The Future of Financial Regulation

A number of changes have been made to the supervision and regulation of banks as a result of the recent financial meltdown. Some are for the better, such as the Basel III rules for increasing the quality and quantity of capital in banks, but legal changes on both sides of the Atlantic now make it much more difficult to resolve failing banks by means of taxpayer funded bail-outs and could hinder bank resolution in future financial crises. In this book, Johan A. Lybeck uses case studies from Europe and the United States to examine and grade a number of bank resolutions in the last financial crisis and establish which were successful, which failed, and why. Using in-depth analysis of recent legislation, he explains how a bank resolution can be successful, and emphasizes the need for taxpayer-funded bail-outs to create a viable banking system that will promote economic and financial stability.

JOHAN A. LYBECK is CEO of Finanskonsult AB. As an academic, he has been, inter alia, a Chaired Professor of Economics, an Associate Research Professor of Econometrics and an Adjunct Professor of Finance. His banking career includes positions as Senior Vice President of Swedbank (Stockholm) in charge of financial strategy and Chief Economist at Matteus Bank. He is the author of *A Global History of the Financial Crash of 2007–2010* (Cambridge University Press, 2011).

The Future of Financial Regulation

Who Should Pay for the Failure of American and European Banks?

JOHAN A. LYBECK

CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781107106857

First published 2016
Printed in the United Kingdom by Clays

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data

Lybeck, Johan A., 1944-
The future of financial regulation : who should pay for the failure of American and European banks? / Johan A. Lybeck. — First Edition.
pages cm
Includes bibliographical references and index.
ISBN 978-1-107-10685-7 (hardback) — ISBN 978-1-107-51450-8 (paperback)
1. Financial services industry—United States. 2. Financial services industry—Great Britain. 3. Financial services industry—Law and legislation—United States. 4. Financial services industry—Law and legislation—Great Britain. 5. Banks and banking—United States. 6. Banks and banking—Great Britain. I. Title.
HG181.L93 2015
332.1094—dc23
2015029105

ISBN 978-1-107-10685-7 Hardback

ISBN 978-1-107-51450-8 Paperback

I wish to dedicate this book to Sheila Bair, chair of the Federal Deposit Insurance Corporation, 2006–11, who more than anybody else is to be thanked for the successful solution to the past crisis in the US, though we do not agree on the role of taxpayers in the next one

Contents

List of figures

List of tables

List of boxes

Preface

As a result of the financial crisis which began in 2007 and was still continuing in 2014, albeit at lower intensity, in countries such as Portugal and Italy, a number of measures have been undertaken to make a repeat of a crisis of a similar magnitude less likely but also to facilitate the recovery and resolution of failing banks should a (systemic) financial crisis nevertheless occur again.

Foremost among measures to increase the resistance of banks to financial stress are the Basel III rules for increasing the quality and quantity of capital as well as the introduction of liquidity coverage ratios, implemented by the Dodd–Frank legislation in the United States and by the CRD IV package in the European Union. Additional measures to improve stability are enhanced supervision, in particular of the too-big-to-fail (TBTF) banks, and a focus on stringent stress testing of banks. Countries such as Sweden and Switzerland have gone further than the required minima in setting higher capital requirements, especially for their TBTF banks. Other important measures include increasing the transparency and stability of the OTC derivatives market, forcing most trades to pass through clearing houses and increasing the capital requirements on those that don't. The Dodd–Frank Act places restrictions on the ability by US banks to own hedge and equity funds and forbids banks' proprietary trading, a half step back to the Glass–Steagall division into banks and investment banks. In Europe, countries such as the UK and France are forcing banks to ring-fence their core activities, especially insured deposit-taking, from riskier investment-bank activities.

Whether the measures taken will be sufficient is hotly debated. Some see the failure to break up the TBTF banks as an indication that the next crisis may be similar to the last one. Others think that the curtailment of banks' activities will instead lead to a crisis beginning in some part of the less-supervised so-called shadow banking system.

