

# Collateral Frameworks

## The Open Secret of Central Banks

KJELL G. NYBORG

*University of Zurich*

*Swiss Finance Institute*

*and Centre for Economic Policy Research*



**CAMBRIDGE**  
UNIVERSITY PRESS

# Contents

List of Figures	page viii
List of Tables	ix
List of Exhibits	xi
List of Examples	xii
Preface	xiii
Acknowledgments	xv
1 Background and Motivation	1
1.1 Money Matters in Financial Markets	3
1.2 The Market for Liquidity	6
1.3 The Financial Crisis and Unconventional Monetary Policy	7
1.4 Central Bank Balance Sheets and the Increasing Importance of Collateral	11
1.5 Collateral	14
2 Collateral Frameworks: Overview	18
2.1 Potential Impact	19
2.2 Collateral Eligibility and Usage	23
2.3 Collateral Values, Haircuts, Ratings, and Guarantees	26
2.4 Overview of Findings	29
2.5 Rest of Book	32
3 Monetary Policy Implementation in the Euro Area over Time	35
4 Evidence on the Production and Usage of Collateral	52
5 Haircuts	59
5.1 Documentation and Overview	59
5.2 Detailed Haircut Rules and Main General Observations	63

## VI CONTENTS

5.3	Haircuts over Time	79
5.4	Extraordinary Haircuts	85
5.5	Evidence on Collateral Eligibility, Ratings, and Haircuts in Primary and Secondary Repo Markets	87
6	Ratings and Guarantees	94
6.1	Rating and Guarantee Rules over Time	96
6.2	Exemptions	112
6.3	Ratings and Haircuts: Two Examples	115
6.4	Fundamental Liquidity	118
6.5	Sovereign Ratings and the Impact of DBRS	119
6.6	Evidence on Guarantees	132
6.7	Government Guarantees: Italy	136
6.8	Government Guarantees: Germany	142
6.9	Government Guarantees and Irregular Haircuts: Greece	143
6.10	Corporate Guarantees and Access to Cheap Funding	146
7	Market and Theoretical Prices	149
7.1	Eligible Marketable Collateral	149
7.2	Pledged Collateral	162
7.3	Summary	166
8	Collateral “Own Use”	168
9	Non-regulated Markets, Unsecured Bank Debt, and LTRO Uptake	171
10	Market Discipline	178
10.1	Market Discipline Impairment	178
10.2	Biases and Systemic Arbitrage	183
10.3	Potential Costs	185
10.4	Introducing Market Forces	189
11	Bailing Out the Euro	192
11.1	Unconventional Monetary Policies: Broad Patterns and Key Issues	194

11.2	Full Allotment, Fragmentation, and Inefficient Bailouts	199
11.3	Buying Time and Sovereign Free-Riding	207
11.4	Bailing Out the Euro: Who Benefits? General Observations	212
11.5	Event Study: September 4, 2014	214
12	The Endgame of the Euro Crisis	224
12.1	Background	225
12.2	Eurosystem Purchases of Sovereign Bonds: Legal Issues	231
12.3	The Expanded Asset Purchase Program	233
12.4	Issues and Scenarios	236
12.5	The Importance of Buying Sovereign and Bank Bonds	242
13	Restoring Credibility	245
13.1	Organized Hypocrisy	248
13.2	Secure Sovereign Debt and Modify Haircuts	256
14	The Problem with Collateral	263
14.1	The Fundamental Problem	263
14.2	The Interbank Market	266
14.3	Full Reserve Banking	269
15	Concluding Remarks	274
	Appendix: Haircut and Rating Rules Updates	281
A.1	Headline Changes	281
A.2	The Harmonized Rating Scale	282
A.3	Haircuts	284
A.4	Rating Rules	288
A.5	Greece and Cyprus	288
	References	293
	Index	313