Policy: Examples from Europe and the Antipodes' (Goodhart and Viñals, 1994) and 'The Political Economy of Inflation Targets: New Zealand and the UK' (Goodhart, 2010), Goodhart made the case for inflation targeting, whereby the government sets the objective and provides the central bank autonomy to vary interest rates so as to reach the target. Next, Goodhart, Osorio and Tsomocos (2010) discuss the ongoing debate whether monetary policy should target inflation (i.e. consumer prices) or asset prices. Their results suggest that the interest rate is preferable to the money supply instrument because in times of financial distress the central bank automatically satisfies the increased demand for money (note

the earlier argument of the Banking School about flexibility). While monetary policy aimed at stabilising consumer inflation, but not asset price inflation, can produce financial instability, they show that central banks' financial stability objective should be primarily achieved by regulatory measures, a topic to which we return below.

Moving on to the monetary architecture on the international scene, the sixth set of contributions covers the currency board of Hong Kong, which Charles Goodhart helped to establish in 1983. In his 'Hong Kong Financial Crisis (1983)' paper, Goodhart (1997) exposes the usual pattern of the political origins (faltering negotiations between Chairman Deng Xiaoping and Prime Minister Margaret Thatcher on the future of Hong Kong) of the subsequent monetary crisis. As the Hong Kong dollar had no anchor, the exchange rate fell and in turn so did property prices. The answer was to establish such an anchor through the Hong Kong currency board, which is one of the longest, and still existing, arrangements of its kind. In a fascinating study, Goodhart and Dai (2003) describe how the Hong Kong Monetary Authority (HKMA) coped with the speculative attack in 1998. Speculators had developed an ingenious 'double-play', simultaneously selling both the foreign exchange market and the Hang Seng equity market short; whether the authorities used an interest rate defence, or abandoned the 'link', the speculators would gain either way. Therefore, the authorities decided on a bold, unexpected and unconventional response. HKMA undertook a massive counter-intervention, again both in the equity and in the foreign exchange markets, amounting to buying up around 5 per cent of the total capitalisation of the Hang Seng equity market.

Foreign exchange markets and high-frequency data analysis, the seventh area of contributions, are important for the international financial system. In his inaugural lecture at the London School of Economics (LSE), 'The Foreign Exchange Market: A Random Walk with a Dragging Anchor', Goodhart (1988a) investigates what determines exchange rate movements. He found it hard to find evidence of either short-term overshooting or longer-term reversion to equilibrium, as predicted by theory. The interplay between those basing their views on fundamentals and those who use a random walk approach influences the market outcome. In his research, Goodhart sought to watch actual behaviour of exchange rates and to talk to practitioners, culminating in a raft of studies based on high-frequency

exchange rate data. This way, he – together with a group of PhD students at the LSE – became one of the pioneers of high-frequency data analysis. For example, in *The Foreign Exchange Market*, Goodhart and Payne (2000) explain the regular patterns in intra-day foreign exchange rate activity and the effects of macroeconomic news of rates and analyse the profitability of technical trading rules in these markets. Goodhart and O'Hara (1997) review the huge spectrum of applications and the new insights that can be gained from high-frequency data analysis in financial markets in general.

The eighth set of contributions covers monetary union. While academics tend to make the economic argument for the Economic and Monetary Union (EMU) applying the theory on optimal currency areas, Goodhart (1995) recognised from the start that it was a political project, with a paper aptly titled 'The Political Economy of Monetary Union'. In a stimulating paper titled 'The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas', Goodhart (1998) draws on monetary history to examine the concept of money. The Metallists assert that the value of money lies in its ready adoption by the market as an efficient way of carrying out transactions in an 'optimal currency area'. However, the Cartalists consider instead that the value of money comes from an act of government that coerces people to use its money, in particular to pay taxes, by declaring it the sole legal tender. The Cartalists stress that a state is needed behind the currency. It is no surprise that Goodhart sides with them.

Moving to broad central banking, the ninth area covers the functions of monetary policy and financial stability and their interaction. In his epic volume *The Evolution of Central Banks*, Goodhart (1988b) examines the rationale for having central banks. In response to the Free Banking School, Goodhart argues that a *not for profit* central bank plays a necessary, stabilising role in the banking system. He thus stresses its financial stability role, including being the lender of last resort to the banking system, in the early days of central banks. In Goodhart (1987), he adds that banks are special (compared to other financial intermediaries) in requiring particular regulation, supervision and being a lender of last resort, because they combine non-marketed loans, whose true value is uncertain, with fixed-value deposits. The question of the interaction between money and banking came back at the planning for EMU in the 1990s: Should the

European Central Bank (ECB) get a narrow monetary mandate or should it be a broad central bank combining the monetary and financial stability mandates? In a paper titled 'Should the Functions of Monetary Policy and Banking Supervision Be Separated?', Goodhart and Schoenmaker (1995) seek to address that question. While there could be conflicts of interest between the two mandates, they argue that any central bank, narrow or broad, has to take into account the health of the banking system when implementing monetary policy, as banks are at the heart of the monetary transmission mechanism. With hindsight it is interesting to note that the ECB started on the narrow (Bundesbank) model and after the global financial crisis (2007–8) and the subsequent euro sovereign debt crisis (2010) has ended up on the broad (Bank of England) model combining monetary policy and banking supervision.

