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European Central Banking Law

The Role of the European Central Bank and
National Central Banks under European Law



Christos V. Gortsos

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*To Stuart Robinson,
My mentor and good friend*

PREFACE

A. The present book, completed on 31 August 2019, aims to provide a comprehensive overview of European—more specifically, European Union (EU)—central banking law, a field of EU economic law which emerged in the late 1990s and has developed rapidly ever since. Sourced in both primary and secondary EU law (viz. the EU Treaties and the legal acts adopted, on the basis thereof, by EU institutions), European central banking law pertains to the rules (that form part of this EU law) governing the functions, operation, tasks and powers of the European Central Bank (ECB) and the national central banks (NCBs) of EU Member States, mostly, in the euro area. It is outside the scope of this book to discuss NCBs from the perspective of the (relevant) national rules of the Member States where they are established.

The ultimate objective is to systematically present and analyse, on the basis of a functional approach, the role of the ECB as a monetary and banking supervisory authority in the euro area. The rationale is that, although the ECB assumed responsibility for monetary policy in 1999, since 2014—as a by-product of the (ongoing) fiscal crisis in the euro area—it has also been assigned quite significant specific tasks in relation to the latter capacity. In the meantime, in the wake of the recent (2007–2009) international financial crisis, specific tasks were conferred upon it in 2011 also in relation to the macro-prudential oversight of the EU financial system. In addition, the book highlights the ECB's significant role in relation to the resolution of credit institutions, even though it is not formally responsible for final decision-making in this area, as well as (conversely) its relatively limited (albeit still important) role in respect of last-resort lending to solvent EU

credit institutions exposed to liquidity risk (an unexpected outcome to those familiar with the traditional functions of central banks).

The related tasks and powers of the ECB are presented in the light of its interaction with NCBs, which retain significant powers, albeit to variable degrees, especially to the extent that, under national law, they are designated as national supervisory and/or resolution authorities in the banking sector. This is undertaken separately for each of the three systems [European System of Central Banks (ESCB), Eurosystem and European System of Financial Supervision (ESFS)] and the two mechanisms [Single Supervisory Mechanism (SSM) and Single Resolution Mechanism (SRM)] participated in by the ECB and the NCBs.

Even though this book contains some elements of interdisciplinarity (reviewing to a certain extent the relevant literature on monetary economics and financial regulation), it clearly refrains from an extensive analysis in terms of political economy, a feature of excellent studies in this broad field, several of which are referenced herein. This has been a conscious choice, which definitely has the disadvantage of missing interesting insights on the dynamics of European policymaking in the field. Nevertheless, it was deemed appropriate to focus on the rules governing European central banking law and to master its complex structure. As shown in this book, the amount of legal acts which constitute the sources of this branch of EU economic law is so vast that, despite the modest approach opted for, a much lengthier study would be produced if the analysis were to be fully exhaustive in its detail (even though I trust it is complete).

B. The book is structured in four parts, containing 11 chapters:

Part I, entitled “Definition and Evolution of European Central Banking Law”, contains four chapters:

Chapter 1 briefly discusses the functions of central banks in today’s economies (Sect. 1.1) and then provides a definition of the key notion of this book (European central banking law) on the basis of the functions performed by the ECB and the NCBs (Sect. 1.2);

the subsequent Chaps. 2–4 focus on the historical evolution and the gradual development of European central banking law, by presenting the establishment of the ESCB and of the Eurosystem, the establishment of the ESFS and the establishment of the (European) Banking Union, respectively.

Part II, entitled “Institutional Architecture”, is structured in two chapters:

Chapter 5 discusses the institutional aspects governing the systems and mechanisms participated in by the ECB and the NCBs, namely the ESCB/Eurosystem, the SSM, the SRM and the ESFS (Sects. 5.1–5.4, respectively); the institutional aspects of the ECB are then discussed in particular (and in relatively more detail) in Chap. 6.

Part III, entitled “Tasks and Competences of the European Central Bank (ECB)”, contains three chapters:

Chapter 7 presents the legal framework governing the single monetary policy (Sect. 7.1) and the other basic tasks of the ECB within the Eurosystem under the Treaty on the Functioning of the European Union (TFEU) (Sect. 7.2), as well as the powers of the ECB in relation to the issuance of banknotes and coins denominated in euro (Sect. 7.3); Chap. 8 focuses on the specific (supervisory) tasks of the ECB and its cooperation with national competent authorities in the context of the SSM; and Chap. 9 elaborates on the other specific tasks and competences of the ECB on financial stability and, in particular, its specific tasks on the macro-prudential oversight of the EU financial system in the context of the European Systemic Risk Board (a pillar of the ESFS, Sect. 9.1), its competences in the context of the SRM in relation to the resolution of credit institutions (Sect. 9.2) and, finally, its role on the ‘Emergency Liquidity Assistance’ mechanism in relation to last-resort lending (Sect. 9.3).