Be that as it may, measures have also been undertaken to change and hopefully improve the manner in which a banking crisis is resolved. In the United States, the Orderly Liquidation Authority (OLA) under Title II of the Dodd–Frank Act enhances the powers of the Federal Deposit Insurance Corporation (FDIC) to seize not only banks but also bank holding companies and other systemically important financial institutions, as well as its powers to impose losses on holders of unsecured debt on top of those of shareholders. Prepaid government-guaranteed deposit insurance funds are introduced in Europe in those countries that still lack them and increased in size in the United States. Under the Single Resolution Mechanism (SRM), an EU-wide single resolution authority is created and a gradually communalized single bank resolution fund is established for the euro area countries; some member states such as Sweden and Germany have already established industry-financed stabilization funds of their own. The United States has, however, rejected the use of prefunded resolution funds, preferring a pay-as-you-go financing of bank liquidation.

A trait common to OLA and the European Bank Recovery and Resolution Directive (BRRD) is to severely restrict – their respective authors would claim, making impossible – the possibility to bail out banks with taxpayers' money. The new US rules also severely curtail the ability of the Federal Reserve to utilize its powers under section 13(3) of the Federal Reserve Act to lend to individual non-bank institutions (such as Bear Stearns and AIG during the last crisis), invoking 'unusual and exigent circumstances'. In the future, such facilities must be broad-based and directed at providing liquidity to a group of financial institutions rather than individual firms.

To my mind, the restrictions imposed on the regulatory authorities' tool-kit may severely curtail their ability to resolve the next financial crisis, implying unnecessary costs not only to financial firms and the financial sector but unnecessary output losses and unemployment in the real economy. It seems that the last crisis has not been adequately researched to try to see which bank resolutions were successes, which were failures, and why. Can we distill from these case studies common traits which have contributed to successful interventions and resolutions and see whether these arrangements could be utilized in creating an improved system of resolution?

We will find, in particular, that the use of taxpayers' money is an inevitable feature of successful interventions. A credible resolution authority, irrespective of whether financing means are prefunded or not, depends on having the Treasury (i.e. the taxpayer) as a last resort. This implies that instead of curtailing bail-outs, we should try to deduce how to use taxpayers' money in an effective and equitable way, simultaneously guaranteeing its eventual return to the investors with a decent profit. Similarly, we will find that the bailing-in of unsecured bondholders and uninsured deposits was a significant factor behind creating additional uncertainty and financial instability, which points to the fact that bailing-in should only be undertaken using instruments such as subordinated debt and CoCo (Contingent Convertible) bonds, where the possibility of losses and/or forced conversion into equity was part of the contract and hence part of investors' perception of the risk/reward trade-off. Even better, an adequate capital cushion will be the best safety net against a repeat of the disaster of 2007–13.

In deducing which resolutions in the last crisis were successes, which were not and why, 29 case studies have been undertaken of the major interventions in the United States and Europe. The actions by the regulatory authorities have been graded on a standard academic scale of A–F where an 'F' means fail. Many readers will most certainly disagree with my evaluations but that is the way to start a debate, in this case a very important debate on the resolution of the next crisis.

One of the main findings of the book is that the United States, after Dodd–Frank, presents a consistent framework of resolution where some minor things need to be changed, as indicated in the body of the book. Europe, on the other hand, is in a total mess. Whereas in the United States, the three "legs" of a banking union (supervision, resolution, and deposit insurance) are in place, the European Union has introduced a Single Supervisory Mechanism (SSM) housed in the European Central Bank but without communalizing the other two "legs." A Single Resolution Board has been created but without adequate (common) resources and without the vital taxpayer-funded backstop. Common rules for deposit insurance have been enacted but without the necessary common Deposit Insurance Fund.

Either the European Union decides, within a very short period of time, to implement a true European Banking Union or it would be preferable to reintroduce supervision and resolution at the national level. In that case, it would also be preferable to move from home country control to host country control, where cross-border banking would have to be undertaken by subsidiaries rather than branches.

