

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)



## *Doing Capitalism in the Innovation Economy*

The Innovation Economy begins with discovery and culminates in speculation. Over some 250 years, economic growth has been driven by successive processes of trial and error: upstream exercises in research and invention, and downstream experiments in exploiting the new economic space opened by innovation. Drawing on his professional experiences, William H. Janeway provides an accessible pathway for readers to appreciate the dynamics of the Innovation Economy. He combines personal reflections from a career spanning forty years in venture capital with the development of an original theory of the role of asset bubbles in financing technological innovation and of the role of the state in playing an enabling role in the innovation process. Today, with the state frozen as an economic actor and access to the public equity markets only open to a minority, the Innovation Economy is stalled; learning the lessons from this book will contribute to its renewal.

WILLIAM H. JANEWAY has been an active venture capital investor for forty years. In particular, he built and led the Warburg Pincus Technology Investment team that provided the financial backing to a series of companies which made critical contributions to building the internet economy. He received his Ph.D. in Economics from Cambridge, where he founded the Cambridge Endowment for Research in Finance, and is a Teaching Visitor in the Princeton Economics Department. He is a member of the Board of the Social Science Research Council and of the Institute for New Economic Thinking.

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

---

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

# Doing Capitalism in the Innovation Economy

Markets, Speculation and the State

WILLIAM H. JANEWAY



CAMBRIDGE  
UNIVERSITY PRESS

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town,  
Singapore, São Paulo, Delhi, Mexico City

Cambridge University Press

The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9781107031258](http://www.cambridge.org/9781107031258)

© William H. Janeway 2012

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 2012

Printed and Bound in Great Britain by the MPG Books Group

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

*Library of Congress Cataloguing in Publication data*

Janeway, William H.

Doing capitalism in the innovation economy : markets, speculation and the state / William H. Janeway.

pages cm

Includes bibliographical references and index.

ISBN 978-1-107-03125-8

1. Venture capital. 2. Capitalism. I. Title.

HG4751.J37 2012

332'.04154—dc23 2012019852

ISBN 978-1-107-03125-8 Hardback

Cambridge University Press has 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.

Cambridge University Press

978-1-107-03125-8 - *Doing Capitalism in the Innovation Economy: Markets, Speculation and the State*

William H. Janeway

Frontmatter

[More information](#)

“Bill Janeway, a key creator of modern venture capital, tells the amazing story of the intersection of economics and innovation. This book is essential to anyone who wants to understand technology and how its creation will be financed for decades to come.”

*Marc Andreessen, co-creator of the Internet browser, co-founder of Netscape and Andreessen Horowitz*

“Many people understand the political economic forces of our world. Add an understanding also of the financial forces at work in the modern economy and the list of wise people diminishes dramatically. Bill Janeway understands all three and writes about their interaction with great insight built on theoretical depth and practical experience. Read this book and your eyes will open to our current crisis and our prospect for the future.”

*Bill Bradley, former US Senator*

“Written with flair and telling first-hand experience, William Janeway’s *Doing Capitalism* is a terrific introduction to the world of venture capital. Along the way it is an insightful critique of economic models based on ‘representative rational agents’ and unlimited liquidity, a clarification of why continuous market models don’t grasp the discontinuous world of finance, an explanation of the work irrationality and ‘bubbles’ do in technological innovation, and a call to recognize the necessary intersection of politics and economics. Both a ‘must-read’ and a fun read.”

*Craig Calhoun, Director of the London School of Economics*

“When the despair of troubled economic conditions compels us to yearn for a better time, our fantasies gravitate to a savior called innovation. To discern whether such yearning attracts us to a mirage or to a sound basis for hope requires a discriminating and experienced mind. I know of no better mind in this realm than Bill Janeway, whom Hyman Minsky called a theorist–practitioner of financial economics. He has spent 40 years at the forefront of venture capital and financial economics. He takes us beyond mechanical details and reveals the deeper processes and interactions between state, market and finance that can foster and/or inhibit technological progress. *Doing Capitalism* leaves the neoclassical economic framework in tatters. It is a historically grounded and sophisticated look at how our society must rise to the challenges of collective action under radical uncertainty and integrate institutions on many levels to bring about the betterment of our human condition. This fine work will deepen your understanding of what innovation entails and impart a vision that

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

will both surprise you, and inspire you, to move beyond your prejudices, whatever your political persuasion.”

