

On Central Banking

In these six lectures given at the Norwegian Royal Academy of Science and Letters, Jan Fredrik Qvigstad draws on his deep experience at Norges Bank to outline key principles on which to base central bank policy. The first two lectures (about keeping promises and transparency) emphasize the importance of credibility and ensuring accountability. Lectures 3-6 can be viewed as applying these key principles to specific issues (making good decisions, managing wealth, learning from history, and institutions). The lectures do not break new ground – indeed, Qvigstad nicely illustrates how these principles have been articulated in literature, history, and politics. Rather, the lectures emphasize the lessons to be learned by applying these principles to central banking history with primary reference to the case of Norway, such as managing Norway's sovereign wealth fund and designing institutions that will produce good policy outcomes.

Jan Fredrik Qvigstad (born 1949) was Deputy Governor and Deputy Chair of the Executive Board of Norges Bank 2008–2014. From 1997 he was Chief Economist of Norges Bank. He is now the Executive Director, General Staff, at Norges Bank with the responsibility for the bank's economic history project.



Advance Praise for On Central Banking

"Jan Fredrik Qvigstad's *On Central Banking* revives European essay writing in the tradition of Michel de Montaigne or David Hume. The lectures, collected in this volume, reflect a very well-read author and a lifetime of experience. At the same time, they read like letters from a wise friend who says: 'I have tried it and it worked well for me.'"

Vitor Gaspar, Director of Fiscal Affairs Department, International Monetary Fund

"On Central Banking is a highly entertaining and insightful collection of lectures that will appeal not only to those interested in central banks, but also to a wide audience of regulators, politicians, church leaders, and others. Drawing on history, academic theories from various subjects, and the author's own experiences, this is a fascinating discussion of what makes for effective and legitimate institutions."

Anne Sibert, Professor of Economics, Birkbeck, University of London



STUDIES IN MACROECONOMIC HISTORY

Series Editor: Michael D. Bordo, Rutgers University

Editors:

Owen F. Humpage, Federal Reserve Bank of Cleveland Christopher M. Meissner, University of California, Davis Kris James Mitchener, Santa Clara University David C. Wheelock, Federal Reserve Bank of St. Louis

The titles in this series investigate themes of interest to economists and economic historians in the rapidly developing field of macroeconomic history. The four areas covered include the application of monetary and finance theory, international economics, and quantitative methods to historical problems; the historical application of growth and development theory and theories of business fluctuations; the history of domestic and international monetary, financial, and other macroeconomic institutions; and the history of international monetary and financial systems. The series amalgamates the former Cambridge University Press series *Studies in Monetary and Financial History* and *Studies in Quantitative Economic History*.

Other books in the series:

- Michael D. Bordo, Øyvind Eitrheim, Marc Flandreau, and Jan F. Qvigstad, Editors, *Central Banks at a Crossroads: What Can We Learn from History?* (2016)
- Michael D. Bordo and Mark A. Wynne, Editors, *The Federal Reserve's Role in the Global Economy: A Historical Perspective* (2016)
- Owen F. Humpage, Editor, Current Federal Reserve Policy Under the Lens of Economic History: Essays to Commemorate the Federal Reserve System's Centennial (2015)
- Michael D. Bordo and William Roberds, Editors, *The Origins, History, and Future of the Federal Reserve: A Return to Jekyll Island* (2013)



- Michael D. Bordo and Ronald MacDonald, Editors, Credibility and the International Monetary Regime: A Historical Perspective (2012)
- Robert L. Hetzel, *The Great Recession: Market Failure or Policy Failure?* (2012)
- Tobias Straumann, Fixed Ideas of Money: Small States and Exchange Rate Regimes in Twentieth-Century Europe (2010)
- Forrest Capie, The Bank of England: 1950s to 1979 (2010)
- Aldo Musacchio, Experiments in Financial Democracy: Corporate Governance and Financial Development in Brazil, 1882–1950 (2009)
- Claudio Borio, Gianni Toniolo, and Piet Clement, Editors, *The Past and Future of Central Bank Cooperation* (2008)
- Robert L. Hetzel, The Monetary Policy of the Federal Reserve: A History (2008)
- Caroline Fohlin, Finance Capitalism and Germany's Rise to Industrial Power (2007)
- John H. Wood, A History of Central Banking in Great Britain and the United States (2005)
- Gianni Toniolo (with the assistance of Piet Clement), Central Bank Cooperation at the Bank for International Settlements, 1930–1973 (2005)
- Richard Burdekin and Pierre Siklos, Editors, Deflation: Current and Historical Perspectives (2004)
- Pierre Siklos, The Changing Face of Central Banking: Evolutionary Trends since World War II (2002)
- Michael D. Bordo and Roberto Cortés-Conde, Editors, *Transferring Wealth and Power from the Old to the New World: Monetary and Fiscal Institutions in the 17th through the 19th Centuries* (2001)
- Howard Bodenhorn, A History of Banking in Antebellum America: Financial Markets and Economic Development in an Era of Nation-Building (2000)
- Mark Harrison, Editor, The Economics of World War II: Six Great Powers in International Comparison (2000)
- Angela Redish, Bimetallism: An Economic and Historical Analysis (2000) Elmus Wicker, Banking Panics of the Gilded Age (2000)

