



National
Bureau of
Economic
Research

Studies in
Income
and
Wealth
Volume 69

International Trade in Services and Intangibles in the Era of Globalization

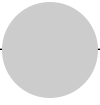
Edited by
Marshall Reinsdorf and
Matthew J. Slaughter

International Trade in Services and Intangibles in the Era of Globalization



Studies in Income and Wealth
Volume 69

National Bureau of Economic Research
Conference on Research in Income and Wealth



International Trade in Services and Intangibles in the Era of Globalization

Edited by

**Marshall Reinsdorf and
Matthew Slaughter**

The University of Chicago Press

Chicago and London

MARSHALL REINSORF is senior research economist at the U.S. Department of Commerce, Bureau of Economic Analysis. MATTHEW SLAUGHTER is professor of international economics at the Tuck School of Business at Dartmouth College, and a research associate of the National Bureau of Economic Research.

The University of Chicago Press, Chicago 60637
The University of Chicago Press, Ltd., London
© 2009 by the National Bureau of Economic Research
All rights reserved. Published 2009
Printed in the United States of America

18 17 16 15 14 13 12 11 10 09 1 2 3 4 5
ISBN-13: 978-0-226-70959-8 (cloth)
ISBN-10: 0-226-70959-0 (cloth)

Library of Congress Cataloging-in-Publication Data

International flows of invisibles : trade in services and intangibles in the era of globalization / edited by Marshall Reinsdorf and Matthew Slaughter.

p. cm. — (Income and wealth ; vol. 69)

Papers from the conference entitled International Service Flows convened under the auspices of the Conference on Research in Income and Wealth and the National Bureau of Economic Research, held in Bethesda, Maryland on April 28–29, 2006.

Includes bibliographical references and index.

ISBN-13: 978-0-226-70959-8 (cloth : alk. paper)

ISBN-10: 0-226-70959-0 (cloth : alk. paper) 1. Service industries—Congresses. 2. International trade—21st century—Congresses. 3. Contracting out—Congresses. I. Reinsdorf, Marshall B. II. Slaughter, Matthew J. (Matthew Jon) III. Series.

HD9980.5.I58 2009

382'.45—dc22

2008039264

© 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 Z39.48-1992.

National Bureau of Economic Research

Officers

John Clarkeson, *chairman*
Kathleen B. Cooper, *vice-chairman*
James M. Poterba, *president and chief executive officer*
Alterra Milone, *corporate secretary*

Robert Mednick, *treasurer*
Kelly Horak, *controller and assistant corporate secretary*
Gerardine Johnson, *assistant corporate secretary*

Directors at Large

Peter C. Aldrich	Jessica P. Einhorn	Alicia H. Munnell
Elizabeth E. Bailey	Mohamed El-Erian	Rudolph A. Oswald
Richard B. Berner	Jacob A. Frenkel	Robert T. Parry
John H. Biggs	Judith M. Gueron	James M. Poterba
John S. Clarkeson	Robert S. Hamada	John S. Reed
Don R. Conlan	Karen N. Horn	Marina v. N. Whitman
Kathleen B. Cooper	John Lipsky	Martin B. Zimmerman
Charles H. Dallara	Laurence H. Meyer	
George C. Eads	Michael H. Moskow	

Directors by University Appointment

George Akerlof, <i>California, Berkeley</i>	Joel Mokyr, <i>Northwestern</i>
Jagdish Bhagwati, <i>Columbia</i>	Andrew Postlewaite, <i>Pennsylvania</i>
Glen G. Cain, <i>Wisconsin</i>	Uwe E. Reinhardt, <i>Princeton</i>
Ray C. Fair, <i>Yale</i>	Nathan Rosenberg, <i>Stanford</i>
Franklin Fisher, <i>Massachusetts Institute of Technology</i>	Craig Swan, <i>Minnesota</i>
Mark Grinblatt, <i>California, Los Angeles</i>	David B. Yoffie, <i>Harvard</i>
Saul H. Hymans, <i>Michigan</i>	Arnold Zellner (Director Emeritus), <i>Chicago</i>
Marjorie B. McElroy, <i>Duke</i>	

Directors by Appointment of Other Organizations

Jean-Paul Chavas, <i>American Agricultural Economics Association</i>	William W. Lewis, <i>Committee for Economic Development</i>
Gail D. Fosler, <i>The Conference Board</i>	Robert Mednick, <i>American Institute of Certified Public Accountants</i>
Martin Gruber, <i>American Finance Association</i>	Angelo Melino, <i>Canadian Economics Association</i>
Timothy W. Guinnane, <i>Economic History Association</i>	Harvey Rosenblum, <i>National Association for Business Economics</i>
Arthur B. Kennickell, <i>American Statistical Association</i>	John J. Siegfried, <i>American Economic Association</i>
Thea Lee, <i>American Federation of Labor and Congress of Industrial Organizations</i>	

Directors Emeriti

Andrew Brimmer	Franklin A. Lindsay	Eli Shapiro
Carl F. Christ	Paul W. McCracken	Arnold Zellner
George Hatsopoulos	Peter G. Peterson	
Lawrence R. Klein	Richard N. Rosett	

Relation of the Directors to the Work and Publications of the National Bureau of Economic Research

1. The object of the NBER is to ascertain and present to the economics profession, and to the public more generally, important economic facts and their interpretation in a scientific manner without policy recommendations. The Board of Directors is charged with the responsibility of ensuring that the work of the NBER is carried on in strict conformity with this object.