*Rob Johnson, Executive Director of the Institute for  
New Economic Thinking*

“This is, quite simply, the only book I have read that does justice to the necessary interplay between the market of real goods and services, speculative financial markets, and the state. It is wise, insightful, and rich with both economic history and the personal stories of a brilliant investor. If you want to understand the innovation economy, go no farther: read this book.”

*Tim O'Reilly, Founder and CEO O'Reilly Media*

“A powerful reinterpretation of capitalism, seen from above and lived from inside, by someone who is as much at home in the practical world of innovation and finance as in the abstract world of economic theory. Janeway's book is a fascinating double dip from theory to reality and back. Indispensable for anyone in finance or academia, in policy or politics, wanting to act intelligently in the post-bubble world and beyond.”

*Carlota Perez, Professor of Technology and Socio-Economic  
Development, Tallinn University of Technology, Estonia, and LSE,  
Cambridge and Sussex Universities in England*

“This is a masterful historical and conceptual analysis of the Three Player Game between the state, private entrepreneurial innovation and financial capitalism. The state has a key role in funding scientific research that leads to innovation. Amply funded by financial capitalism, innovation is a source of long-term growth. But speculative funding of innovation is also associated with asset and credit bubbles that end up in financial crashes. Then, following Keynes, the state has to intervene again to limit the economic and financial fallout from such crashes. A Minsky-inspired synthesis of the financial excesses of Schumpeterian creative destruction, this book should be required reading for all.”

*Nouriel Roubini, Professor of Economics at New York University  
and Chairman of Roubini Global Economics*

“A revelatory exploration of the complex dynamics underlying the innovation economy and the inherent roles of speculation and waste as experienced by one of the great venture capitalists and political/economic thinkers of our age. This book provides a powerful framework for dealing

Cambridge University Press

978-1-107-03125-8 - *Doing Capitalism in the Innovation Economy: Markets, Speculation and the State*

William H. Janeway

Frontmatter

[More information](#)

---

with the economic challenges we are facing today. It couldn't have come at a better time!"

*John Seely Brown, Former Chief Scientist of Xerox Corp  
and Director of its Palo Alto Research Center (PARC)*

"I have never held orthodox financial theory in high regard. I do not find it useful. It presumes a stability and certainty of knowing about the future that is both wrong and dangerously misleading. Bill Janeway can see that. He is both a practitioner and a financial theorist and his book, *Doing Capitalism*, is serious new economic thinking on the process of innovation. This is a realm where standard economic treatments do not get to the heart of the matter – dealing with radical uncertainty. Janeway applies keen insights from his experience as a venture capitalist and creates a vision of the interaction between governments, financiers, and firms that shows what institutions society must develop to foster innovation. I believe that *Doing Capitalism* will help all of us, whether academics, private sector leaders, or government officials, to see beyond shallow political dogma and move to a deeper understanding of challenges of technological advance."

*George Soros, Chairman of Soros Fund Management*

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

---



Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

---

*In memoriam, Ferdinand Eberstadt and Hyman Minsky*

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

---

Contents

<i>List of figures and table</i>	<i>page</i> xii
<i>Acknowledgements</i>	xiii
Introduction: the Innovation Economy	1
<b>Part I: Learning the game</b>	<b>11</b>
1 Apprenticeship	13
2 Discovering computers	34
3 Investing in ignorance	52
<b>Part II: Playing the game</b>	<b>71</b>
4 The financial agent	73
5 The road to BEA	98
6 Apotheosis	117
<b>Part III: Understanding the game: the role of bubbles</b>	<b>133</b>
7 The banality of bubbles	135
8 Explaining bubbles	156
9 The necessity of bubbles	181
<b>Part IV: Understanding the game: the role of the state</b>	<b>209</b>
10 Where is the state?	211
11 “The failure of market failure”	232
12 Tolerating waste	256
Coda	273
<i>Bibliography</i>	284
<i>Index</i>	299
	xi