Finally, Part IV, entitled “Conclusion”, contains the concluding remarks (Chap. 10) and my own assessments and proposals (Chap. 11).

C. All primary sources are duly referenced in the main text; a list thereof at the end, albeit practical for the reader, was deemed too vast; it was thus decided not to include such a list in the Annex. On the other hand, the book contains an extensive list of the secondary sources, by chapter, all of which are (mainly) referenced in the footnotes.

D. The book has benefited from comments by a great number of colleagues over an extended period of time, as well as from remarks by the

most demanding of audiences, my students (both in Greece and abroad), all of whom I want to thank collectively, but most cordially. It has also greatly benefited from my stay as Academic Visitor at Oxford University's St Antony's College in 2018, where I was affiliated to the Political Economy of Financial Markets (PEFM) Research Center and had the opportunity to conduct part of my research. In this respect, I especially wish to thank my esteemed colleagues Othon Anastasakis and Kalypso Nikolaidis.

Special thanks are extended to Christina Livada not only for her particularly useful remarks and suggestions on the manuscript, but mainly for overall continuous and great support. I also wish to warmly thank Seraina Grüenewald, Christos Hadjiemanuil and René Repassi for their very valuable comments and remarks, Katerina Lagaria for her own very useful comments and the outstanding editing of my texts, yet again, as well as Athina Papadatou for her valuable administrative support. Any errors or omissions are my sole responsibility.

Last, but not least, special thanks are extended to my publisher, Palgrave Macmillan, for including this book in its series of "Studies in Banking and Financial Institutions", as well as to the Assistant Editor for Finance, Lucy Kidwell, for the excellent cooperation.

E. This book is dedicated to Professor Stuart Robinson, my PhD supervisor at the Graduate Institute of International Studies in the University of Geneva, back in the 1990s, and now a great friend. He was the first who introduced me to the extremely interesting field of central banking law and navigated me safely, in his own unique way, throughout my academic life.

Athens, Greece
August 2019

Christos V. Gortsos

CONTENTS

Part I	Definition and Evolution of European Central Banking Law	1
1	The Functions of Central Banks and Definition of European Central Banking Law	3
2	The Establishment of the European System of Central Banks and the Eurosystem	63
3	The Establishment of the European System of Financial Supervision	105
4	The Establishment of the (European) Banking Union	141
Part II	Institutional Architecture	183
5	The Systems and Mechanisms of the European Central Bank and National Central Banks	185
6	Institutional Aspects of the European Central Bank	245

Part III	Tasks and Competences of the European Central Bank	279
7	The Basic Tasks of the European Central Bank Within the Eurosystem and Issuance of Banknotes and Coins	281
8	The Specific Supervisory Tasks of the European Central Bank and Its Cooperation with National Competent Authorities	331
9	Other Specific Tasks and Competences of the European Central Bank Relating to Financial Stability	371
Part IV	Conclusion	405
10	Concluding Remarks	407
11	Assessments and Proposals	433
	General Secondary Sources	453
	Index	455

ABBREVIATIONS

€STR	Euro Short-Term Rate
ABoR	Administrative Board of Review
ABSPP	Asset-Backed Securities Purchase Programme
ABSs	Asset-Backed Securities
ACPR	Autorité de Contrôle Prudentiel et de Resolution
AEUV	Vertrag über die Arbeitsweise der Europäischen Union
AIF	Alternative Investment Fund
AIFMD	Alternative Investment Fund Managers Directive (2011/61/EU)
AIFMs	Alternative Investment Fund Managers
AL	Aggregated Liquidity
AML	Anti-Money Laundering
APPs	Asset Purchase Programmes
ASI	Ancillary Systems Interface
BaFin	BundesAnstalt für Finanzdienstleistungsaufsicht
BCBS	Basel Committee on Banking Supervision
BIC	Bank Identifier Code
BIS	Bank for International Settlements
BoE	Bank of England
BRRD II	Bank Recovery and Resolution Directive No II (2019/879)
BRRD	Bank Recovery and Resolution Directive (2014/59/EU)
BSC	Banking Supervision Committee
BU	Banking Union
CAI	Consolidated Account Information (Mode)
CBPP	Covered Bond Purchase Programme
CBs	Central Banks
CCPs	Central Counter Parties
CEBS	Committee of European Banking Supervisors