Continued after Index



On Central Banking



Jan Fredrik Qvigstad





CAMBRIDGE UNIVERSITY PRESS

One Liberty Plaza, New York NY 10006

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/9781107150973

© Norges Bank 2016

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2016

Printed in the United Kingdom by Clays, St Ives plc

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

Library of Congress Cataloging in Publication Data

Names: Qvigstad, Jan Fredrik, author.

Title: On central banking / Jan Fredrik Qvigstad.

Description: 1 Edition. | New York : Cambridge University Press, 2016. | Series: Studies in macroeconomic history | "Contains six lectures given at the Norwegian Academy of Science and Letters." | Includes bibliographical references and index.

Identifiers: LCCN 2016000902 | ISBN 9781107150973 (Hardback)

Subjects: LCSH: Banks and banking, Central. | Transparency in international agencies. | Monetary policy. | Trust.

Classification: LCC HG1811 .Q85 2016 | DDC 332.1/1–dc23 LC record available at http://lccn.loc.gov/2016000902

ISBN 978-1-107-15097-3 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party Internet Web sites referred to in this publication and does not guarantee that any content on such Web sites is, or will remain, accurate or appropriate.



> To my wife Nina and children Maria Céline and Lars Fredrik





Contents

Foreword		page xi	
Λ	Aichael D. Bordo		
Preface		xxix	
1	On Keeping Promises	1	
2	On Transparency	32	
3	On Making Good Decisions	67	
4	On Managing Wealth	97	
5	On Learning from History: Truths and Eternal		
	Truths	124	
6	On Institutions: Fundamentals of Confidence		
	and Trust	156	
Index		191	







Foreword

Michael D. Bordo

I first met Jan F. Qvigstad in the spring of 2007 when he and Øyvind Eitrheim came to see me at King's College, Cambridge, when I was on sabbatical, to discuss the plans for the Norges Bank's bicentenary celebration. Jan is a very impressive central bank deputy governor who is not only a very able technical monetary economist but also a polymath – he is a scholar of the arts, the sciences, and the humanities.

Jan has spent much of his career at Norges Bank with some excursions to the academic world. He worked his way up the ladder to become Deputy Governor and Vice-Chairman of the Executive Board of the Norwegian Sovereign Wealth Fund. As an economist he has written a number of important policy papers, including one in 2006, "When Does an Interest Rate Path 'Look Good'? Criteria for an Appropriate Future Interest Rate Path"





Foreword

which has led to what Carl Walsh, a leading scholar of central banking, has recently dubbed

the Qvigstad Rule, a useful rule of thumb for inflation targeting central banks to assess monetary policy.... It has the advantage of focusing on things we care about – inflation and real activity – rather than the setting of the policy instrument.... If inflation is above target the output gap should be negative and vice versa. If inflation is above target and the output gap is also positive, then policy is too loose; if inflation is below target and the output gap is negative, policy is too tight. (Walsh 2014)¹

Most important and most interesting are the six annual lectures Jan gave at the Norwegian Academy of Science and Letters from 2008 to 2013. The lectures are lessons or homilies for how to be a good central banker. All the lectures are grounded in the history of Norges Bank and the history of central banking in general. The six lectures are intertwined and then summarized in his most recent lecture. "On Institutions."



¹ Carl E. Walsh (2014), "Monetary policy objectives and central bank trade-offs under flexible inflation targeting," Keynote address, 16th Annual Inflation Targeting Seminar, Banco Central do Brazil, May 15–16, 2014.