While central banks as well as separate supervisory agencies started to regulate and supervise banks and other financial institutions, it was not clear exactly which market failures and externalities supervisors were addressing. The tenth set of contributions starts with an influential book, *Financial Regulation: Why, How and Where Now?*, in which Goodhart, Hartmann, Llewellyn, Rojas-Suarez and Weisbrod (1998) examine the rationale. They highlight three main reasons for government intervention in the financial sector: (1) asymmetric information between customers and financial firms justifying prudential and conduct of business supervision of individual financial firms; (2) externalities in the financial system justifying the financial stability or macro-prudential role of central banks; and (3) market power of financial institutions and/or infrastructures justifying competition policy. It appears that supervisors are mainly concerned with the first, depositor protection, and wider investor/policyholder protection, partly because their political masters are mostly concerned with the protection of consumers, who are also voters. That means that externalities, or endogenous feedback loops in the financial system, get less attention. Ahead of the global financial crisis, Danielsson, Embrechts, Goodhart, Muennich, Keating, Renault and Shin (2001) warned in 'An Academic Response to Basel II' that the newly designed Basel II rules to safeguard individual banks would make the overall banking system more procyclical and fragile with self-reinforcing dynamics. They stressed the endogeneity of risk in the financial system, while the Basel II regulations assumed that risk is

exogenous. Looking at the early years, in *The Basel Committee on Banking Supervision* Goodhart (2011a) argues that the Basel Committee suffered from the fallacy of composition, which concerns the idea that to safeguard the system it suffices to safeguard the components. But in trying to make themselves safer, financial firms can (be made to) behave in a way that collectively undermines the system. The Basel Committee thus failed to strengthen the stability of the financial system as a whole.

The eleventh set of contributions contains courageous endeavours to model financial stability. The great success of monetary policy in the 1990s and early 2000s was supported by models designed to forecast inflation in the medium term. If only such models were available for financial stability, central banks could also improve their track record in this domain. Back at the financial stability wing of the Bank of England, Goodhart, Sunirand and Tsomocos (2004, 2006) made a theoretical step in this direction by developing 'A Model to Analyse Financial Fragility'. This clarifies a number of issues, from problems relating to individual bank behaviour and risk-taking, to possible contagious interrelationships between banks, and the appropriate design of prudential requirements and incentives to limit 'excessive' risk-taking. Importantly, the authors use heterogeneous commercial banks, allowing them to study the interaction between banks. By doing so, they deviate from the representative agent approach, which is dominant in academic macroeconomics.

The twelfth and final contribution covers the new challenges for central banks after the global financial crisis. Taking a long-term view, Goodhart (2011b) identifies four periods in 'The Changing Role of Central Banks'. The first (Victorian) and third (1980–2007) epochs of central banking were characterised by highly successful monetary regimes (gold standard and inflation targeting, respectively), reliance on market mechanisms and independent central banks. Post World War I, the first epoch came to a crashing halt in the Great Depression (the second epoch), and deflation then led to a period of government domination, direct controls and subservient central banks. Goodhart (2011b) argues that there is a good chance we will have a repeat of the second epoch, with more intrusive regulation and greater government involvement (e.g. in bank resolution and with a bank tax). The old Scottish saying that 'he who pays the piper calls the tune' is still applicable. Goodhart predicts that the idea of

the central bank as an independent institution will be put aside in these areas, while the operational independence in setting the official short-term rate may stay.

1.2 Overview of the Book

The above contributions provide an excellent introduction to the chapters in this volume. They cover the same topics, as most authors have been colleagues and/or co-authors of Charles Goodhart.

Part I contains contributions relating to monetary economics and policy. Chapter 2 in this volume is by the former Governor of the Bank of England, Mervyn King, with the title 'Money: How Could Economists Do without It?' King argues that monetary economics has given up the idea of money, by focusing on the real interest rate in a simple model of a single commodity and a single inter-temporal price (i.e. the real interest rate). This simple model cannot tackle questions about the consequences of the massive expansion of central bank balance sheets and base money (i.e. quantitative easing), and of the impact of negative interest rates on private sector behaviour. King highlights that a more sophisticated understanding of the monetary and financial sectors of our economies is needed.

