Palgrave Macmillan Studies in Banking and Financial Institutions

Series Editor
Philip Molyneux
University of Sharjah
Sharjah, United Arab Emirates

The Palgrave Macmillan Studies in Banking and Financial Institutions series is international in orientation and includes studies of banking systems in particular countries or regions as well as contemporary themes such as Islamic Banking, Financial Exclusion, Mergers and Acquisitions, Risk Management, and IT in Banking. The books focus on research and practice and include up to date and innovative studies that cover issues which impact banking systems globally.

More information about this series at
http://www.palgrave.com/gp/series/14678

Laura Chiaramonte

Bank Liquidity and the Global Financial Crisis

The Causes and Implications of Regulatory Reform

palgrave
macmillan

Laura Chiaramonte
Department of Economics and
Business Administration, Faculty of
Economics
Università Cattolica del Sacro Cuore
Milan, Italy

Palgrave Macmillan Studies in Banking and Financial Institutions
ISSN 2523-336X ISSN 2523-3378 (electronic)
ISBN 978-3-319-94399-2 ISBN 978-3-319-94400-5 (eBook)
https://doi.org/10.1007/978-3-319-94400-5

Library of Congress Control Number: 2018946155

Cover illustration: Oliver Burston/Alamy Stock Photo
Cover design by Laura de Grasse

Printed on acid-free paper

This Palgrave Macmillan imprint is published by the registered company Springer International Publishing AG part of Springer Nature
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

To the members of my family to whom I owe everything: my mother Luciana, my father Tullio, and my husband Andrea. They are the ones who taught me to trust that the dots would somehow connect in my future.

Foreword

The subprime crisis, originating in the US real estate financing sector, highlighted the significant interconnections between financial systems and markets and the underlying fragility of many important banking intermediation sectors (investment banking, specialist financing, international financial activity). It also highlighted one of the types of banking crisis less frequent in the financial history and, in some ways, less investigated and known: the liquidity crisis. Traditionally associated with rare events and investigated mainly in its final and most evident manifestation (a bank run), often involving non-primary subjects and cases of embezzlement, falsification or contextual factors deranging normal management dynamics and utterly undermining investor confidence, in this instance the liquidity crisis had very different characteristics. It rapidly became a global phenomenon, sweeping through leading financial systems, starting with the most dynamic and innovative, and had lasting consequences on the functioning of financial mechanisms and markets. The crisis hit institutions of different nature and size, including massive international banks, requiring large-scale public intervention via, among other things, substantial and prolonged liquidity injections into the markets by central banks.

From the point of view of banking management, in a framework of financial innovation and globalization, the crisis revealed the deep and complex relationship between the quality of assets and banking liquidity, as well as the intrinsic risk of banks taking on high levels of leverage and adopting innovative, but potentially unstable business models (such as the Originate To Distribute model, OTD).

From the point of view of the financial markets—in all their ramifications—the crisis sharply highlighted one of the most unpleasant consequences of globalization and computerized transactions: the massively increased sensitivity of operators of all kinds and the spread of unidirectional tendencies that are hard to counteract (a market run) and far more dangerous than 'traditional' bank runs.

In terms of banking and financial supervision, the crisis demonstrated the limited overall effectiveness of the regulatory framework, the limitations of the independence of supervisory authorities, and significant shortcomings in coordination between supervisors at the international level. These negative or limiting aspects also applied to the regulations and restrictions designed to control liquidity risks in banks. Unsurprisingly, later on, after a profound rethinking of the overall approach to banking and financial supervision, for the first time liquidity risk came to occupy a central position, shaping the most recent version of the Basel Accords (Basel III), with the introduction of two coefficients: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). In addition, principles for the proper supervision and management of liquidity risk were established along with related monitoring tools. In other words, liquidity risk and liquidity crises became the main focus, with a primary role both in banking policies and supervisory action.

Laura Chiaramonte's book explores this crucial function of banking and financial activity in a complete and deep way, in terms of both the size of markets, supervisory and control policies, and the management equilibrium of intermediaries. Specifically, it analyzes the nature and characteristics of 'bank liquidity' phenomenon in multidimensional terms, (i.e. from the point of view of central banks, markets and intermediaries), the causes, implications and consequences of liquidity crises in light of recent experience; the relationship between liquidity crises and bank insolvencies; the role of central banks in the regulation of the interbank market and to support the credit system; and the implications of liquidity risk management in banks.