CEIOPS	Committee of European Insurance and Occupational Pensions Supervisors
CEMAC	Communauté Economique et Monétaire de l’Afrique Centrale
CESR	Committee of European Securities Regulators
CET1	Common Equity Tier 1
CFP	Colonies Françaises du Pacifique
CGFS	Committee on the Global Financial System
CIS	Conference of Insurance Supervisors
CIWUD	Credit Institutions Winding Up Directive (2001/24/EC)
CJEC	Court of Justice of the European Community
CJEU	Court of Justice of the European Union
CMGs	Crisis management groups
CMU	Capital Markets Union
COFRA	Cooperation Framework Agreement
CP	Commercial Paper
CPMI	Committee on Payments and Markets Infrastructures
CPSS	Committee on Payment and Settlement Systems
CRD I	Capital Requirements Directives No I (2006/48/EC and 2006/49/EC)
CRD IV	Capital Requirements Directive No IV (2013/36/EU)
CRD V	Capital Requirements Directive No V (2019/878)
CRR II	Capital Requirements Regulation No II (2019/876)
CRR	Capital Requirements Regulation (575/2013)
CSDs	Central Securities Depositories
CSPP	Corporate Sector Purchase Programme
CSSF	Commission de Surveillance du Secteur Financier
DGS	Deposit Guarantee Scheme
DGSD	Deposit Guarantee Schemes Directive (2014/49/EU)
DIF	Deposit Insurance Fund
DNB	De Nederlandsche Bank
DRI	Direct Recapitalisation Instrument
EAD	Exposure at Default
EBA	European Banking Authority
EBC	European Banking Committee
EBI	European Banking Institute
EBRD	European Bank for Reconstruction and Development
EBU	European Banking Union
EC	European Community
ECAF	Eurosystem credit assessment framework
ECB	European Central Bank
ECCB	Eastern Caribbean Central Bank
ECCU	Eastern Caribbean Currency Union

ECJ	European Court of Justice (Court of Justice of the European Union)
ECLI	European Case Law Identifier
ECOFIN	Economic and Financial Affairs Council
ECON	Economic and Monetary Affairs Committee (European Parliament)
ECOWAS	Economic Community of West African States
ECU	European Currency Unit
EDIRA	European Deposit Insurance and Resolution Authority
EDIS	European Deposit Insurance Scheme
EEA	European Economic Area
EEC	European Economic Community
EFC	Economic and Financial Committee
EFSF	European Financial Stability Facility
EFSM	European Financial Stabilisation Mechanism
EFTA	European Free Trade Association
EIB	European Investment Banking
EIOPA	European Insurance and Occupational Pensions Authority
EIOPC	European Insurance and Occupational Pensions Committee
ELA	Emergency Liquidity Assistance
EMCF	European Monetary Cooperation Fund
EMF	European Monetary Fund
EMI	European Monetary Institute
EMIR	European Market Infrastructure Regulation (648/2012)
EMS	European Monetary System
EMU	Economic and Monetary Union
EONIA	Euro OverNight Index Average
EP	European Parliament
ERL	Eurosystem Resolution Liquidity
ERM	Exchange Rate Mechanism
ESAs	European Supervisory Authorities
ESC	European Securities Committee
ESCB	European System of Central Banks
ESFS	European System of Financial Supervision
ESM	European Stability Mechanism
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
EUV	Vertrag über die Europäische Union
FCA	Financial Conduct Authority
FDIC	Federal Deposit Insurance Corporation
FESCO	Forum of the European Securities Commissions

FiCOD	Financial Conglomerates Directive (2002/87/EC)
FinTech	Financial Technology
FMA	Financial Market Authority
FMI	Financial market infrastructures
FPC	Financial Policy Committee
FROB	Fondo de Reestructuración Ordenada Bancaria (Spain)
FSAP	Financial Securities Action Plan
FSB	Financial Stability Board
GC	Governing Council
GdC	Groupe de Contact
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation (2016/679)
GFSTs	Government Financial Stabilisation Tools
GHOS	Group of Central Bank Governors and Heads of Supervision
GLRA	Group Level Resolution Authority
GRC	GrundRechteCharta (Charta der Grundrechte der Europäischen Union)
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Institution
HICP	Harmonised Index of Consumer Prices
HL SSC	High Level Securities Supervisors Committee
IADI	International Association of Deposit Insurers
ICAAP	Internal Capital Adequacy Assessment Process
ICM	Information and Control Module
IFRS	International Financial Reporting Standard
ILAAP	Internal Liquidity Adequacy Assessment Process
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commission
IPs	Institutional Protection Schemes
ISD	Investment Services Directive (93/22/EEC)
ITs	Implementing Technical Standards
JST	Joint Supervisory Team
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LSI	Less Significant Institution
LTF	Legal Theory of Finance
LTROs	Longer-Term Refinancing Operations
MFI	Monetary Financial Institutions
MIFID II	Markets in Financial Instruments Directive No II (2014/65/EU)
MMFs	Money Market Funds
MoU	Memorandum of Understanding
MREL	Minimum Requirement for (Own Funds and) Eligible Liabilities