2. The President shall establish an internal review process to ensure that book manuscripts proposed for publication DO NOT contain policy recommendations. This shall apply both to the proceedings of conferences and to manuscripts by a single author or by one or more co-authors but shall not apply to authors of comments at NBER conferences who are not NBER affiliates.

3. No book manuscript reporting research shall be published by the NBER until the President has sent to each member of the Board a notice that a manuscript is recommended for publication and that in the President's opinion it is suitable for publication in accordance with the above principles of the NBER. Such notification will include a table of contents and an abstract or summary of the manuscript's content, a list of contributors if applicable, and a response form for use by Directors who desire a copy of the manuscript for review. Each manuscript shall contain a summary drawing attention to the nature and treatment of the problem studied and the main conclusions reached.

4. No volume shall be published until forty-five days have elapsed from the above notification of intention to publish it. During this period a copy shall be sent to any Director requesting it, and if any Director objects to publication on the grounds that the manuscript contains policy recommendations, the objection will be presented to the author(s) or editor(s). In case of dispute, all members of the Board shall be notified, and the President shall appoint an ad hoc committee of the Board to decide the matter; thirty days additional shall be granted for this purpose.

5. The President shall present annually to the Board a report describing the internal manuscript review process, any objections made by Directors before publication or by anyone after publication, any disputes about such matters, and how they were handled.

6. Publications of the NBER issued for informational purposes concerning the work of the Bureau, or issued to inform the public of the activities at the Bureau, including but not limited to the NBER Digest and Reporter, shall be consistent with the object stated in paragraph 1. They shall contain a specific disclaimer noting that they have not passed through the review procedures required in this resolution. The Executive Committee of the Board is charged with the review of all such publications from time to time.

7. NBER working papers and manuscripts distributed on the Bureau's web site are not deemed to be publications for the purpose of this resolution, but they shall be consistent with the object stated in paragraph 1. Working papers shall contain a specific disclaimer noting that they have not passed through the review procedures required in this resolution. The NBER's web site shall contain a similar disclaimer. The President shall establish an internal review process to ensure that the working papers and the web site do not contain policy recommendations, and shall report annually to the Board on this process and any concerns raised in connection with it.

8. Unless otherwise determined by the Board or exempted by the terms of paragraphs 6 and 7, a copy of this resolution shall be printed in each NBER publication as described in paragraph 2 above.

Contents

Prefatory Note	ix
Introduction	1
Marshall Reinsdorf and Matthew Slaughter	
I. CHALLENGES IN MEASURING TRADE IN SERVICES	
1. Measuring International Trade in Services	27
Robert E. Lipsey	
<i>Comment:</i> J. David Richardson	
2. Improved Measures of U.S. International Services: The Cases of Insurance, Wholesale and Retail Trade, and Financial Services	75
Maria Borgia	
II. R&D AND INTELLECTUAL PROPERTY	
3. The Effect of Taxes on Royalties and the Migration of Intangible Assets Abroad	111
John Mutti and Harry Grubert	
4. Measuring Payments for the Supply and Use of Intellectual Property	139
Carol A. Robbins	
<i>Comment:</i> C. Fritz Foley	

- 5. R&D Exports and Imports: New Data and Methodological Issues** 175
Francisco Moris
Comment: Wolfgang Keller
- 6. International Trade in Motion Picture Services** 203
Gordon H. Hanson and Chong Xiang
Comment: Phillip McCalman

III. OFFSHORING OF SERVICES

- 7. Does Service Offshoring Lead to Job Losses? Evidence from the United States** 227
Mary Amiti and Shang-Jin Wei
Comment: Robert C. Feenstra
- 8. Outsourcing and Imported Services in BEA's Industry Accounts** 247
Robert E. Yuskavage, Erich H. Strassner, and Gabriel W. Medeiros
Comment: J. Bradford Jensen
- 9. We Can Work It Out: The Globalization of ICT-Enabled Services** 289
Desirée van Welsum and Xavier Reif
Comment: Lori G. Kletzer

IV. TOPICS IN THE MEASUREMENT OF PRICE AND PRODUCTIVITY

- 10. The Contribution of Multinational Corporations to U.S. Productivity Growth, 1977–2000** 331
Carol Corrado, Paul Lenger mann, and Larry Slifman
Comment: Raymond J. Mataloni Jr.
- Contributors 365
Author Index 369
Subject Index 373

Prefatory Note

This volume contains revised versions of most of the papers and discussions presented at the Conference on Research in Income and Wealth entitled “International Service Flows,” held in Bethesda, Maryland on April 28–29, 2006.

Funds for the Conference on Research in Income and Wealth are supplied by the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Census Bureau, the Federal Reserve Board, the Internal Revenue Service, and Statistics Canada. We are indebted to these organizations for their support.

We thank Marshall Reinsdorf and Matthew Slaughter, who served as conference organizers and editors of the volume.

Executive Committee

John M. Abowd	Ron Jarmin
Susanto Basu	John Bradford Jensen
Ernst R. Berndt	Lawrence Katz
Carol A. Corrado	J. Steven Landefeld
Robert C. Feenstra	Brent Moulton
John Greenlees	Thomas B. Petska
John C. Haltiwanger	Mark J. Roberts
Michael J. Harper	Matthew Shapiro
Charles R. Hulten (Chair)	David W. Wilcox