



Worker Absenteeism and Sick Pay

Absenteeism is the single most important cause of lost labour time, yet it has received much less scholarly attention than more dramatic forms of industrial disruption, such as strikes. Arguing that any explanation of absence rates must take into account the interests of employers and employees alike, this book constructs a model of the markets for absence and sick pay. These are not independent, since sick pay affects workers' incentives to be absent, and absences affect employers' willingness to provide sick pay. The book reviews the available empirical evidence relating to both markets, stressing the importance of careful identification of the effect of the price of absence on demand, since this is a crucial quantity for firms' policies. It concludes by discussing the implications of the model for human resources management, and for the role of the state in sick pay provision.

JOHN TREBLE retired recently as Professor of Economics at Swansea University. He has previously taught and held visiting posts in the United Kingdom, North America, Europe and Australia. His work is mainly in labour economics, with some forays into economic history. Professor Treble was the founder of Britain's national labour economics conference, now called the Work and Pensions Economics Group, and served a full term on the founding Committee of the European Society of Labour Economists.

TIM BARMBY has held the Jaffrey Chair of Political Economy at the University of Aberdeen since 2004, before which he was Professor of Economics at Durham University. His main academic interest is in the empirical analysis of the incentive effects of labour contracts. He has worked with John Treble on the economic analysis of absenteeism for more than twenty-five years.

Worker Absenteeism and Sick Pay

JOHN TREBLE AND TIM BARMBY



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press & Assessment
 978-0-521-80695-4 — Worker Absenteeism and Sick Pay
 John Treble, Tim Barmby
 Frontmatter
[More Information](#)



CAMBRIDGE
 UNIVERSITY PRESS

Shaftesbury Road, Cambridge CB2 8EA, United Kingdom
 One Liberty Plaza, 20th Floor, New York, NY 10006, USA
 477 Williamstown Road, Port Melbourne, VIC 3207, Australia
 314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India
 103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

We share the University's mission to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9780521806954

© John Treble and Tim Barmby 2011

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 & Assessment.

First published 2011

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

Library of Congress Cataloging-in-Publication data

Treble, John.

Worker absenteeism and sick pay / by John Treble and Tim Barmby.

p. cm.

ISBN 978-0-521-80695-4 (Hardback)

1. Sick leave. 2. Absenteeism (Labor) I. Barmby, Tim. II. Title.

HD5115.5.T69 2011

331.25'762—dc22

ISBN 978-0-521-80695-4 Hardback

Cambridge University Press & Assessment 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 & Assessment
978-0-521-80695-4 — Worker Absenteeism and Sick Pay
John Treble , Tim Barmby
Frontmatter
[More Information](#)

In memory of our parents

Note on cover illustration

The cover illustration shows a limestone ostrakon with a register of workmen's absences from Deir el-Medina, Egypt (19th Dynasty, around 1250 BC). The ostrakon is held at the British Museum: "This *ostrakon* seems to be a workman's register for 280 days of Year 40 of the reign of Ramesses II (about 1279–1213 BC). A list of forty names is arranged in columns of hieratic script on the right-hand edge of each side. To the left are dates written in black in a horizontal line. The reasons for absences are written above the dates in red ink. They are varied and give us a fascinating insight into some aspects of life in ancient Egypt. Illness figures prominently; a couple of examples of illnesses of the eyes are mentioned. One workman functioned as a doctor and was often away attending on others. Absences due to deaths of relatives are recorded, as are also references to purifications, perhaps relating to childbirth. Frequently a day missed is down to a man 'being with his boss'; other sources show that workmen did frequently do work for their superiors. Occasionally a man is away 'building his house', or at 'his festival', and there are even examples of drinking, in particular 'drinking with Khonsu'."

Contact John Treble at j.g.treble@swansea.ac.uk

Contents

<i>List of figures</i>	<i>page</i> viii
<i>List of tables</i>	x
<i>Preface</i>	xi
1 Introduction	1
2 The supply of absence and the provision of sick pay	17
3 The demand for absence	62
4 The markets for absence and for sick pay	91
5 A brief introduction to identification	104
6 The market for absence: empirical evidence	117
7 The demand for absence: empirical evidence	140
8 Policy implications for firms	175
9 Policy implications for states	191
10 Conclusion	201
<i>References</i>	205
<i>Index</i>	215