Foreword

Lecture 1: On Keeping Promises

To establish credibility central banks have to keep their promises. Promises are hard to keep because future temptations come along to break them. For a central bank the promise to maintain the value of money, that is, to maintain price stability, can be hard to keep in the face of political pressure to reduce unemployment or stimulate output during a recession. To keep its promises the central bank needs to follow the example of Ulysses and be bound to the mast to resist the sirens' songs. This fundamental idea was put forth by the philosopher Jon Elster (1979)² and by the economists Thomas Schelling (1960)³ and Finn Kydland and Edward Prescott (1977).⁴ Being tied to the mast prevents short-run objectives from dominating long-run objectives. To follow through on its key mandate to maintain price stability the central bank needs to be backed up by the government.



² Jon Elster (1979), Ulysses and the Sirens: Studies in Rationality and Irrationality, Cambridge University Press.

³ Thomas C. Schelling (1960), *The Strategy of Conflict*, Cambridge, Mass.: Harvard University Press.

⁴ Finn E. Kydland and Edward C. Prescott (1977), "Rules Rather Than Discretion: The Inconsistency of Optimal Plans," *Journal of Political Economy*, Vol. 85, No. 3, pp. 473–491.



Foreword

The history of monetary policy is rife with precommitment mechanisms that didn't work. The specie standard that prevailed through much of recorded history made keeping promises easy to monitor. Coin defined as a fixed weight of gold or silver could be relatively easy to ascertain by the market. Still, in times of turbulence, monarchs were tempted to debase the coinage to gain seignorage revenue. The best known culprits were the kings of France and Burgundy in the fifteenth century and Henry VIII of England in the sixteenth century. With the advent of bank notes and government chartered banks of issue, keeping promises meant maintaining the convertibility of paper notes into specie at a fixed exchange rate - the specie standard rule. New technology made the temptation to overissue easier. The shift to a fiat money standard in the twentieth century increased opportunities for breaking promises because of the loss of the specie nominal anchor. It took until the 1980s for credibility to maintain low inflation to be restored.

Within this general framework of world monetary history Jan examines the record of Norges Bank with keeping promises. When Norges Bank was founded in 1816 the key problem it faced was the legacy of high inflation after the Napoleonic wars. The bank introduced a currency convertible into silver called the speciedaler. A big problem was that Norges Bank did not





Foreword

have large enough silver reserves to fully back the new currency. It took twenty years to restore full convertibility but credibility was attained by "the long promise" to steadily contract the money supply until convertibility could be achieved. From the 1840s until World War I Norway, like other advanced countries, followed the specie standard rule, leading to an era of price stability and good macroeconomic performance. The good pattern broke with World War I and a return to high inflation and macro instability. After the war, Governor Nicolai Rygg followed the specie standard rule and engineered a serious deflation accompanied by recession to achieve convertibility at the prewar parity. A backlash triggered by the real costs of his "par" policy carried through much of the rest of the twentieth century. After World War II, Norway eagerly adopted Keynesian aggregate demand management and went further into indicative planning and credit allocation (like other European countries). These policies eventually led to rising inflation, sluggish growth, and frequent devaluations, culminating in a period of unstable money in the 1970s. The return to keeping promises came in 1986 with the decision by the government to have a mandate for low inflation and, eventually, give the Norges Bank the independence to implement it via inflation targeting.





Foreword

Lecture 2: On Transparency

Central bank transparency and accountability is today viewed as key to maintaining credibility for low inflation. In earlier times central banks acted in secrecy and good central bank governors learned to be as cryptic as possible; for example, the maestro Alan Greenspan was impossible to understand. Today central banks try to be as open and transparent as possible so they can achieve their objectives of low inflation and low inflation expectations. Indeed, transparency is a way to manage inflation expectations. In this lecture Jan complements the previous lecture on keeping promises by narrating how central bank transparency evolved through the ages.

Under the specie standard, when the key objective was to maintain the fixed price of gold, it was easy to observe the central bank's gold reserves. This carried forward to the post–World War II realm of fixed exchange rates. With respect to lender of last resort policy, Walter Bagehot's strictures told central banks to announce their policy clearly and in advance. The shift to managed fiat standards and central banks providing stabilization policy became associated with central bank secrecy in revealing their interest rate policies in the belief that unexpected policy could influence the markets. This was jettisoned in the 1970s and 1980s with the rational expectations





Foreword

revolution and the belief in central bank credibility as a way to anchor inflation expectations. Central bank transparency became the norm worldwide.