This kind of "ring-fence" will not only increase average levels of capital in the banking system but also facilitate the resolution of cross-border banks. In demanding that large international banks operate as separately capitalized US subsidiary bank holding companies under the supervision of the Federal Reserve, the United States may actually have shown a credible way forward also for the European Union, a road that the United Kingdom also appears ready to take.

Acknowledgements

A number of people have been kind enough to read and comment on the manuscript in earlier versions or helped in other ways. I wish to thank them all, especially Professor David Mayes from the University of Auckland, Professor Anat Admati from Stanford University, Daniel Ker from the British Office of National Statistics, Dr. George Tavlas from the Monetary Policy Council of the Central Bank of Greece, David Green, member of the Independent Commission on the Future of Banking at the Central Bank of Cyprus, Thorsteinn Thorgeirsson, senior advisor to the governor of the Central Bank of Iceland, Johanna Lybeck Lilja, state secretary at the Swedish Finance Ministry, Daniel Barr and Hans Lindblad, director and director general, respectively, at the Swedish National Debt Office and Jens Lundager, assistant governor at Danmarks Nationalbank.

All remaining errors and misconceptions as well as the responsibility for opinions stated are mine and mine alone.

Cambridge University Press
978-1-107-10685-7 - The Future of Financial Regulation: Who Should Pay for the Failure of American and European Banks?
Johan A. Lybeck
Frontmatter
More information

List of abbreviations

ABCP	asset-backed commercial paper
AIB	Allied Irish Banks
AIG	American International Group
AIGFP	American International Group Financial Products division
AMF	Autorité des Marchés Financiers
ARM	adjustable-rate mortgage
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht
BAMC	Bank Asset Management Company
BBVA	Banco Bilbao Vizcaya Argentaria
BCCI	Bank of Credit and Commerce International
BofA	Bank of America
BIL	Banque Internationale de Luxembourg
BIS	Bank of International Settlements
BOI	Bank of Ireland
BRRD	(European) Bank Recovery and Resolution Directive
BSAM	Bear Stearns Asset Management
CAM	Caja de Ahorros de Mediterráneo
CAMELS	Capital Adequacy, Assets, Management Capability, Earnings, Liquidity, Sensitivity
CBO	Congressional Budget Office
CCP	Central Counterparty (Clearing)
CDC	Caisse des Depôts et Consignations
CDO	collateralized debt obligation
CDS	credit default swap
CEPS	Centre for European Policy Studies
CET1	Core Equity Tier 1 Capital
CFTC	Commodity Futures Trading Commission
CGER	Caisse Générale d'Épargne et de Retraite (ASLK in Flemish)
CoCos	contingent convertible bonds

COP	Congressional Oversight Panel
CPDO	constant proportion debt obligation
CPFF	Commercial Paper Funding Facility
CPP	Capital Purchase Program
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
DeKa	Deutsche Kapitalanlage
DNB	Den Norske Bank
Depfa	Deutsche Pfandbriefanstalt
DIF	Deposit Insurance Fund
DINB	Deposit Insurance National Bank
DGP	Debt Guarantee Program
DMA	Dexia Municipal Agency
DTA	deferred tax assets
EAA	Erste Abwicklungsanstalt
EBA	European Banking Authority
EBS	Educational Building Society (Ireland)
ECB	European Central Bank
ECJ	European Court of Justice
ECN	Enhanced Capital Notes
ECOFIN	Economic and Financial Affairs Council
EFSF	European Financial Stability Facility
EFTA	European Free Trade Association
EIOPA	European Insurance and Occupational Pension Authority
ELA	Emergency Liquidity Assistance (Bank of England and ECB)
EMIR	European Market Infrastructure Regulation
ESMA	European Securities and Markets Authority
ESRC	European Systemic Risk Council
ETF	exchange-traded funds
EU MS	European Union Member States
FASB	Financial Accounting Standards Board
FCIC	Financial Crisis Inquiry Commission
FDIC	Federal Deposit Insurance Corporation
FDICIA	Federal Deposit Insurance Corporation Improvement Act
FHFA	Federal Housing Finance Agency