MROs	Main Refinancing Operations
NCA	National Competent Authority
NCB	National Central Bank
NCWO	No Creditor Worse Off (Principle)
NDA	National Designated Authority
NPLs	Non-Performing Loans
NRA	National Resolution Authority
NSFR	Net Stable Funding Ratio
OCA	Optimum Currency Area
OECD	Organisation for Economic Co-operation and Development
OJ	Official Journal (of the European Union)
OLAF	Office de Lutte Anti-Fraude (European Anti-Fraud Office)
OMTs	Outright Monetary Transactions
O-SII	Other Systemically Important Institution
OTC	Over-The-Counter
PCIJ	Permanent Court of International Justice
PD	Probability of Default
PIA	Public Interest Assessment
PM	Payments Module
PRA	Prudential Regulation Authority
PSD II	Payment Systems Directive No II (2015/2366)
PSI	Private Sector Involvement
PSPP	Public Sector Purchase Programme
QE	Quantitative Easing
RTGS	Real-Time Gross Settlement
RTSs	Regulatory Technical Standards
RWAs	Risk-Weighted Assets
SBBSs	Sovereign Bond-Backed Securities
SCT Inst	SEPA Instant Credit Transfer (Scheme)
SDRs	Special Drawing Rights
SEPA	Single Euro Payments Area
SFTs	Securities Financing Transactions
SIFIs	Systemically Important Financial Institutions
SIPS	Systemically Important Payment Systems
SMEs	Small and Medium Enterprises
SMP	Securities Markets Programme
SPVs	Special Purpose Vehicles
SREP	Supervisory Review and Evaluation Process
SRF	Single Resolution Fund
SRM	Single Resolution Mechanism
SRMR II	Single Resolution Mechanism Regulation No II (2019/877)
SRMR	Single Resolution Mechanism Regulation (806/2014)

SRR	Special Resolution Regime
SSM	Single Supervisory Mechanism
SSMR	Single Supervisory Mechanism Regulation (1024/2013)
SSP	Single Shared Platform
SWD	Staff Working Document
T2S DCAs	T2S Dedicated Cash Accounts
T2S	TARGET2-Securities
TARGET	Trans-European Automated Real-Time Gross Settlement Express Transfer
TEC	Treaty Establishing the European Community
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
TIPS	TARGET Instant Payment Settlement
TIPS DCAs	TIPS Dedicated Cash Accounts
TLAC	Total Loss-Absorbing Capacity
TSCG	Treaty on Stability, Coordination and Governance
UCITS	Undertakings for Collective Investment in Transferable Securities
UEMOA	Union Economique et Monétaire Ouest-Africaine
UK	United Kingdom

LIST OF GRAPHS AND BOXES

Graph 5.1	Composition of the SSM	201
Graph 11.1	The channels for the transmission of crises between the financial system, the real sector of the economy and macroeconomic policies	436
Box 1.1	Definition of Key Micro- and Macro-prudential Regulations	45
Box 8.1	Essential Definitions with Regard to ‘Significant’ and ‘Less Significant’ Supervised Entities (SSM Framework Regulation, Article 2)	367

LIST OF TABLES

Table 1.1	A simplified central bank balance sheet	11
Table 1.2	Target and typology of central bank balance sheet policies	14
Table 1.3	Financial policy objective: ensuring the stability of the banking system—the ‘bank safety net’	17
Table 1.4	Institutional aspects with regard to the preservation of the stability of the banking system	18
Table 2.1	The system of the main provisions of the TFEU on the EMU	80
Table 2.2	Structure of the ESCB/ECB Statute	82
Table 2.3	Protocols annexed to the treaties of relevance to the EMU	85
Table 2.4	Comparative presentation of the simplified procedures for amending provisions of the ESCB/ECB Statute and the procedure for the adoption of complementary legislation by the council	88
Table 2.5	Legal acts adopted by the Council under the ‘complementary legislation’	88
Table 3.1	The Lamfalussy process	117
Table 3.2	Cooperation of national banking supervisory authorities at European level: from informal fora to ‘European (<i>quasi-</i>) Supervisory Authorities’	118
Table 4.1	The key legal sources of the Banking Union	145
Table 4.2	Addressees of and date by which the main provisions of the key legal sources pertaining to the Banking Union are applicable	146
Table 4.3	European (EU) banking law before and after the Banking Union: Elements of continuity and change	147
Table 4.4	Key Reports and Commission Communications relating to the Banking Union	149