Chapter 3, by Forrest Capie and Geoffrey Wood, both of Cass Business School, is titled 'Monetary Control in the UK: The Impossible Dream?' They discuss the difficulties of monetary control under different exchange rate regimes following World War II. After attempts to control the money supply domestically (e.g. under the 'Competition and Credit Control' approach) had foundered, resort was made to an external constraint. When the sterling–Deutschmark link subsequently collapsed, the UK adopted an inflation-targeting regime, with no mention of money or monetary control. The authors, like Mervyn King, discern signs of a return of money in monetary policy discussions.

In Chapter 4, Paul Tucker, former Deputy Governor of the Bank of England, discusses central bank independence in his chapter titled 'Pristine and Parsimonious Policy: Can Central Banks Ever Get Back to It and Why They Should Try'. Tucker begins by noting that central banks are more powerful now than they have been for almost a century, which has contributed to discomfort and criticism. He argues that central bank mandates need to comply with general criteria for the legitimacy of unelected power. He finally develops general

principles for constraining central bank balance sheet management, with the aim of achieving an appropriate demarcation between monetary policy and fiscal territory.

Chapter 5, by Donald Kohn, Brookings Institution, carries the title 'Central Bank Talk about Future Monetary Policy: Lessons from the Crisis and Beyond'. Forward guidance about future policy actions (or pledge of lack of action) has come into much wider and more intensive use since policy interest rates approached zero in the fall of 2008. But time-based guidance is not compatible with the considerable uncertainties that surround our knowledge of how the economy works. Kohn argues such guidance should be exited as policy rates lift off.

Chapter 6, by Hyun Song Shin, Economic Adviser and Head of Research at the Bank for International Settlements (BIS), is titled 'Bank Capital and Monetary Policy Transmission'. Shin notes that standard macroeconomic models make little explicit mention of banks. But how banks manage their balance sheets has implications for monetary policy and financial stability. Shin provides two examples. First, while research supports the notion that soundly capitalised banks enjoy lower funding costs and lend more, banks still pay substantial dividends instead of improving their capital base through retained earnings. Second, the usual relationship that lower interest rates engender more lending may break down when market rates turn negative. Negative interest rates may weaken bank profitability, given that deposit rates rarely follow policy rates below zero. Shin concludes that a better understanding of banks' funding methods is important to assess the macroeconomic outcomes of monetary policy.

The monetary economics and policy part concludes with Chapter 7, 'When are Central Banks More Likely to Target Asset Prices?', in which Haizhou Huang, Managing Director at China International Capital Corporation, examines central banks' monetary policy operations. Focusing on the working of the transmission channels and their interaction with the balance sheets of banks, firms and households, Huang finds that central banks are more likely to implement a monetary policy that targets asset prices during times of crisis. He also obtains empirically that developing and banking-based economies intend to target asset prices more directly, even during non-crisis times.

Part II contains contributions relating to financial stability and regulatory policy. In Chapter 8, 'The Macroprudential Toolkit', Richard Berner, former Director of the Office of Financial Research at the US

Treasury, stresses the need for a policy framework for financial stability. Key ingredients are: an ongoing assessment of potential threats; high-quality data to inform that assessment; a comprehensive policy toolkit; criteria to assess the effectiveness of the tools; and clear governance, and roles and responsibilities to assure implementation. Although there are significant improvements in financial system resilience and the tools to promote it, Berner makes suggestions to enhance the macroprudential toolkit and the institutional framework to implement it.

Chapter 9, by José Viñals, Tommaso Mancini-Griffoli and Erlend Nier at the International Monetary Fund (IMF), is titled 'Three Cooks or Three Wise Men? The Interplay between Monetary, Macroprudential and Microprudential Policies in Supporting Financial Stability'. The authors note that monetary, macroprudential and microprudential policies all affect financial stability. Moreover, the policies are not independent of one another. They find that a clear allocation of objectives and instruments is best able to achieve a safer financial system, and that appropriate institutional arrangements are needed to harness complementarities and reduce conflicts. The three policies can reinforce and complement each other like 'three wise men'.

Chapter 10, 'Liquidity, Default and the Interaction of Financial Stability and Monetary Policy', is authored by Dimitrios Tsomocos at the University of Oxford, together with Udara Peiris at the Higher School of Economics, Russia and Alexandros Vardoulakis at the Federal Reserve Board. The authors argue that the assessment of both liquidity and default within a framework of missing financial markets, multiple currencies, heterogeneous economic actors and multiple externalities is needed for analysing the interplay of financial and price stability. The complementarity and substitutability of regulatory and monetary policies can be examined. The optimal policy mix may be subsequently determined given the objectives of the fiscal and monetary authorities.

Chapter 11, 'Systemic Risk Quantification for Macroprudential Stress Testing', is by Miguel Segoviano and Raphael Espinoza at the IMF. While the devastating effects of systemic risk are well known, the quantification of losses due to systemic risk amplification mechanisms between banks and non-banks within the financial system, and their incorporation into macroprudential stress-testing frameworks remains challenging. The authors develop a novel framework for