FIRREA	Financial Institutions Reform, Recovery, and Enforcement Act (1989)
FME	Fjármálaeftirlitsins (Financial Services Authority, Iceland)
FMS-WM	FMS Wertmanagement AöR
FOMC	Federal Open Market Committee
FPC	Financial Policy Committee (Bank of England)
FR	Financial Regulator (Ireland)
FRBNY	Federal Reserve Bank of New York
FRN	floating rate note
FROB	Fondo de Reestructuración Ordenada Bancaria
FSA	Financial Services Authority
FSB	Financial Stability Board
FSCS	Financial Services Compensation Scheme
FSOC	Financial Stability Oversight Council
FTT	Financial Transaction Tax ("Tobin tax")
GAAP	Generally Accepted Accounting Principles
GM	General Motors
GMAC	General Motors Acceptance Corporation
GSE	government-sponsored enterprise
G-SIFI	globally systemically important financial institution
HBOS	Halifax Bank of Scotland
HFSF	Hellenic Financial Stability Fund
HGA	A Hypo Group Alpe Adria
HMT	Her Majesty's Treasury
HRE	Hypo Real Estate group
IASB	International Accounting Standards Board
ICE	InterContinental Exchange
IFRS	International Financial Reporting Standards
IKB	Deutsche IndustrieBank
IL&P	Irish Life & Permanent
IMF	International Monetary Fund
INBS	Irish Nationwide Building Society
ING	Internationale Nederlanden Groep
IPO	Initial Public Offering
IRR	interest rate risk
IRS	Internal Revenue Service
ISDA	International Swaps and Derivatives Association
KDB	Korea Development Bank

KfW	Kreditanstalt für Wiederaufbau
LB	Landesbank Bayern
LBBW	Landesbank Baden-Württemberg
LCR	liquidity coverage ratio
LIBOR	London Inter-Bank Offered Rate
LTRO	long-term refinancing operation
MAC	material adverse change
MBIA	Municipal Bond Insurance Association
MBS	mortgage-backed security
MPS	Monte dei Paschi di Siena
NAMA	National Asset Management Agency (Ireland)
NBER	National Bureau for Economic Research
NBI	Nyí Landsbanki
NCG	Nova Caixa Galicia
NPL	non-performing loans
NYSE	New York Stock Exchange
OECD	Organisation for Economic Co-operation and Development
OCC	Office of the Comptroller of the Currency (US Treasury)
OFT	Office of Fair Trading
OLA	Orderly Liquidation Authority
ORA	Orderly Resolution Authority
ORF	Orderly Resolution Fund
OTC	over the counter
OTS	Office of Thrift Supervision
PCA	Prompt Corrective Action
PDCF	Primary Dealer Credit Facility
PIIGS	Portugal, Ireland, Italy, Greece, Spain
PRA	Prudential Regulatory Authority (Bank of England)
RBC	Royal Bank of Canada
RBS	Royal Bank of Scotland
RMBS	residential mortgage-backed security
RWA	risk-weighted assets
SAREB	Sociedad de Gestión de Activos Procedentes de la Reestructuración Bancaria
SCAP	Supervisory Capital Assessment Program
SEB	Skandinaviska Enskilda Banken
SEC	Securities and Exchange Commission
SEF	swap execution facility

SFIL	Société de Financement Local
SIFI	systemically important financial institution
SIGTARP	Special Inspector General for the Troubled Asset Relief Program
SIV	structured investment vehicle
SNB	Swiss National Bank
SNCI	Société National de Crédit à l'Industrie
SoFFin	Sonderfonds Finanzmarkt-stabilisierung
SPV	special purpose vehicle
SRB	Single Resolution Board
SRF	Single Resolution Fund
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
SWF	Sovereign Wealth Fund
TAF	Term Auction Facility (Federal Reserve)
TALF	Term Asset-Backed Securities Loan Facility
TARP	Troubled Assets Relief Program
TBTF	too-big-to-fail
TCE	True Core Equity
TCE	Tangible Common Equity
TLGP	Temporary Liquidity Guarantee Program
TSB	Trustee Savings Bank
TSLF	Term Securities Lending Facility
UKAR	UK Asset Resolution
UKFI	UK Financial Investments
WaMu	Washington Mutual savings bank

Introduction

Because of this reform, the American people will never again be asked to foot the bill for Wall Street's mistakes. There will be no more taxpayer-funded bailouts – period.