Table 5.1	The national central banks (NCBs)—members of the ESCB	189
Table 5.2	The regulatory perimeter	198
Table 5.3	National competent authorities (NCAs)—members of the SSM	204
Table 5.4	National resolution authorities (NRAs)—members of the SRM	211
Table 5.5	Procedure for the adoption of legal acts which constitute the sources of European financial law after the entry into operation of the ESFS	234
Table 6.1	The powers of the ECB and national competent authorities (NCAs) to impose administrative penalties under the SSMR and the SSM Framework Regulation	263
Table 6.2	Weightings assigned to national central banks in the key for subscription in the ECB’s capital	267
Table 6.3	The independence of the ECB	269
Table 7.1	The five types of instruments used for the conduct of Eurosystem open market operations	290
Table 7.2	Main features of the Eurosystem’s open market operations	292
Table 7.3	Evolution of the Eurosystem’s balance sheet (2007–2017, in million euro)	293
Table 7.4	TARGET <i>versus</i> TARGET2	312
Table 7.5	Direct <i>versus</i> indirect participants in the TARGET2 system	316
Table 7.6	Banknote allocation key	325
Table 8.1	The specific tasks conferred upon the ECB (SSMR, Articles 4 and 5)	334
Table 8.2	Allocation of tasks between the ECB and the national competent authorities (NCAs)	335
Table 8.3	Supervision on a consolidated basis and participation of the ECB and NCAs in colleges of supervisors	342
Table 8.4	The criteria for classifying supervised entities as significant	350
Table 9.1	The conditions for the resolution of credit institutions under Article 18 of the SRM Regulation	377
Table 9.2	The ‘failing or likely-to-fail’ criterion under the 2015 EBA Guidelines	379
Table 10.1	The tasks conferred upon the ECB	421
Table 10.2	A comparison: ECB (as a supervisory authority), EBA and ESRB	422
Table 10.3	The allocation of tasks and competences between the ECB and the NCBs in the euro area in the context of European central banking law	432
Table 11.1	Channels of transmission from a sovereign crisis to the banking system	435
Table 11.2	The partial Europeanisation of the ‘bank safety net’ (even) with regard to significant credit institutions	439

PART I

Definition and Evolution of European
Central Banking Law



The Functions of Central Banks and Definition of European Central Banking Law

1.1 AN OVERVIEW OF CENTRAL BANKS' FUNCTIONS

1.1.1 *The Basic Concepts for the Analysis: Monetary System— Financial System—Payment and Settlement Systems*

Introductory Remarks

Central banking law is defined as the law governing the operation and competences of central banks. Central banks are public authorities, with legal personality under national law,¹ and play, in almost every jurisdiction, an extremely important role in relation to the functioning of several aspects of the economy and, in particular, to the monetary system and the financial system, including the latter's infrastructures, that is payment and settlement systems (all briefly presented just below).² In particular:

(1) In all cases (and traditionally), central banks have the legal monopoly (and *quasi de facto* monopoly as well) of issuing banknotes and controlling of the amount of coins in circulation produced by the government.

¹This is not the case for the European Central Bank (the 'ECB'), the legal personality of which is based on supranational (European Union) law; see on this in Chap. 6, Sect. 6.1.2.

²The close links between the two systems is mainly (but not exclusively) attributable to the fact that deposits, the main source of bank financing, are concurrently the core component of money in the framework of the monetary system's operation. In this sense, the term financial system is frequently used (albeit not in this study) in a way which also covers the monetary system.

They are also assigned the tasks of defining and implementing monetary policy in order to achieve specific, well-defined macroeconomic objectives (related but not identical is the provision of last-resort lending to solvent banks exposed to liquidity risk, which is linked to financial stability), as well as of conducting foreign exchange policy and holding, for that purpose, official foreign reserves (see Sect. 1.1.2). The contribution to financial stability and the smooth operation of payment and settlement systems, including their oversight, also rank among central banks' traditional functions. In (almost) all cases as well, but mainly after the recent (2007–2009) international (or global) financial crisis,³ powers have been conferred upon central banks in relation to the so-called macro-prudential financial oversight as part of their contribution to financial stability (these aspects are presented in Sects. 1.1.3 and 1.1.4, respectively).

(2) In certain jurisdictions, central banks are also responsible for the authorisation and micro-prudential supervision of banks and, in some cases, of other categories of financial firms (mainly after the recent international financial crisis as well) their resolution (on this, see Sect. 1.1.3). The same applies to (specific) powers relating to the protection of consumers of financial services and the combatting of money laundering and terrorist financing through the banking/financial system (usually, not from a crime prevention perspective, but from a prudential one⁴). Finally, most recently, several central banks worldwide are responsible for the promotion of financial inclusion and financial literacy (see briefly under Sect. 1.1.5).⁵

The Monetary System

(1) The monetary system contains the unit of account of a state (with reference to its name and any applicable subdivisions thereof), and comprises, at an institutional level, a central bank (or similar 'monetary authority', as it is named for instance in Singapore and Saudi Arabia, or 'Reserve Bank' as it

³ On this crisis, see Chap. 3, Sect. 3.1.2.

⁴ On this aspect, see Chap. 8, Sect. 8.1.1.