Jan surveys Norges Bank's experience. Like other countries it followed the specie standard and later fixed exchange rates with a modicum of transparency except at times when devaluation seemed imminent. With the shift to the emphasis on low and stable inflation and credibility (the keeping of promises), it became important to become transparent and to communicate the central bank's intentions. Norges Bank has the best record in the world in transmitting its intentions, its forecasts, and the models it uses. Norges Bank follows the collegial approach, in contrast to the individualistic approach of the Bank of England and the Riksbank. This has a bearing on how the minutes can be written and published. Detailed minutes with a collegial approach is difficult because the board members would be reluctant to let their views be recorded.

Lecture 3: On Making Good Decisions

Norges Bank as an independent central bank has been delegated the mandate to provide price stability. It targets inflation, varies the policy rate to hit its inflation target, and has to make decisions on when to raise and lower





Foreword

the rate. Decisions matter a lot because they affect the public's view of the competence and quality of the central bank. The problem with decision making is that we live in an uncertain world. Jan discusses how decisions were made in Norges Bank's history. Two important episodes stand out: when the United Kingdom devalued the pound in 1931 and when it devalued in 1949. Norway, as a small open economy with close trade ties to the United Kingdom, to avoid being at a competitive disadvantage, followed the United Kingdom's lead in 1931. As a consequence, like the other countries that followed the United Kingdom's lead, it recovered quickly from the Great Depression. In 1949 it followed the same rule of thumb as in 1931 and devalued by the same amount as the United Kingdom. This time, the outcome was different: Norway suffered high inflation. The difference between the two episodes was that in the earlier one there was substantial economic slack while in the later episode there was excess aggregate demand. The prevailing economic conditions were not closely considered by the monetary authorities.

Jan describes how today the Norges Bank's Executive Committee makes decisions using the expertise of its research department and its collegiality-based committee system. However, he points out that Norges Bank's approach runs the risk of groupthink, which is why most





Foreword

of its members come from outside the bank. He argues that Norges Bank's decision making is sharpened by the clarity of its mandate to maintain an inflation target of 2.5 percent over a longer period. This allows it the flexibility in the short term to deal with shocks to the real economy while always maintaining its long-term goal. Good decision making is tied in closely with transparency and with keeping promises. Transparency is a precondition for accountability, which focuses the minds of policy makers to make the best decisions possible.

Lecture 4: On Managing Wealth

As Deputy Governor Jan F. Qvigstad was the vice-chairman of the Executive Board of the Norwegian Sovereign Wealth Fund (SWF) called "Government Pension Fund Global" (which is managent by Norges Bank Investment Management (NBIM)). In Lecture 4 he describes how he perceives his mandate. Norway has so far avoided the Dutch Disease where a sudden increase in oil revenues can lead to the misallocation of resources toward the oil-producing sector and to eventual impoverishment. The Norwegian SWF has invested the oil revenues and a fiscal policy rule secures that only the returns on its previous investments are spent.





Foreword

Jan explains how the fund allocates its asset purchases between bonds and primarily foreign equities and how it selects the companies it invests in, paying close attention to avoiding investing in companies "violating fundamental humanitarian principles." As one of the largest SWFs, Government Pension Fund Global accounts for 1 percent of global equities, yet it has avoided exerting undue influences in its member countries. Norway is fortunate to have its oil resources and such a well-managed SWF.

Lecture 5: On Learning from History

Qvigstad employs Thomas Kuhn's (1962)⁵ concept of paradigm shifts to analyze the theoretical backgrounds to policy making in history. He starts with the classical approach to fiscal policy – to always maintain balanced budgets. This was the view of the Norwegian Director General at the Ministry of Finance, Mr. Nissen, right after World War II. This approach was quickly eclipsed by the Keynesian paradigm, which posited active budget management to stabilize the economy and to allocate resources. The Keynesian/Frischian vision dominated



⁵ Thomas Kuhn (1962), *The Structure of Scientific Revolutions*, University of Chicago Press.