# Figures and table

## Figures

7.1	Stock prices for RCA, 1926–1932, VERITAS Software, 1997–2003 and BEA Systems, 1997–2003	<i>page</i> 136
9.1	The recurring sequence in the relationship between financial capital (FK) and production capital (PK)	205

## Table

9.1	Five successive technological revolutions, 1770s–2000s	204
-----	--	-----

## Acknowledgements

This book would not have been conceived, let alone written, were it not for the goading and guidance of Richard Sennett. In the spring of 2009, Richard suggested that I assemble all my various writings over the near-forty years since the submission of my doctoral thesis into a “dossier” (his term). He agreed to read it through and offer his opinion as to whether a book might be developed from the assortment of published articles, private notes and more or less public lectures. Given his own extraordinary ability to render abstractions of experience into compelling literary form, as demonstrated in his many works that mediate between acute observation of how people live and work and sensitive interpretation of how they represent their living and working, this was not a proposal that I could refuse.

Richard’s oversight of my first drafts brought both encouragement and discipline to the project. As a book did, indeed, begin to emerge, I began to seek comments from a range of scholars. First and repeatedly relevant in their responses were Barry Eichengreen and Carlota Perez. From early days, they understood my purpose and endeavored to help me keep control of a manuscript that threatened to veer in its later chapters from strategic analysis towards commentary on current events. And Carlota Perez has generously granted permission for reproduction of the graphics that appear as Figure 9.1 and Table 9.1.

As the book began to assume its final shape, constructive criticism was offered by Christopher Beaman, Mark Blyth, Craig Calhoun, Roman Frydman, Ira Katznelson, Henry Kressel, Paul Ricci, Jose Scheinkman, Til Schuermann and Catharine Stimpson. From their diverse domains of knowledge and analytical approaches, I have been privileged to receive questions, corrections and alerts, all of which have served to focus my efforts and the book’s arguments. I must thank D’Maris Coffman of the Centre for Financial History at Newnham College for her contribution to my understanding of financial history generally and, specifically, for her aid in constructing Figure 7.1.

Cambridge University Press

978-1-107-03125-8 - Doing Capitalism in the Innovation Economy: Markets, Speculation and the State

William H. Janeway

Frontmatter

[More information](#)

In parallel with the process of writing and rewriting the manuscript, I refined ways of communicating its narrative and analysis through two different styles of rhetoric. In particular, the discussion of the evolving role of venture capital in Chapter 4 reflects lectures contributed to the courses in Entrepreneurial Finance taught by Professor Antoinette Schoar at MIT Sloan School of Management and by Professor Alexander Ljungqvist at NYU Stern School of Business and Cambridge Judge Business School. The broader themes developed in the second half of the book variously arose in their nascent form as semi-formal presentations at each of two distinctive gatherings of people engaged in pushing the state of the art in information technology and deeply interested in the consequences thereof. I am very much indebted to Tim O'Reilly for my many opportunities to participate in the "FooCamp" and "SciFoo" gatherings that he originated and inspires, and to Mark Anderson for our repeated public conversations at his annual Future in Review conferences.

Closer to home, I and this book have been the beneficiary of discussions with my wife Weslie, my son Charles, and my brother Mike – discussions which in all three cases preceded by years my commitment to the writing and carried through to its completion. My thanks to them for their never unquestioning support is boundless.

Finally, when I circulated a mature manuscript, Chris Harrison of Cambridge University Press signally determined that this hybrid work of a "theorist-practitioner" of entrepreneurial finance could be worthy of publication. His support and sponsorship have been constant. A last word of thanks must go to my more-than-copy editor, Meg Cox, whose representation of the lay reader has contributed to the translation of much that was arcane into common speech.

After all aid solicited, offered and received, I do affirm my own sole responsibility for all errors of commission and omission and interpretation that reside herein.