⁵ For a comparative overview of central banks' functions in a selected number of economically developed countries, see Central Bank Governance Group (2009), pp. 25–49 (in particular Table 2), and in more detail Central Bank Governance Group (2011). On the evolution of central banks, see also the seminal work of Goodhart (1988) and his most recent (2010). For several aspects of institutional central banking from a global point of view, see Hasan and Mester (2008) and various contributions in Conti-Brown and Lastra (2018); on the public governance of central banks, in particular, see Oritani (2010).

is called in the United States and India⁶), which enjoys the monopoly of issuing national banknotes (on the liability side of a central bank's balance sheet), controls the quantity of coins issued by the government (i.e. competent Ministry of Finance or corresponding ministry) and provides liquidity to credit institutions operating within its territory.⁷

(2) According to the 'State Theory of Money', a sovereign state is entitled to issue its own money (the money of the state) and create a (national) monetary system. This principle of 'monetary sovereignty' has been affirmed in international law. As noted, *inter alia*, by the Permanent Court of International Justice in the 1929 Serbian and Brazilian Loan Case, "it is indeed a generally accepted principle that a state is entitled to regulate its own currency."⁸ In certain cases, small sovereign states have neither their own money nor a domestic monetary system. Even in the European continent, the examples are plenty: Monaco, Andora, San Marino, Liechtenstein or the Vatican State.⁹ These states enter into bilateral monetary agreements with another state, according to the terms of which the money and the monetary system of the latter apply to the former as well. A distinct case is the formation of a monetary union among (usually, more or less equally sizeable) sovereign states, which decide to transfer their (national) monetary sovereignty to supranational entities issuing a single (or common) currency and operating a supranational, regional monetary system.¹⁰

The Financial System

(1) Unlike the monetary system, the content of which is straightforward (at least in terms of design), the financial system is more complicated, since it performs (at least in market economies) two functions through a complex nexus of markets and financial service providers in that system. In particular, the first function is channelling funds from the economy's positive savers to the negative savers (further discussed just below). The second function consists in enabling natural and legal persons to make payments without using cash, namely coins and banknotes; payment instruments and fund transfer services, through which this function is performed, are principally offered by banks and specialised payment institutions.¹¹

⁶In some states, this function is assigned to Currency Boards; see Proctor (2012), pp. 871–876.

⁷See Proctor (2012), p. 66.

⁸PCIJ Series A, Nos. 20–21, 44.

⁹See on this also in Chap. 2, Sect. 2.4.3.

¹⁰This aspect, which is core to the subject of this book, is discussed in Sect. 1.2.2.

¹¹See Stillhart (2002), pp. 105–121; on payments, see also further below when presenting payment and settlement systems.

(2) The first above-mentioned function of financial systems is performed via two channels: direct financing of negative savers by positive savers and indirect financing of negative savers by positive savers or financial intermediation.¹² The channel of ‘direct financing’ from positive to negative savers is activated through financial markets (also referred to as money and capital markets), where debt instruments and equities are issued and traded and derivatives are traded. Various categories of financial firms operate in direct financing, such as banks, to the extent that they are allowed by law to provide investment services, and ‘securities firms’ (or ‘investment firms’), which are allowed by law to provide the entire range of investment services, including the execution of orders for the purchase or sale of financial instruments in the name, and on behalf, of their clients. ‘Undertakings for collective investment in transferable securities’ (the ‘UCITS’; e.g. mutual funds and investment companies) also operate therein,¹³ their managers having (in principle) the legal monopoly of providing financial instruments’ portfolio management services on a collective basis (without being precluded from providing at least certain investment services on an individual basis as well).¹⁴

The second category of channelling funds from positive to negative savers is indirect financing or ‘financial intermediation’. According to financial theory, this channel has emerged as a result of the (relatively high) cost of transactions in financial markets, the (relatively high) credit

¹² See, by way of mere indication, Mishkin (2007a), pp. 23–32 and 35–42, respectively. Over the past decade, a new type of funds’ channelling has emerged, named ‘crowdfunding’; this consists in getting a large number of natural and/or legal persons provide (relatively) small amounts of funds in order to finance a business or a project. Crowdfunding services are classified in two groups: ‘crowdlending’ and ‘crowdinvesting; for a review of the relevant literature, see Baumann (2014) and Moritz and Block (2014).

¹³ Despite being called undertakings for collective investment in transferable securities (viz. equities and bonds), these also make placements in financial derivative instruments.

¹⁴ It is also worth noting that a type of investment vehicle, known as ‘alternative investment funds’ (the ‘AIFs’), including ‘hedge funds’, has emerged over the last decades. Its operation has only recently, after the recent (2007–2009) international financial crisis, been subject to micro-prudential regulation and supervision, as a collective investment undertaking. This is an asset pool consisting of borrowed funds from (usually high-income) private and institutional investors, placed in various financial instruments, primarily derivatives, with a view to capitalising on the imperfections of the markets and operating at high leverage. With regard to the operation of hedge funds and the policy objective to regulate and supervise them as financial firms, see Garbaravicius and Dierick (2005), Chan et al. (2006), Ferguson et al. (2007), pp. 119–130 and Athanassiou (2012).