President Barack Obama, 21 July 2010[1]

(a) Liquidation required
All financial companies put into receivership under this subchapter shall be liquidated. No taxpayer funds shall be used to prevent the liquidation of any financial company under this subchapter.
(b) Recovery of funds
All funds expended in the liquidation of a financial company under this subchapter shall be recovered from the disposition of assets of such financial company, or shall be the responsibility of the financial sector, through assessments.
(c) No losses to taxpayers
Taxpayers shall bear no losses from the exercise of any authority under this subchapter.

Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010, H.R. 4173, Title 1, chapter 53, subchapter II, § 5394[2]

We worked hard to make sure taxpayer bailouts are completely prohibited. I think the language is very tight on that. One of the things that frustrate me with critics of Title II is that they perpetuate the myth of Too Big To Fail by insisting that the government is still going to do bailouts, notwithstanding clear language in Dodd–Frank to the contrary. And that just continues the moral hazard by reinforcing market perceptions that the big institutions won't be allowed to fail.

Sheila Bair, former chairman of the FDIC, interview in the Washington Post, 18 May 2013[3]

1 www.youtube.com/watch?v=MBEY24qyBIM
2 www.gpo.gov/fdsys/pkg/BILLS-111hr4173eh/pdf/BILLS-111hr4173eh.pdf
3 www.washingtonpost.com/blogs/wonkblog/wp/2013/05/18/sheila-bair-dodd-frank-really-did-end-taxpayer-bailouts/

The capital requirements on banks must be set to ensure that the need for the exceptional support of Governments is never again required.

Ireland's former Taoiseach (prime minister) Brian Cowen in a speech on 21 March 2012 at Georgetown University[4]

The financial crisis highlighted that public authorities are ill-equipped to deal with ailing banks operating in today's global markets. In order to maintain essential financial services for citizens and businesses, governments have had to inject public money into banks and issue guarantees on an unprecedented scale: between October 2008 and October 2011, the European Commission approved €4.5 trillion (equivalent to 37% of EU GDP) of state aid measures to financial institutions. This averted massive banking failure and economic disruption, but has burdened taxpayers with deteriorating public finances and failed to settle the question of how to deal with large cross-border banks in trouble.

The proposals adopted today by the European Commission for EU-wide rules for *bank recovery and resolution* will change this. They ensure that in the future authorities will have the means to intervene decisively both before problems occur and early on in the process if they do. Furthermore, if the financial situation of a bank deteriorates beyond repair, the proposal ensures that a bank's critical functions can be rescued while the costs of restructuring and resolving failing banks fall upon the bank's owners and creditors and not on taxpayers.

EU Commission, press release, "New crisis management measures to avoid future bank bail-outs," 6 June 2012[5]

Resolution: The objective of resolution is to minimise the extent to which the cost of a bank failure is borne by the State and its taxpayers.