The work ends with an in-depth analysis of the new Liquidity Regulatory Framework of Basel III, the potential implementation strategies by banks and the consequences of regulation in terms of costs and benefits.

Overall, the book provides a broad, closely argued and up-to-date examination of banking liquidity management that, in the post-globalization world, significantly impacted the overall stability of banking systems, the functioning of financial markets and, ultimately, the development prospects of the economy as a whole. This will be of relevant interest to academics and practitioners who want to understand what happened and the resulting changes and trends in the management and market environment.

University of Verona, Italy Roberto Bottiglia

Roberto Bottiglia is Full Professor in Banking and Finance at the University of Verona—Italy, where he teaches Bank Management. He graduated in Business Administration from the Bocconi University of Milan. Research topics include agricultural credit, financial marketing, IT in banking, the structure of financial systems and banks'strategies, and the crisis of the major banking groups in Europe and the USA.

Contents

1 Introduction 1

2 The Concept of Bank Liquidity and Its Risk 5
2.1 Definition of Bank Liquidity 5
2.2 Liquidity Risk: Definition and Multidimensionality 9
2.3 Liquidity Interconnections in Normal and Turbulent Periods 20
2.4 The Linkages Between Liquidity and Solvency 25
2.5 The Relationships Between Liquidity Risk and Other Typical Bank Risks 27
2.6 The Aggravating Factors of Liquidity Risk 28
References 31

3 The Bank Liquidity Issues During the Subprime Crisis 35
3.1 The Subprime Crisis 35
3.2 Bank Liquidity Problems During the Subprime Crisis 43
3.3 Liquidity Crises: Common Features and Some Prevention and Management Policies 50
References 57

4 The Role of Central Banks and the Interbank Market in Managing Bank Liquidity During the Global Financial Crisis 63
4.1 Central Banks, the Interbank Market and Bank Liquidity Management 63
4.2 The Liquidity Management Instruments of Leading Central Banks 66
4.3 The Monetary Policy Actions Used by Leading Central Banks in Response to the GFC 71
4.4 The Role of the Interbank Market in Financial Crises: Theories and Empirical Evidence 82
4.5 The Functioning of the Interbank Market During the Financial Crisis 90
References 95

5 Bank Liquidity Regulation Before the Global Financial Crisis 99
5.1 Liquidity Risk Management: Regulation Before the Financial Crisis 99
5.2 The Building Blocks of the Liquidity Risk Management Process 102
5.3 The Role of the Supervisors 124
References 128

6 The New International Liquidity Regulatory Framework for Banks 131
6.1 Liquidity Risk: Regulatory Issues 131
6.2 Common Principles for Sound Liquidity Management and Supervision 132
6.3 The Minimum Liquidity Standards of Basel III 135
6.4 Monitoring Tools to Assess Liquidity Risk 160
References 165

7 The Implications of Basel III Liquidity Regulatory Reform 167
7.1 Introduction 167
7.2 Possible Strategies for Banks to Meet Basel III Liquidity Ratios: Costs and Benefits 167

7.3 An Empirical Literature Review of the Impact of the Liquidity Requirements on Bank Behaviour 172
7.4 Bank Compliance with Basel III Liquidity Ratios: An Overview of Quantitative Impact Studies 178
References 187

8 Conclusion 189
Reference 191

Index 193

About the Author

Laura Chiaramonte is Associate Professor in Banking and Finance at Università Cattolica del Sacro Cuore of Milan, Italy. She gained her Bachelor's in Business Economics and Ph.D. in Business Administration from the University of Verona, Italy. Her main research includes the role of bank credit default swaps (CDSs) in the financial crisis of 2007–2009, the role of cooperative banks in promoting bank stability, the reliability of the Z-score in predicting bank failure, and the role of the Basel III capital and liquidity ratios in reducing bank distress phenomena. Her research has been published in journals, such as *The European Journal of Finance*, *The British Accounting Review*, *European Financial Management*, and *Financial Markets, Institutions and Instruments.*