risk that investments in debt instruments and equities entail for positive savers ('risk sharing'), and information asymmetries arising in the relationship between positive and negative savers in the context of direct financing.¹⁵ It is nonetheless true that in most financial systems indirect financing mainly through banks is more extensive than direct financing. This is true even in the United States and the United Kingdom, which are traditionally considered to have comparatively more advanced financial markets ('bank-based' vs 'market-based' systems).¹⁶

In order to address these problems, financial intermediaries¹⁷ operate in the financial system. They (mainly) include banks, companies providing credit, as well as insurance (and reinsurance) companies and pension funds.¹⁸ In the case of banking intermediation, positive savers offer their borrowed funds in the form of (bank) deposits,¹⁹ which banks use in order to finance negative savers by providing loans and other credit facilities. In their capacity as financial intermediaries, banks perform a set of transformations: 'credit risk transformation': they assume the credit risk of the economic units they finance, transferring the risk of their own solvency to positive savers, 'size transformation': they convert liabilities of usually small nominal value (e.g. deposits) to large-value receivables (e.g. industrial loans), and 'maturity transformation': they convert short-term liabilities (e.g. sight deposits) into long-term receivables (e.g. housing loans). The ability of banks to make these transformations is concurrently the main cause of their (structural) exposure to credit risk,

¹⁵ On this, see Mishkin (2007a), pp. 35–39 and 184–198. Specifically regarding the meaning of information asymmetry and the problems that it causes to transactions, see Rasmusen (1989), pp. 181–203 as to 'adverse selection', and pp. 133–179 as to 'moral hazard'.

¹⁶ For more details, see Mishkin (2007a), p. 36.

¹⁷ The term 'financial intermediaries' covers all categories of (financial) firms providing services in the financial system in the context of indirect intermediation; for a detailed presentation, see Allen and Santomero (1999), Allen (2001), Allen and Gale (2001) and Gorton and Winton (2002).

¹⁸ The most characteristic (and in most states the larger) category of banks is 'commercial banks'. However, in various economies there are also special bank categories, such as cooperative, mortgage, development and savings banks. Such special banks (often called 'special credit organisations') are usually the outcome of the legislator's regulatory intervention, notably in developing or less developed economies.

¹⁹ A deposit is not just a loan to the bank but also a consignment; the level of its interest rate is the best indicator of the aspect which prevails (obviously, all other parameters being equal, a comparatively higher interest rate reflects a bank's higher need to attract deposits).

interest rate income risk and liquidity risk, respectively, and, as a result, the main reason behind the need to manage these risks.²⁰ It is also the basis for their regulation, which is aimed at ensuring the stability of the banking system, which can be threatened due to excessive exposure to these risks.²¹

To the extent that credit intermediation is provided by non-bank unregulated entities, reference is made to the ‘shadow banking system’, defined as “credit intermediation involving entities and activities outside the regular banking system”.²² The Financial Stability Board (the ‘FSB’) defines the shadow banking system as “the system of credit intermediation that involves entities and activities outside the regular banking system”.²³ In practice, shadow banking entities and activities raise funding with deposit-like characteristics, perform maturity or liquidity transformation, allow credit risk transfer or use direct or indirect leverage. Neutralising the riskiest parts of this system became a policy priority. According to the FSB Recommendations of 2011, the regulatory measures to be examined by authorities refer to five main aspects: the indirect regulation of banks’ interaction with shadow banking entities, the regulatory reform of money market funds, the regulation of other shadow banking entities, such as hedge funds, the regulation of securitisation and the regulation of securities financing transactions, such as securities lending and repurchase agreements (repos).²⁴

²⁰In order to control their exposure to these risks, banks transfer part of their loans to special purpose vehicles (the ‘SPVs’) through ‘asset securitisation’ in the context of the ‘originate and distribute’ model. On the excessive extent to which several (typically large) banks used this practice, thus making it a major cause of the recent (2007–2009) international financial crisis, see Borio (2008), pp. 1–13.

²¹On the various banks’ business models (such as investment banking, wholesale banking, focused retail banking and diversified retail banking), see Ayadi et al. (2012), Wehinger (2012) and the various contributions in de Haan and Bruinshhofd (2014, editors).

²²On this, see indicatively (out of a vast existing literature) Gorton and Metrick (2010), Pozsar et al. (2010), Financial Stability Board (2011), Gerding (2011), Nijskens and Wagner (2011), Pozsar and Singh (2011), Adrian and Ashcraft (2012), Claessens et al. (2012), European Commission (2012), Kane (2014), Schwarcz (2015), Wymeersch (2017) and Alexander (2019), pp. 300–306.

²³Financial Stability Board (2011): “Shadow Banking: Strengthening Oversight and Regulation, Recommendations”, 27 October, Section 1, available at: https://www.financialstabilityboard.org/2011/10/r_111027a.

²⁴Ibid., Sect. 3.2.

