CURRENCIES,
CAPITAL, AND
CENTRAL BANK
BALANCES



The Hoover Institution gratefully acknowledges the following individuals and foundations for their significant support of the **Working Group on Economic Policy** and this publication:

Lynde and Harry Bradley Foundation
Preston and Carolyn Butcher
Stephen and Sarah Page Herrick
Michael and Rosalind Keiser
Koret Foundation
William E. Simon Foundation
John A. Gunn and Cynthia Fry Gunn

CURRENCIES, CAPITAL, AND CENTRAL BANK BALANCES

EDITED BY

JOHN H. COCHRANE
KYLE PALERMO
JOHN B. TAYLOR

CONTRIBUTING AUTHORS

Adrien Auclert Raphael Bostic
Peter R. Fisher Esther L. George
Oleg Itskhoki Robert S. Kaplan
Lorie K. Logan Prachi Mishra
Jonathan D. Ostry Monika Piazzesi
Randal K. Quarles Raghuram Rajan
Martin Schneider George P. Shultz
Paul Tucker Kevin Warsh

Sebastian Edwards Gita Gopinath Mickey D. Levy William Nelson Charles I. Plosser Thomas J. Sargent John B. Taylor John C. Williams

WITH ADDITIONAL DISCUSSANTS



With its eminent scholars and world-renowned library and archives, the Hoover Institution seeks to improve the human condition by advancing ideas that promote economic opportunity and prosperity, while securing

and safeguarding peace for America and all mankind. The views expressed in its publications are entirely those of the authors and do not necessarily reflect the views of the staff, officers, or Board of Overseers of the Hoover Institution.

www.hoover.org

Hoover Institution Press Publication No. 697

Hoover Institution at Leland Stanford Junior University, Stanford, California 94305-6003

Copyright © 2019 by the Board of Trustees of the Leland Stanford Junior University All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission of the publisher and copyright holders.

For permission to reuse material from *Currencies, Capital, and Central Bank Balances*, ISBN 978-0-8179-2234-4, please access www.copyright.com or contact the Copyright Clearance Center, Inc. (CCC), 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400. CCC is a not-for-profit organization that provides licenses and registration for a variety of uses.

Efforts have been made to locate original sources, determine the current rights holders, and, if needed, obtain reproduction permissions. On verification of any such claims to rights in the articles reproduced in this book, any required corrections or clarifications will be made in subsequent printings/editions.

Hoover Institution Press assumes no responsibility for the persistence or accuracy of URLs for external or third-party Internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate

First printing 2019

26 25 24 23 22 21 20 19 9 8 7 6 5 4 3 2 1

Manufactured in the United States of America

The paper used in this publication meets the minimum requirements of the American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI/NISO Z39.48-1992. ⊚

Cataloging-in-Publication Data is available from the Library of Congress.

ISBN-13: 978-0-8179-2234-4 (cloth) ISBN-13: 978-0-8179-2236-8 (EPUB)

ISBN-13: 978-0-8179-2237-5 (Mobipocket)

ISBN-13: 978-0-8179-2238-5 (PDF)

Contents

ix

Preface

	• • • • • • • • • • • • • • • • • • • •	
	PART I	
ONE	International Rules of the Monetary Game	3
	Prachi Mishra and Raghuram Rajan	
	DISCUSSANT: Thomas J. Sargent	
	GENERAL DISCUSSION: John H. Cochrane, Michael D. Bordo,	
	Sebastian Edwards, Gita Gopinath, Paul Tucker,	
	Raghuram Rajan	
TWO	Dollar Dominance in Trade and Finance	53
	Gita Gopinath	
	DISCUSSANT: Adrien Auclert	
	GENERAL DISCUSSION: Juliane Begenau, Michael D. Bordo,	
	Juhi Dhawan, Robert Hall, Michael Melvin, Robert Heller,	
	Jim Dorn, John Smyth, John H. Cochrane, Andrew T. Levin,	
	Paul Tucker, George P. Shultz, Gita Gopinath	
SYMPOSIUI	V ON	
Capital Flo	ws, the IMF's Institutional View and Alternatives	83
	Introduction	83
	George P. Shultz	
THREE	Managing Capital Flows: Toward a Policy Maker's	
	Vade Mecum	87
	Jonathan D. Ostry	
	,	