Acronyms and Abbreviations

ABSs	Asset Backed Securities
AIG	American International Group
ALCO	Asset and Liability COmmittee
ALM	Asset and Liability Management
APP	Asset Purchase Program
ASF	Available Stable Funding
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CBPP	Covered Bonds Purchase Program
CC	Counterbalancing Capacity
CCP	Cash Capital Position
CDOs	Collateralized Debt Obligations
CDSs	Credit Default Swaps
CEBS	Committee of European Banking Supervisors
CFP	Contingency Funding Plan
CLGs	Cumulative Liquidity Gaps
CP	Commercial paper
CPFF	Commercial Paper Funding Facility
CPSS	Committee on Payment and Settlement Systems
DLCR	Dutch Liquidity Coverage Ratio
DNB	Dutch National Bank
DSGE	Dynamic Stochastic General Equilibrium
DVP	Delivery versus Payment
EBA	European Banking Authority
ECAI	External Credit Assessment Institution
ECB	European Central Bank

EFSM	European Financial Stability Mechanism
FED	Federal Reserve
FOMC	Federal Open Market Committee
FSA	Financial Service Authority
FSB	Financial Stability Board
FSF	Financial Stability Forum
FTP	Funds Transfer Pricing
GDP	Gross Domestic Product
GFC	Global Financial Crisis
HQLA	High Quality Liquid Assets
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IIF	International Institute of Finance
ILG	Individual Liquidity Guidance
IMF	International Monetary Fund
LB	Liquidity Buffer
LCR	Liquidity Coverage Ratio
LTCM	Long Term Capital Management
LTD	Loan To Deposit ratio
LTROs	Long-Term Refinancing Operations
LTV	Loan-to-value ratio
M&As	Merger and Acquisitions
MBSs	Mortgage Backed Securities
MLG	Marginal Liquidity Gaps
MMFs	Money Market Funds
NSFR	Net Stable Funding Ratio
OBS	Off-balance sheet
ODR	Official Discount Rate
OIS	Overnight Indexed Swap
OMTs	Outright Monetary Transactions
OTC	Over The Counter
OTD	Originate To Distribute
OTH	Originate To Hold
PSEs	Public Sector Entities
PSS	Payment and Settlement Systems
PVP	Payment versus Payment
QIS	Quantitative Impact Studies
Repos	Repurchase agreements
RFQ	Request for quote
RMBS	Residential Mortgage Backed Securities
ROA	Return on assets
ROE	Return on equity

RSF	Required Stable Funding
RTGS	Real Time Gross Settlements
SIFIs	Systemically Important Financial Institutions
SIV	Structured Investment Vehicle
SLR	Structural Liquidity Ratio
SMEs	Small- and Medium-sized Enterprises
SMP	Securities Markets Program
SPV	Special Pourpose Vehicle
SRR	Special Resolution Regime
TLTROs	Targeted Long-Term Refinancing Operations
UK	United Kingdom
US	United States
VRDNs	Variable rate demand notes

List of Figures

Fig. 3.1	The functioning of the innovative securitization process (simplified)	38
Fig. 3.2	Main effects of the US restrictive monetary policy adopted in 2006	42
Fig. 3.3	Balance sheet characteristics of the US banks most affected by liquidity problems	44
Fig. 3.4	Relationship between liquidity, solvency, and bank stability	47
Fig. 7.1	LCR and NSFR over time (in %)	181
Fig. 7.2	LCR and NSFR for Group 1 banks by region (in %)	181
Fig. 7.3	Components of LCR by sub-sample banks (in %)	183
Fig. 7.4	Components of LCR for Group 1 banks by region (in %)	184
Fig. 7.5	Components of NSFR by sub-sample banks (in %)	185
Fig. 7.6	Components of NSFR for Group 1 banks by region (in %)	186

List of Tables

Table 6.1	The timetable of the introduction of the LCR	139
Table 6.2	HQLA categories	141
Table 6.3	Total cash outflows calculation in LCR	146
Table 6.4	Total cash inflows calculation in LCR	150
Table 6.5	ASF calculation in NSFR	154
Table 6.6	RSF calculation in NSFR	156
Table 6.7	OBS categories in NSFR	160
Table 7.1	Sample of participating banks by country	179