Payment and Settlement Systems

(1) ‘Payment and settlement systems’ are a main infrastructure of the financial system and are also of primary importance to the functioning of the monetary system (in particular, with regard to the settlement of monetary policy transactions). They include several, closely interlinked, components: payment, clearing and settlement systems, as well as securities clearing and settlement systems. In terms of definitions: a payment system is the set of instruments, services and procedures and systems that ensure the transfer of funds among its participants²⁵; a clearing system is the set of procedures whereby system participants present and exchange data and/or documents relating to fund transfers to other participants at a single location, the ‘clearinghouse’, with a view to determining the beneficiaries of payments and the amount of each payment; and a settlement system is the system used to facilitate the settlement of funds transfers.²⁶ Securities clearing and settlement systems have two legs: the first is the set of procedures whereby system participants present and exchange data and/or documents relating to the transfer of securities to other participants in order to define their beneficiaries; the second leg is the set of means and procedures enabling the settlement of transactions in securities, by crediting securities to the end-beneficiaries’ accounts, as well as the safekeeping of securities.²⁷

²⁵ ‘Funds transfer’ means any transfer of funds conducted using all available payment instruments and order-based fund transfer services. Participants in payment systems are mostly banks (without excluding other categories of financial firms authorised to provide payment services); hence, payment systems are usually ‘interbank’.

²⁶ See Committee on Payment and Settlement Systems (2003a): “A glossary of terms used in payments and settlement systems”, Bank for International Settlements, March.

²⁷ See in detail Kokkola (2010), pp. 75–90 and 106–113 (for derivative financial instruments); see also Committee on Payment and Settlement Systems and IOSCO Technical Committee (2001): “Recommendations for securities settlement systems”, Bank for International Settlements, November (available at: <https://www.bis.org/publ/cpss46.htm>), and Committee on Payment and Settlement Systems and IOSCO Technical Committee (2012): “Principles for financial markets infrastructures”, Bank for International Settlements, April (available at: <https://www.bis.org/publ/cpss101a.pdf>). Even though most studies refer to securities clearing and settlement systems, clearing and settlement procedures also occur for derivatives, both in stock exchanges and in OTC markets (see Committee on Payment and Settlement Systems (2007): “New developments in clearing and settlement arrangements for OTC derivatives”, Bank for International Settlements, March, available at: <https://www.bis.org/publ/cpss77.htm>).

(2) Payment systems are classified into several categories on the basis of various criteria.²⁸ An important distinction is made between ‘systemically important payment systems’ (such as large-value payment ones), that is systems in which the occurrence of a malfunction may potentially activate or spread additional malfunctions between participants or systemic malfunctions across the entire financial system,²⁹ and ‘non-systemically important’ ones, that is systems that do not have the above-mentioned potential; another is that between ‘large-value’ and ‘small-value’ payment systems (the latter also called ‘retail payment systems’), on the basis of the value of funds transferred per transaction through them. As regards (clearing and) settlement systems, they are divided into two categories, depending on the manner in which the orders for the transfer of funds are to be settled: in ‘net settlement systems’, settlement operations are completed by offsetting and clearing all the participants’ receivables at one or more discrete, pre-defined times during the processing day (settlement cycles)³⁰; ‘gross settlement systems’ are those where settlement takes place separately for each payment, on an instruction-by-instruction basis, at one or more prescribed times during the processing day.³¹ In the specific case of ‘real-time gross settlement systems’, settlement occurs not only separately for each and every payment, but also in real time and in the order that the relevant payment orders are given.³² Such is the TARGET2 system (Trans-European Automated Real-time Gross settlement Express Transfer system) used, *inter alia*, to settle payments resulting from open market transactions in the context of implementing the single monetary policy in the euro area.³³

²⁸ In addition, to these distinctions, depending on the payment instrument or service used to transfer funds, payment systems include cheque, credit transfer, direct debit, payment card and electronic money systems; depending on the netting of instructions therein, a distinction is made between bilateral and multilateral payment systems; see details in Committee on Payment and Settlement Systems (2006): “General guidance for national payment system development”, Bank for International Settlements, January (available at: <https://www.bis.org/publ/cpss70.htm>).

²⁹ See Committee on Payment and Settlement Systems (2001): “Core Principles for Systemically Important Payment Systems”, Bank for International Settlements, January, p. 5 (available at: <https://www.bis.org/publ/cpss43.htm>) and Committee on Payment and Settlement Systems and IOSCO Technical Committee (2012), op. cit., p. 12.

³⁰ See Committee on Payment and Settlement Systems (2003a), op. cit., p. 34.

³¹ *Ibid.*, p. 25.

³² *Ibid.*, p. 41 (see also Committee on Payment and Settlement Systems (1997): “Real-time Gross Settlement Systems”, March, available at: <https://www.bis.org/publ/cpss22.htm>).

³³ This system is presented in more detail in Chap. 7, Sect. 7.2.4.