vi Contents

FOUR	The IMF's Institutional View: A Critique Sebastian Edwards	97
FIVE	Capital Flows, the IMF's Institutional View, and an Alternative John B. Taylor GENERAL DISCUSSION: Robert Hall, John H. Cochrane, George P. Shultz, John B. Taylor, Jonathan D. Ostry	105
	•••••	
	PART II	
SIX	Monetary Policy with a Layered Payment System Monika Piazzesi and Martin Schneider DISCUSSANT: Oleg Itskhoki GENERAL DISCUSSION: Michael D. Bordo, Arvind Krishnamurthy, Robert Hall, Jeff Lacker, Martin Schneider	125
SEVEN	Liquidity Regulation and the Size of the Fed's	
	Balance Sheet Randal K. Quarles DISCUSSANT: Paul Tucker GENERAL DISCUSSION: Andrew T. Levin, Charlie Siguler, Donna Borak, Sebastian Edwards, William Nelson, Michael D. Bordo, Randal K. Quarles, Paul Tucker	153
SYMPOSIUM	л on	
The Future	e of Central Bank Balance Sheets	193
	Introduction Kevin Warsh	193
EIGHT	Normalizing the Federal Reserve's Balance Sheet and Policy Implementation Lorie K. Logan	197
NINE	Get Up Off the Floor William Nelson	213
TEN	The Fed's Balance Sheet Strategy: What Now? Mickey D. Levy	221

Contents vii

ELEVEN	Should the Fed 'Stay Big' or 'Slim Down'? Peter R. Fisher GENERAL DISCUSSION: John H. Cochrane, Andrew Levin,	237
	Kevin Warsh, Lorie K. Logan, William Nelson, Mickey D. Levy, Peter Fisher	
	•••••	
	PART III	
TWELVE	Anchoring Inflation Expectations in a Low	262
	R-star World John C. Williams	263
	GENERAL DISCUSSION: Robert Heller, John C. Williams,	
	Sebastian Edwards, Beat Siegenthaler	
SYMPOSIUM		
Monetary	Policy and Reform in Practice	279
	Introduction	279
	Charles I. Plosser	
THIRTEEN	Monetary Policy and Reform in Practice	283
	Esther L. George	
FOURTEEN	US Economic Conditions and Monetary	
	Policy Considerations	291
	Robert S. Kaplan	204
FIFTEEN	Remarks	301
	Raphael Bostic GENERAL DISCUSSION: Paul Tucker, Mickey D. Levy,	
	Michael D. Bordo, William Nelson, Andrew Filardo,	
	Charles I. Plosser, Robert Kaplan, Esther L. George,	
	Raphael Bostic	
	About the Contributors and Discussants	319
	About the Hoover Institution's Working Group on	
	Economic Policy	333
	Index	335

Preface

John H. Cochrane, Kyle Palermo, and John B. Taylor

This book focuses on two related monetary policy issues that are crucial to the future of central banks and the entire international monetary system, which includes over 150 central banks. We are pleased and grateful that top central bank officials from the United States—including five current and three former members of the Federal Open Market Committee—and from other countries joined the discussion and contributed to this book, along with monetary economists from academia and private financial institutions. There is much to be learned from the formal papers, the lead discussants, the policy panels, and the many questions and comments which are included in this book

The first policy issue concerns the international flow of money and capital and the resulting behavior of exchange rates—the price of one money, or currency, in terms of another. The key policy questions are whether capital flow management—government restrictions on cross-border loans and investments—can reduce harmful capital and exchange rate volatility; whether any such potential stabilization is worth its cost in market distortions, financial repression, and increased instability as people try to guess the actions of capital flow managers; and whether alternatives such as better and more rules-based international coordination of monetary policies can alleviate some of the conditions that lead countries to wish to control capital.

x Preface

The second policy issue concerns the size of central bank balance sheets and their potential role as a separate monetary policy instrument beyond the policy interest rate set by central banks. A central bank balance sheet increases when the central bank purchases assets (such as government bonds or foreign currency bonds), borrows from commercial banks, and gives out central bank reserves in return. The first key policy question is whether central bank balance sheets should stay large or whether they should be reduced, either to the minimum—in which the economy remains satiated in interest-paying reserves—or to a smaller level, through which interest rates are then market-determined given the central bank's supply of non-interest-bearing reserves. The second key policy question is whether a radical expansion of the balance sheet should become a standard part of monetary policy any time short-term rates are constrained by the lower bound, whether such expansion should be reserved to an emergency action in case of financial panic, or whether it should be eschewed altogether.