EU Commission, "EU Bank Recovery and Resolution Directive (BRRD): frequently asked questions," 15 April 2014[6]

[4] www.corkeconomics.com/wp-content/uploads/2012/03/3.21.12-Cowen-Speech.pdf
[5] http://europa.eu/rapid/press-release_IP-12-570_en.htm
[6] http://europa.eu/rapid/press-release_MEMO-14-297_en.htm

In reading the above statements from policy makers and regulators from both sides of the Atlantic, one is struck by their sincerity and their absolute conviction: taxpayer-funded bail-outs of banks will in the future not only be forbidden but made impossible by the new legislation. This raises two questions:

- Is that really so? There will be no more taxpayer-funded bail-outs for sure? As we will come back to in Part VI of the book, opinions on this issue are in reality more varied than the above-quoted statements indicate, especially among academics. Many would say that the too-big-to-fail (TBTF) banks are still alive and kicking and will be bailed out next time also, even though the procedures for fiscally financed bail-outs may have been made more difficult. According to a survey of finance professionals in November 2013, 97 percent of the interviewed did not think that the actions taken to improve banking supervision would prevent another market crash in the future.[7]
- If it were true, is it a good thing that the financial sector will be left to deal with its own recurrent crises? After all, we know from Reinhard and Rogoff that there have been 138 financial crises since World War II, 23 of them occurring in the Anglo-Saxon and West European countries on which this book focuses.[8,9] Have really all bail-outs been failures? Haven't taxpayers sometimes, perhaps even most of the time, got their money back with a return, sooner or later? Shouldn't we focus on the *conditions* to enhance this possibility rather than ruling out bail-outs *a priori*? Haven't there also been failed bail-ins of creditors (e.g. Cyprus)? What happens to the real

7 *Financial Times Fund Management*, 25 November 2013.

8 Carmen M. Reinhart and Kenneth S. Rogoff, *This Time is Different: Eight Centuries of Financial Folly* (Princeton University Press, 2009), table A.3.1, pp. 344 ff.

9 This gives one country one observation each until the authors' cut-off date of 2008. Should we add another five years (–2013), we would add at least seven countries/crises for a total of 30 crises. Should we go by years of crises, irrespective of the number of countries involved, we would find eight periods of crises in a 40-year period. This numbering presumes that the financial crisis of 2007 onwards is treated as one crisis rather than several. This in turn raises the question of whether the European sovereign debt crisis is a crisis in itself or "only" the continuation of the banking crisis that began in 2007. We will come back to this question in Parts II and III.

sector (growth and unemployment) if a financial crisis is worsened as a result of the non-involvement of the taxpayer?

It's hardly surprising that the reaction from the general public, and, hence, from their elected representatives, to the recent financial crisis should have been so harsh. After all, banks worldwide wrote down over 2,000 billion dollars in credit losses. Loss ratios varied from a high in the United States at 7 percent of total lending and 5 percent in the UK, 3 percent in the euro area to just over 1 percent in Asia.[10] To these numbers should be added (as we do below) losses from 2011 onwards from the interacting sovereign debt crisis and a banking crisis in countries such as Portugal, Italy, Ireland, Greece and Spain (the so-called PIIGS countries[11]) as well as Cyprus. Other countries with banks in financial trouble will most certainly be added as this book goes into production; Slovenia and Malta are frequently mentioned candidates.[12]

To a large extent, the lost capital had to be replaced by taxpayer-funded capital injections into the banking system. The International Monetary Fund (IMF) has recently provided the calculations in Table 1. Note that they come from two different sources and cover slightly different periods and data. Nevertheless, a few clear conclusions appear:

- A large part of the new equity capital raised, over 1,700 billion dollars, has come from governments/taxpayers rather than from the market. Only in a very few cases (Barclays and Lloyds in the UK, BNP Paribas in France, Deutsche Bank in Germany, *cajas* in Spain, Monte dei Paschi in Italy, large US banks, to mention the most visible) have banks been ordered by their regulatory authorities to raise more capital from private investors. Otherwise improvements in equity and hence increase in capital ratios, in particular in the United States, have been made possible by the return of the banking sector to profitability as well as by the suppression of dividends.

10 International Monetary Fund, *Global Financial Stability Report*, October 2010, figure 1.12, p. 13.
11 Although, for the purpose of this book, PIIGS should rather refer to Portugal, Iceland, Ireland, Greece and Spain, since Iceland but not Italy has sought and received IMF aid.
12 *Financial Times*, 21 November 2013, "Slovenia battles to avoid bailout over banks' huge black hole."