Figures

2.1	Leontief's monopoly explanation of fixed total time of work	<i>page</i> 19
2.2	A two-part wage structure to extract surplus	20
2.3	Vernon's data on productivity variations during the day	22
2.4	Barzel's model of hours of work per worker	23
2.5	The market relationship between absence rates and wages in the hedonic pricing model	31
2.6	Optimal employment and worker reliability in the Coles–Treble model	41
2.7	Isoprofit line for an assembly-line firm	41
2.8	Two possible equilibrium contracts	49
2.9	Optimal sick pay provision with perfectly competitive linear-technology firms	50
2.10	Three possible equilibrium contracts	52
3.1	The simplest model of labour supply	65
3.2	Labour supply with fixed hours	67
3.3	Labour supply with fixed hours and absenteeism	68
3.4	A random utility model of absenteeism	72
3.5	Sick pay in the simplest model of labour supply	75
3.6	Sick pay in the fixed-hours model	76
3.7	Incentives in an experience-rated scheme	79
3.8	Missing the bus	87
4.1	Theorem 2, Coles and Treble (1996)	93
4.2	Two sorting equilibria with heterogeneous workers and heterogeneous firms	94
5.1	Identification	105
6.1	Yearly absence rates in the United Kingdom, 1984–2002	122
6.2	Quarterly absence rates in the United Kingdom, 1992.1–2003.1	123
6.3	Monthly absence rates in the United Kingdom, 1992.1–2003.1	123

<i>List of figures</i>	ix
6.4 Absence rates by natural log of hourly wage rate, United Kingdom, 1993–2002	124
6.5 Absence rates by age and gender, United Kingdom, 1993–2002	125
6.6 Absence rates by weekly contracted work hours, excluding all overtime	125
6.7 Absence rates by gender, marital status and country	127
6.8 Replacement rates in the French sick pay system	133
6.9 Identification of isoprofit line	135
6.10 Identification of indifference curve	135
7.1 An identification problem?	148
7.2 Simple model of labour supply with sick pay	149
7.3 Binary choice model of absenteeism	155
7.4 Reservation morbidity	166
7.5 Instrumental variable estimation	168

Tables

2.1 Pay-offs in Coles and Treble’s (1993) model	<i>page</i> 48
6.1 Sickness absence rates by country and gender	126
7.1 Hypothetical absence records for eight workers	152
7.2 Notation for event histories	156
7.3 Random-effects logistic regression of individual daily absences	158
7.4 Maximum likelihood model of worker absence	164
7.5 Estimate of mass point distribution ($M_0 = M_1 = 2$)	164
7.6 Regression for full-time male employees from three factories	168
7.7 The wage elasticity of absence rate $\eta_{a,w}$ computed from various studies	170

Preface

This book has been a long time in the making, and we have many people and organisations to thank for support of many different kinds. The unwitting provider of many of the ideas in the book was a frozen chicken factory in Aldershot, which employed the youthful John Treble for a few weeks in 1967. During a labour economics class at the University of Hull in the early 1980s a third-year undergraduate student (whose name is now lost in the mists of time) asked an innocent question about prices and incentives, which provided the initial impetus for all our work on absenteeism. Our ideas about the empirical matters were given a considerable boost by a large British firm in the fast-moving consumer goods sector, which not only gave us access to its personnel and pay records but also paid for research assistance for two years. A second British firm, in the financial sector, was similarly generous with data, and also provided financial support, as did the Economic and Social Research Council (ESRC). The ESRC and the Leverhulme Trust have supported this work with several grants of varying sizes. Empirical work using French data was supported by the British Council and the French Ministry for Foreign Affairs under the Alliance programme.

As important as money in enabling an enterprise such as this is finding time in which to do it. Once again, several organisations have given us space to develop ideas at some length. The ESRC and the Leverhulme Trust, again; la Fondation des Treilles;ERMES and LEM at Université de Paris II (Panthéon-Assas); the Institute for Labour Research at the University of Essex; the Centre for Labour Economics at Århus Universitet; the Tinbergen Institute; and the economics departments at Vrije Universitet, Amsterdam, Universität München, Universität Hannover, the University of Arizona and Curtin University. Thanks must also go to Per Johansson for organising a workshop on absence in Uppsala at which the demand and supply idea was first tried out.

Many friends (some of whom have also been colleagues and co-authors) have been generous with their time, their creativity and the frankness of their criticism. They include: Rick Audas, Felix Bellaby, Chris Bojke, Sarah Bridges, Sarah Brown, Frank den Butter, Melvyn Coles, Peter Dolton (who also suggested the cover image), Martin Dufwenberg, Barbara Eberth, Marco Ercolani, Price Fishback, Edwin van Gameraen, Knut Gerlach, Donna Gilleskie, Wolter Hassink, Peter Kenyon, Joseph Lanfranchi, Makram Laruem, Ada Ma, Mike Nolan, Ron Oaxaca, Chris Orme, John Sessions, Suzyrman Sibly, Ali Skalli, John Skåtun, Gesine Stephan, Rado Vadovic, Simon Vicary and Rainer Winkelmann. To these should be added seminar participants at conferences and economics departments too numerous to list, even if we had kept a record. Denise Drummond very kindly and carefully checked the Index.

Special mention must be made of Joseph Lanfranchi, Gauthier Lanot and Ron Oaxaca, who found time to read the entire manuscript. The final version has benefited greatly from their efforts, but they should not be blamed for any remaining errors, inaccuracies or omissions.