The two issues interact because central bank balance sheet operations can affect exchange rates and capital flows. Moreover, the issues are currently on the policy agenda. The G20 Eminent Persons Group will make recommendations about policy toward capital flow later this year. The G20 central banks and finance ministries are then to follow up with decisions and implementation. The Fed is in the process of making key decisions about the ultimate size of its balance sheet, which will help set the stage for decisions at other central banks in the future. This book, like the policy conference at the Hoover Institution upon which it is based, aims to examine relevant research, debate the policy options, and present theory-based and fact-based analyses with which policy makers can make informed decisions on these and related issues.

Preface xi

CAPITAL FLOWS AND CURRENCIES IN THE INTERNATIONAL MONETARY SYSTEM

The book begins with two chapters on the international monetary system, which lead into an in-depth discussion of current IMF policy and policy advice relating to international capital flows. In *International Rules of the Monetary Game*, Raghuram Rajan, former governor of the Reserve Bank of India, in joint research with Prachi Mishra, develops a framework for international policy evaluation that shows the benefits of a rules-based system. He argues that monetary rules can prevent central banks' unconventional monetary policies from adversely affecting other countries and thereby interfering with the international system. In commenting on the paper, Tom Sargent stresses the broader reasons for a rules-based monetary system based on his own extensive research.

In *Dollar Dominance in Trade and Finance*, Gita Gopinath shows how private international financial intermediaries tend to focus on certain currencies, with the US dollar currently the dominant currency of choice. The dollar is often used for invoicing even when trade is between two non-US entities. Foreign as well as American banks often take dollar deposits and make dollar loans. The theoretical explanation is built on the idea that the dollar can serve as both a unit of account and a store of value and that attempts by countries to intervene to obtain such an advantage for their own currency often fail. In his comments, Adrien Auclert shows that there are many other predictions and ways to test the model.

With these two papers as general background, Jonathan Ostry, Sebastian Edwards, and John Taylor present their views on *Capital Flows, the IMF's Institutional View, and Alternatives*, chaired by George Shultz, who began the discussion by offering the view that, "The problem isn't capital flows; the problem is the central banks creating more money than is useful in their own countries, and it's

xii Preface

slopping around." Ostry argues in favor of the IMF's Institutional View in which capital flow management measures artfully restrict the flow of capital across international borders. Taylor raises concerns about such restrictions and argues in favor of a rules-based international system along the lines advocated by Rajan. Edwards, based in part on the experience in Chile, notes that the transition to a world with open capital markets may take time. His bottom line is that the IMF should urge countries to "aim toward having no controls." Of course, there may be dangers getting there," he continues, "but we will help you deal with those problems."

CENTRAL BANK BALANCE SHEETS AND FINANCIAL STABILITY

In Monetary Policy with a Layered Payment System, Monika Piazzesi and Martin Schneider reconcile the standard idea that, faced with negative nominal rates on reserves or deposits, banks or individuals will swap them for currency with the fact that rates on both have, in practice, been negative. They offer a model that treats reserves and deposits as mechanisms for overcoming financial frictions, with banks and end users valuing low-return assets because they raise collateral ratios and offer a convenient medium of exchange, respectively. Discussant Oleg Itskhoki takes a deep dive into Piazzesi and Schneider's model, explaining the many underlying details of what he calls a "rich and insightful paper" and exploring some questions about its underlying details and opportunities to empirically test its assumptions.

