Human Capital

At a time when governments and policy-makers put so much emphasis on 'the knowledge economy' and the economic value of education, human capital theory has never been more important. However, research in this area is often very technical and therefore not easily accessible to those who wish to use it as a guide to policy formation. This book provides an interface between such research and its potential applications in government, education and business. Reporting on a major research initiative, new findings are presented in a non-technical way on three major themes: measuring the benefits from human capital, applications of the human capital model, and policy interventions. Aimed at academic researchers and professionals concerned with the problems and techniques of human capital theory, it will also be useful for graduate courses on the economics of education as a complement to standard textbooks.

JOOP HARTOG is Professor of Economics at the University of Amsterdam.

HENRIËTTE MAASSEN VAN DEN BRINK is Professor of Economics at the University of Amsterdam.

Human Capital

Advances in Theory and Evidence

edited by

JOOP HARTOG AND Henriëtte maassen van den brink



CAMBRIDGE UNIVERSITY PRESS Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

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 Information on this title: www.cambridge.org/9780521873161

© Cambridge University Press 2007

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 2007

Printed in the United Kingdom at the University Press, Cambridge

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

ISBN 978-0-521-87316-1 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.

Contents

Lis	t of figures	<i>page</i> vii
Lis	t of tables	viii
Notes on contributors		ix
	Prologue Joop Hartog and Henriëtte Maassen van den Brink	1
Par	rt I Measuring the benefits from human capital	
1	What should you know about the private returns to education? Joop Hartog and Hessel Oosterbeek	7
2	The social returns to education Mikael Lindahl and Erik Canton	21
3	Returns to training Edwin Leuven	38
4	Human capital and entrepreneurs Justin van der Sluis and C. Mirjam van Praag	52
5	The effects of education on health Wim Groot and Henriëtte Maassen van den Brink	65
6	Are successful parents the secret to success? <i>Erik Plug</i>	81
Part II Applying and extending the human capital model		
7	Overeducation in the labour market Wim Groot and Henriëtte Maassen van den Brink	101
8	Underinvestment in training? Randolph Sloof, Joep Sonnemans and Hessel Oosterbeek	a 113

v

vi		Contents
9	Human capital and risk Joop Hartog and Simona Maria Bajdechi	134
Part	t III Policy interventions	
10	Using (quasi-)experiments to evaluate education interventions <i>Hessel Oosterbeek</i>	155
11	Unemployment duration: policies to prevent human capital depreciation <i>Bas van der Klaauw</i>	170
12	Can we stimulate teachers to enhance quality? <i>Ib Waterreus</i>	189
13	Optimal tax and education policies and investments in human capital	
	Bas Jacobs	212
	Epilogue: some reflections on educational policies	233
A note on econometrics		236
Index		238

Figures

1.1	Education as an investment	page 8
1.2	Returns to schooling in Europe, men and women	
	(year closest to 1995)	9
1.3	Mincer estimates of return to schooling for the	
	Netherlands, 1962–99 males	13
10.1	Relation between age and training participation	161

Tables

2.1	Summary of cross-country literature on social	
	returns to education	page 30
6.1	Various family background estimates. The effects	
	of parent's income, schooling and IQ on schooling	
	on birth children using the Wisconsin Longitudinal	
	Survey	84
6.2	Various family background estimates. The effects of	
	parent's income, schooling and IQ on schooling on	
	adoptees using the Wisconsin Longitudinal Survey	86
7.1	Average values by characteristics of the survey and	
	characteristics of the sample used in the study	105
8.1	Number of points (gross of investment costs) for	
	employer and worker	117
8.2	Percentages of efficient decisions	120
9.1	Percentage change in income if risk and skew are	
	reduced from sample mean values to zero	145
12.1	Characteristics of different pay criteria	195
12.2	Comparison of the estimated costs (in millions of	
	euros) of an increase in the number of hours worked	
	of a general wage increase and a full-time premium	205

Notes on contributors

Simona Maria Bajdechi received her master's degree in applied statistics and optimizations in 1998 from the University of Bucharest, Romania. In 2005, she got her PhD in economics from the University of Amsterdam with the thesis entitled 'The Risk of Investment in Human Capital'. During her work as a PhD student she was affiliated to the Tinbergen Institute, Amsterdam. Her current research interests focuses on education and wages and income distribution.

Erik Canton wrote his PhD dissertation on 'Economic Growth and Business Cycles' at Tilburg University. Thereafter he joined the CPB Netherlands Bureau for Economic Policy Analysis, and worked mainly in the area of education, R&D, and science policy. As of 2005 he is on detachment at the European Commission, where his activities concentrate on the Renewed Lisbon Strategy. He has also worked as a consultant for the World Bank.

Wim Groot has been Professor of Health Economics at Maastricht University since 1998 and a coordinator of the 'NWO Prioriteitprogramma' SCHOLAR on 'Schooling, Labour Market and Economic Development' at the University of Amsterdam since 1997. His research interests are in the field of health economics and the economics of education. His research is focused on willingness to pay for health and health care, the evolution of health capital, and on the (social) returns to human capital. As author and co-author, he has published more than 120 articles in national and international scientific journals and books. He has written over 200 reports, newspaper articles and columns. Since 2003 he has been writing a column for a national newspaper *Het Financieele Dagblad*.