- Of the taxpayer-funded bail-outs, just over half had been repaid by the end of 2013 worldwide. The United States gives an even more positive picture. Under the TARP program, a total of 707 banks received 205 billion dollars in capital injections (Capital Purchase Program, CPP). Of these, 196 billion had been repaid by December 2013, 2 billion had been written off and hence 7 billion dollars remained outstanding. During the lifetime of the program, taxpayers had also received dividends and other income of 47 billion dollars from the entire TARP program (of which 10 billion from the CPP and the Systemically Failing Financial Institutions (SFFI) program).[13]
- Whereas the first column in Table 1 represents direct capital injections into banks, the second encompasses other financial firms. For the United States, the 1.5 percent corresponds to the Capital Purchase Program (CPP) while the higher figure in column 2 includes also capital support to AIG, Freddie Mac and Fannie Mae and the auto industry finance companies GMAC (now Ally Financial) and Chrysler Financial. For Germany, the left-hand column includes only federal capital injections (Commerzbank, Hypo Real Estate, IKB, WestLB) whereas column 2 includes also asset purchases. For Ireland, the data do not include the asset purchases by NAMA (the National Asset Management Agency) since it is funded independently outside the government budget. For Luxembourg, the sums stem from the Luxembourg parts of nationalized Fortis and Dexia. For the Netherlands, the higher figure in the second column includes asset guarantees to ABN AMRO/Fortis and ING.
- For most of the countries, taxpayer support is in single-digit numbers, making this crisis comparable to the savings and loan crash in the United States in the 1980s or the Nordic financial crises in the 1990s.[14] Three countries stand out, however: (a) Iceland, where bank assets were ten times GDP, and which saw a budget impact of 44 percent of GDP (original IMF estimates were even at 80 percent of GDP); (b) Ireland at a similar cost of 40 percent of GDP and assets at eight times GDP; and (c) Greece, where the banking crisis is

[13] SIGTARP, Office of the Special Inspector General for the Troubled Asset Relief Program, *Quarterly Report to Congress*, 29 January 2014, www.sigtarp.gov/Quarterly%20Reports/January_29_2014_Report_to_Congress.pdf

[14] Johan A. Lybeck, *A Global History of the Financial Crash of 2007–2010* (Cambridge University Press, 2011), table 8.1, p. 281.

Table 1. *Financial sector support, selected economies, percentage of GDP*

Country	Gross injection	Impact on gross public debt	Recovery to date	Impact after recovery
Austria	2.9	4.9		
Belgium	6.0	7.4	1.5	5.9
Cyprus		10.0	–	10.0
Denmark	2.8	3.1		
France	0.5	1.3		
Germany	1.8	12.8	2.0	10.8
Greece	25.4	19.7	4.3	15.4
Iceland	34.1	44.2	23.7	20.5
Ireland	40.7	40.5	4.4	36.1
Italy	0.3			
Luxembourg	7.7			
Netherlands	6.6	14.6	10.0	4.6
Spain	2.0	7.3	2.9	4.4
United Kingdom	5.0	6.7	1.5	5.2
United States	1.5	4.8	4.2	0.6
Average		7.0	3.7	3.3
SUM (US dollar billion)		1,729	914	815

Sources: International Monetary Fund (Luc Laeven and Fabian Valencia), "Systemic banking crises: a new database," IMF Working Paper 2008/224, updated June 2012, IMF Working Paper 2012/163, www.imf.org/external/pubs/ft/wp/2012/wp12163.pdf; International Monetary Fund, *Fiscal Monitor*, "Fiscal adjustment in an uncertain world," April 2013, table 5, p. 14. Note: data are through February 2013.

mostly a reflection of the sovereign crisis and the decision to write down the value of privately held Greek debt, largely held by Greek (and Cyprus) banks.

Much higher figures for the state aid provided to banks result from adding also guarantees for deposits and other debt and the myriads of liquidity support extended by the central banks under a variety of