Foreword

Norwegian macro policy making from the 1940s to the 1970s. By the 1970s a disconnect between the reality of large deficits, high inflation, and weak economic performance led to a new Kuhnian paradigm shift toward the Lucasian rational expectations approach, which emphasized the role of free markets rather than government intervention, and monetary and fiscal policy based on transparent rule-like behavior. This produced the Great Moderation, which lasted until the financial crisis of 2007–2008. Time will tell if the paradigm will last.

Jan argues that there is learning from history but that caution needs to be exercised before discarding the old paradigm. According to him, the simple balanced budget rule of Director General Nissen in 1945 would have helped the Europeans avoid the ravages of the recent Eurozone crisis while Keynesian policies of spending in recessions and saving in the boom could also have been helpful.

His desired prescription is to follow simple rules such as his "Rule of Four" (Llewellyn and Qvigstad 2012, pp. 31–44).⁶ When the current account deficit exceeds 4 percent of GDP, inflation exceeds 4 percent, unemployment exceeds 4 percent, and bank lending exceeds 4 times



⁶ See John Llewellyn and Jan F. Qvigstad (2012), "The 'Rule of Four,'" *The Business Economist*, Vol. 43, No. 1.



Foreword

the GDP, the economy is heading for trouble. Simple rules in an environment of confidence in policy making will carry the policy maker far but, according to Jan, there is no Faustian magic wand and real economic problems need real economic adjustments.

Lecture 6: On Institutions

Qvigstad uses Acemoglu and Robinson's (2012)⁷ distinction between inclusive and extractive institutions as a backdrop to describing how the Norges Bank evolved as a "good institution." Inclusive institutions exist to serve the people, while extractive institutions foster rent seeking. After the industrial revolution Norway shifted from the "old society," based on the institutions of the family and the village, to a modern economy. Upon independence in 1814 sound institutions were established with the Constitution, the Supreme Court, the Norges Bank, and the public school system.

The Glorious Revolution in England in 1688 set that country on the path of sound institutions, which backstopped the development of markets and the division of labor. The concept of sound institutions applies to the



D. Acemoglu and J. Robinson (2012), Why Nations Fail: The Origins of Power, Prosperity and Poverty, New York: Crown Publishers.



Foreword

monetary system, which has evolved from specie to the present fiat system. Institutional developments that prevented debasement and the overissue of paper money preserved the functions of money as a store of value, unit of account, and medium of exchange – key ingredients to provide grounding for economic development.

Jan describes the key defining moments in the Norges Bank's path to becoming a cutting-edge, credible central bank. The defining moments mentioned in earlier lectures were the speciedaler and "the long promise," which led to the transition between the Napoleonic war inflation to the stable money of the specie standard; the resumption of gold convertibility called "par" policy in the 1920s under Nicolai Rygg, which damaged the reputation of the Norges Bank and led it (as was the case in other countries) to lose its independence to the fisc; the Keynesian/Frischian interlude from the 1940s to the 1970s that ended with ten devaluations and high inflation; and the policy shift in 1986 to the Norges Bank regaining its independence, adopting a mandate for price stability and adopting inflation targeting in 2001. Jan calls the period 1986-2001 "the long return." So the 200-year history of Norges Bank starts with "the long promise" (from monetary chaos to price stability) and ends with "the long return" (to price stability).





Foreword

Qvigstad concludes his lecture series with four key principles for a sound central bank: (1) it must keep its promises, (2) it must make good decisions, (3) it must be transparent, and (4) it must learn from history. The Norges Bank under the guidance of Jan F. Qvigstad and his predecessors is certainly a good example of these principles.

The Lecture Not Held: On Mediocrity

After each of lectures in the Norwegian Academy of Science and Letters there was a general discussion. In his closing remark, Jan used to announce the theme for next year's lecture. The sixth lecture was the last one, but even so Jan said that if there should have been a next one, the theme would have been "On Mediocrity." The reasoning he gave was the following: Institutions are often measured in terms of their role and credibility. It is not easy to measure credibility, but it is done. Norway scores high on such confidence measures. Some assessments for Russia show that the level of output would have been 70 percent higher if the country's confidence measure had been as high as was the measure for Sweden. Confidence is important for economic prosperity. Individual institutions are also measured. But the scores are not static. They may rise or fall. Norges Bank is today among the highest ranking in such surveys.