Joop Hartog studied economics at the Netherlands School of Economics, where he got his PhD in 1978 with a thesis on income distribution. In 1981 he became Professor of Micro-economics at

х

Notes on contributors

the University of Amsterdam. He has published widely on labour economics and the economics of education, co-founded the journal *Labour Economics* and held many visiting positions (including at Stanford, Cornell, Wisconsin and the World Bank). In 2001 he was elected to the Royal Dutch Academy of Sciences.

Bas Jacobs studied economics at the University of Amsterdam where he also did his PhD. His research combines public finance, macroeconomics and labour economics. He has written theoretical papers on optimal labour and capital taxation, optimal subsidies on education, human capital risk, economic growth, and the optimal financing of higher education. In addition, he has done empirical research on productivity growth, technological change and wage inequality. Jacobs has worked at the CPB Netherlands Bureau for Economic Policy Analysis and Tilburg University. He has been a research fellow at the University of Chicago and the European University Institute in Florence. He is assistant professor at the Universities of Amsterdam and Tilburg and member of the Tinbergen Institute and CentER.

Edwin Leuven is a senior researcher at the Department of Economics, University of Amsterdam, where he received his PhD in 2001. Before this he worked for two years as a full-time consultant at the OECD. His main research interests are the economics of education and labour economics. His work has been published in several leading international academic journals.

Mikael Lindahl is Assistant Professor in Economics at the Swedish Institute for Social Research (SOFI), Stockholm University. He is also a research fellow at IZA, Bonn. After receiving his PhD in economics from Stockholm University in 2000, he spent three years as a postdoctoral researcher at SCHOLAR, University of Amsterdam. His main research interests are in the areas of empirical labour economics and the economics of education, and his work has been published in several international academic journals including the *Journal of Economic Literature*, the *Journal of Human Resources*, the *Quarterly Journal of Economics* and the *Scandinavian Journal of Economics*.

Henriëtte Maassen van den Brink is Professor of Economics at the Department of Economics and Econometrics of the University of Amsterdam. She is the Scientific Programme Director of SCHOLAR, Notes on contributors

a research institute on 'Schooling, Labour Market and Economic Development'. She obtained her PhD in economics (*cum laude*) at the University of Amsterdam in 1994. She also obtained an MSc in psychology (*cum laude*) at the same university.

Her research interests are in the areas of microeconomics, labour markets and human capital. She has been a visiting professor at Stanford University, Cornell University and the European University Institute. She has received several research grants from the Netherlands Organization for Scientific Research.

Hessel Oosterbeek is Professor of Economics of Education at the University of Amsterdam. Besides education, his research interests include labour economics, economics of training and experimental economics.

Erik Plug is a senior researcher at the University of Amsterdam, where he also obtained his PhD in 1997. He is further affiliated as a research fellow to the Tinbergen Institute. His current research interests relate to family, education and labour economics.

Randolph Sloof obtained his PhD in economics from the University of Amsterdam in 1997. After a short stay at the General Court of Audit in The Hague he joined SCHOLAR in 1998 as a postdoctoral researcher to work on a project entitled 'The Experimental Evaluation of the Holdup Problem'. In 2002 he joined the Department of Economics of the University of Amsterdam as an assistant professor in economics of organization and personnel, and from 2006 onwards as associate professor.

Joep Sonnemans is Professor of Behavioural Economics at the University of Amsterdam. He is interested in (experimental) research in which insights from economics and other social sciences (e.g. psychology) are combined or contrasted: expectation formation, bargaining, social behaviour, individual search behaviour, behavioural finance and behavioural economics.

Bas van der Klaauw obtained his PhD in 2000 from the Free University of Amsterdam, where he is currently working as an associate professor. He is affiliated to the Tinbergen Institute and SCHOLAR. His research is in the field of empirical microeconometrics and is mainly concerned CAMBRIDGE

xii

Notes on contributors

with policy evaluation and labour economics. He has recently published articles in the *Economic Journal, International Economic Review* and *Journal of Labor Economics*.

Justin van der Sluis has a master's degree in work and organizational psychology from the University of Amsterdam. Later he worked for a short while as a consultant in 'strategic decision-making'. In 2002 he returned to the University of Amsterdam for a PhD project where he also joined the SCHOLAR research group. His PhD thesis discusses the role of education for the development of successful entrepreneurs.

C. Mirjam van Praag is Professor of Entrepreneurship and Organization at the University of Amsterdam (UvA). She is also the founding director of the Amsterdam Centre for Entrepreneurship (ACE) of the UvA. Previously she was an associate professor of the Economics of Organization and Personnel (UvA) and a consultant with the Boston Consulting Group. Mirjam van Praag's research interests are in the field of the economics of entrepreneurship and organization.

Ib Waterreus is a scientific member of staff at the Netherlands Education Council. He earned a master's degree in economics (1997) and a PhD (2003) from the University of Amsterdam. Between 1997 and 2003 he was a research worker at SCHOLAR and the Max Goote Expert Centre at the University of Amsterdam, with an interval at the Institute for Social and Economic Research of the University of Essex, Colchester (UK) in 2001 on a Marie Curie fellowship.