In his chapter on *Liquidity Regulation and the Size of the Fed's Balance Sheet*, Randal Quarles, vice chairman for supervision of the Federal Reserve Board of Governors, looks at how bank demand for reserves will affect the size of the Fed's post-normalization balance sheet, which includes assets that banks use to meet liquidity coverage ratio (LCR) requirements. Discussant Paul Tucker follows

Preface xiii

with a call for policy makers to approach central and private banks through the lens of a Money-Credit Constitution which binds them to the goal of ensuring a secure monetary system. He also proposes a potential solution to the core problem raised by Quarles about the quantity of reserves demanded by banks: let banks decide for themselves under a voluntary reserves averaging program similar to that used by the Bank of England before the financial crisis.

Lorie Logan, Peter Fisher, Mickey Levy, and William Nelson then weigh in on *The Future of Central Bank Balance Sheets* chaired by Kevin Warsh who urged panelists to "question the prudence of unconventional policies' standing in the central bank's conventional toolkit," and to be "candid about our choices and humble about what we know of the Fed's incomplete experiment, even a decade later." There are two basic possibilities. First, the Fed could aim for a balance sheet in which reserves do not pay interest and the supply of reserve balances is low enough that the interest rate is determined by the demand and supply of reserves. Sometimes called the corridor approach, it's what the Fed used for decades before the global financial crisis. Second, the Fed could aim for a supply of reserves well above the quantity demanded at a zero rate and then set the interest rate through interest on excess reserves. This method is sometimes called a floor system.

Logan, with current experience at the New York Fed trading desk, argues for the second view, emphasizing that markets would be less volatile if the Fed sticks to a floor system. Fisher, who used to run the New York Fed trading desk, disagrees, saying that operational considerations for staying "big" are not convincing and that the rationale is orthogonal to the case made for going big in the first place. Nelson, who is familiar with operational considerations from his time at the Federal Reserve Board, argues in favor of the first approach. Levy notes the "economic and political risks of maintaining an outsized balance sheet" and concludes, "Of particular

xiv Preface

concern is the Fed's exposure to Congress's dysfunctional budget and fiscal policy making in the face of mounting government debt and debt service costs."

MONETARY REFORM AS SEEN FROM THE FOMC

In the symposium on *Monetary Policy and Reform in Practice*, one former and three current Federal Reserve Bank presidents take this volume into practical territory. Moderator Charles Plosser kicks off the discussion by reminding us that this was a chance for "reallife policy makers" to weigh in on challenges facing the Fed today, and for audience members to "prod them with some questions and see what their reactions will be." Kansas City Fed President Esther George discusses our very different and often-paradoxical post-crisis world in which low rates, a big Fed balance sheet, deepening fiscal deficits, and structural drags on long-run growth prospects are matched by an economy growing above trend at full employment. "Whatever the 'new normal' is, monetary policy is not yet there," she explains, warning that the Fed must use today's good economic times to resolve uncertainties about responses to future crises while shoring up our financial system.

Robert Kaplan of the Dallas Fed zeroes in on a number of the structural issues raised in George's paper. The Dallas Fed, he explains, forecasts a growth climate that is much less rosy when we zoom out to the medium term. He surveys some of the trends it is watching most closely, including declining labor force participation, declining education and skills, high government debt and unfunded liabilities, and how these trends will affect Fed tools such as the balance sheet and macroprudential policy.

Atlanta Fed President Raphael Bostic focuses on challenges to implementing policy without complete data. It's crucial that the Fed not repeat mistakes it made prior to the 2008 financial crisis when it missed financial red flags because it wasn't closely monitoring the

Preface xv

housing market, he explains. The Atlanta Fed is working to reduce the risks of missing warning signs in the future by collecting "onthe-ground" intelligence from business leaders, public officials, and community groups.

LONG-RUN POLICY FRAMEWORKS

Federal Reserve Bank of New York President John Williams leans into the theme of this volume with a discussion of how policy makers can best maintain price stability and anchored inflation expectations—not this year or next year, but under a long-run policy framework. Focusing on the challenges policy makers face in pursuing these goals in a persistently low-rate environment, Williams explores some of the global downward pressures on r-star and where he thinks the rate will go in the future. He caps his paper off with an even bigger-picture discussion of how central banks should approach policy, not as a reaction to short-run problems, but under a big-picture framework that focuses on long-run goals and incorporates a healthy dose of analysis, dialogue, and weighing of different options.