Foreword

But Norges Bank must not rest on its laurels. A central bank must be competent if it is to maintain its credibility. As a starting point the central bank is somewhat handicapped in this respect.

There are two main reasons for this: Norges Bank is a monopolistic institution. It is the only central bank in the country. There is no other benchmark within the nation. Second, the institution has at its disposal a potentially enormous budget. It prints its money. Printing a 1,000 krone note costs half a krone and the bank can sell the printed note for 1,000 kroner. The potential financial leeway is substantial. An undertaking needs a good-sized budget, but not one that is too big! One may easily become self-satisfied. So, even if Norges Bank has a high ranking in terms of reputation and confidence, it can quickly slip into a mood of self-satisfaction and then mediocrity. It is up to Norges Bank to put into place the mechanisms to prevent this from occurring. The central bank must tie itself to the mast.

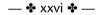
What can a central bank do? The first element is transparency. It must expose itself to criticism. The second element is an international dimension. It must be part of the international community of central banks and academia to provide a basis for comparison. Governor Erik Brofoss was central bank governor from 1954 to 1970 and was perhaps more concerned with questions





Foreword

outside the realm of central banking. But he was the one who laid part of the foundation for the "long return" perhaps without knowing the scope of what was to follow or the eventual outcome. Brofoss was intent on sending young economists at the bank out into the world to learn. When they came back, they had learned that another world was possible, benefiting from input about what central banks should be doing and how monetary and credit policy should be conducted. Today, there is a research unit at the bank. Its research output is useful, but a drop in the ocean in relation to the totality of the research produced in the world. But the research unit is important to keep the central bank on its toes. It is the bank's bridge to the academic world within and outside Norway. Internationally recognized researchers visit the bank every week and inform it of the most recent research developments and challenges for its perceptions and thinking. The very presence of internal researchers with specialized competence in the area of central banking keeps other staff on the ball. The research unit keeps the bank as an institution from isolating itself, from becoming introverted and self-satisfied. The third element is a good interplay between the bank's executive bodies and staff. Most of the literature on "making good decisions" is concerned with the composition of the board (external vs. internal and experts vs. general

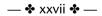




Foreword

competence) and their decision-making bodies (collegial vs. individualistic committees). Not least, it is important that the board use its staff competence effectively. If an institution such as Norges Bank slowly slides into mediocrity, it will not be discovered until it is too late

From reading Jan's lectures you realize that he is not just another boring central bank economist who looks at his shoes, but a polymath who is interested in everything. In his lectures, especially in the footnotes, he quotes from and cites, in addition to economics books and articles, history, philosophy, psychology, law, sociology, poetry, and drama. Jan also has his whimsical side, with occasional references to Harry Potter. The Norges Bank is fortunate to have him on board, as is the fraternity of central bankers.







Preface

"Money makes the world go around," they sing in the musical *Cabaret*. The musical is dark and melancholic. The song's message is that money makes the world go around; not love, not having children and grandchildren – just money.

As economists we think otherwise. We think that money is not an end in itself. Money is the oil in the machinery that helps the economy to function. We think of money as the unit of account, just like distance is a unit of measurement. It would be meaningless to answer the question "How far is it?" with 110. One must add the unit of measurement, "yards" or "meters." Money is useful as means of payment so that one can avoid returning to a barter economy. Money is also a store of value, creating a time gap between earning and spending to allow borrowing in the meantime, which





Preface

facilitates investment. Money, however, only functions in an efficient way if there is trust and confidence. In early times money circulated in the form of coins, with a promised content of silver, copper, or gold. It was tempting to debase the coins and reduce or replace some of the silver with less valuable metals. When paper money came into use in the form of banknotes, it was tempting to produce too many of them, until their value depreciated and they could no longer be exchanged into the promised silver or gold content. Since the midnineteenth century, money has mainly been in the form of bank deposits. Trust is still critical, not least our trust in banks. As the economy develops and grows more sophisticated, so does money. In a modern society, it is inconceivable for the world to go around without money. Modern societies have delegated the task of safekeeping money to central banks.

On Central Banking contains six lectures given at the Norwegian Academy of Science and Letters. The lectures analyze different aspects of central banking but the questions raised could also be relevant for other institutions in society. The key words are trust and confidence. A prerequisite for trust and confidence is keeping promises. But in a modern open society, the central bank must do more. It must also be transparent and explain its functions and decisions to the public. Yet there is no point

