

The Economics of European Agriculture

The Economics of European Agriculture

Bernadette Andreosso-O'Callaghan

*Professor of Economics
University of Limerick
Ireland*

palgrave
macmillan



© Bernadette Andreosso-O'Callaghan 2003

Softcover reprint of the hardcover 1st edition 2003 978-0-333-72644-0

All rights reserved. No reproduction, copy or transmission of this publication may be made without written permission.

No paragraph of this publication may be reproduced, copied or transmitted save with written permission or in accordance with the provisions of the Copyright, Designs and Patents Act 1988, or under the terms of any licence permitting limited copying issued by the Copyright Licensing Agency, 90 Tottenham Court Road, London W1T 4LP.

Any person who does any unauthorised act in relation to this publication may be liable to criminal prosecution and civil claims for damages.

The author has asserted her right to be identified as the author of this work in accordance with the Copyright, Designs and Patents Act 1988.

First published 2003 by
PALGRAVE MACMILLAN
Houndmills, Basingstoke, Hampshire RG21 6XS and
175 Fifth Avenue, New York, N.Y. 10010
Companies and representatives throughout the world

PALGRAVE MACMILLAN is the global academic imprint of the Palgrave Macmillan division of St. Martin's Press, LLC and of Palgrave Macmillan Ltd. Macmillan® is a registered trademark in the United States, United Kingdom and other countries. Palgrave is a registered trademark in the European Union and other countries.

ISBN 978-1-349-40598-5 ISBN 978-0-230-00117-6 (eBook)
DOI 10.1057/9780230001176

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources.

A catalogue record for this book is available from the British Library.

Library of Congress Cataloging-in-Publication Data
Andreosso-O'Callaghan, Bernadette, 1959–

The economics of European agriculture / Bernadette Andreosso-O'Callaghan.
p. cm.

Includes bibliographical references and index.

1. Agriculture—Economic aspects—Europe. I. Title.

HD1917.A63 2003
338.1'094—dc21

2003048287

10 9 8 7 6 5 4 3 2 1
12 11 10 09 08 07 06 05 04 03

A Maman

Contents

<i>List of Figures</i>	xi
<i>List of Tables</i>	xiii
<i>Acknowledgements</i>	xvi
Introduction	1
1 Concepts and Definitions	4
Objectives of this chapter	4
1.1 Definition and scope of the field of agricultural economics	4
1.2 Global trends in supply	10
1.3 The role of agriculture in economic development	23
Summary	37
Key terms and concepts	37
Notes	38
Bibliography	38
2 Demand and Supply – Market Mechanisms for Agricultural Products	41
Objectives of this chapter	41
Introductory remarks	41
2.1 The demand function – price and income elasticities of demand	42
2.2 Characteristics of supply	46
2.3 The market mechanism for agricultural products	51
2.4 The structure of EU agricultural holdings	60
2.5 Concluding remarks – the ‘farm’ problem	61
Key terms and concepts	62
Notes	62
Bibliography	63
3 Government Intervention in Agriculture	65
Objectives of this chapter	65
Introduction	65
3.1 The rationale for government intervention in agriculture	66

3.2	Agricultural support policies: methods and effects	67
3.3	Early European agricultural policies	76
	Summary	86
	Key terms and concepts	87
	Notes	87
	Bibliography	88
4	The Common Agricultural Policy	89
	Objectives of this chapter	89
	Introduction	89
4.1	Birth and mechanisms of the CAP	90
4.2	Critical appraisal of the CAP: relative success/failure of the policy	100
4.3	CAP reforms and the future of the policy	112
	Conclusion	126
	Key terms and concepts	127
	Notes	128
	Bibliography	129
5	Technology and Innovation	131
	Objectives of this chapter	131
	Introduction – technology and economic growth	131
5.1	Major innovations in European agriculture	134
5.2	Models of innovation diffusion and adoption	142
5.3	The importance of knowledge in agriculture	150
5.4	Agricultural innovation in the EU	152
	Summary	161
	Key terms and concepts	162
	Notes	162
	Bibliography	163
6	A Wider European Union: Enlargement to Central and Eastern Europe, Cyprus and Malta	166
	Objectives of this chapter	166
	Introductory remarks	166
6.1	Previous enlargements	167
6.2	Enlargement to the CEECs, to Cyprus and Malta	170
	Summary	186
	Key terms and concepts	187

Notes	187
Bibliography	188
7 The EU as an Agricultural Trade Partner	189
Objectives of this chapter	189
Introduction: overview of world trade patterns and comparative advantage of countries	189
7.1 The major agricultural trade partners of the EU	194
7.2 EU trade agreements with a number of selected developing countries	198
7.3 Tackling rural poverty and malnutrition in the developing world: EU cooperation with LDCs	211
Summary	215
Key terms and concepts	216
Notes	217
Bibliography	218
8 Agricultural Trade Liberalization	220
Objectives of this chapter	220
Introduction	220
8.1 The Uruguay Round of negotiations – the measurement of trade distortions	222
8.2 The 1992 Blair House pre-accord, the ‘oilseeds’ dispute and the Marrakech agreement	232
8.3 The CAP–GATT/WTO link	236
8.4 Estimating the effects of trade liberalization	237
8.5 The future – the November 2001 Doha agenda and beyond	244
Conclusions: contentious issues in the new round of negotiations	246
Key terms and concepts	248
Notes	248
Bibliography	249
Conclusions: The Future of EU and World Agriculture – The Challenges Ahead	252
<i>Index</i>	258

List of Figures

1.1(a)	Autarky equilibrium and neutral effects of growth	31
1.1(b)	Effects of growth with income elasticity of demand for food less than unity (closed economy)	32
1.2(a)	Changes in consumption and production patterns arising from free trade	33
1.2(b)	Growth effects in an open economy	35
2.1	The demand curve for beef of a household	42
2.2	The total physical product curve	47
2.3	Demand and supply interaction on the market for strawberries	53
2.4	Changes in supply and demand conditions	54
2.5	Disequilibria on agricultural markets – the cobweb pattern	57
3.1	The deficiency payments system	69
3.2	Import quotas	70
3.3	Tariff protection	71
3.4	Variable levies	73
4.1	CAP price mechanisms	94
4.2	EAGGF Guarantee expenditure (1972–2000) (Bn ECU/EURO, nominal prices)	114
4.3	New method of calculating MCAs since the 1984–85 marketing year	118
5.1	Percentage of total corn acreage planted with hybrid seeds	145
5.2	A model of induced technical innovation	149

List of Tables

1.1	The inter-industry matrix of the EU (year <i>t</i> , in millions of €)	6
1.2	Food supply – calories per caput per day	12
1.3	World food production in volume (1999)	13
1.4	Major world producers in 1999 – breakdown by product category (in %)	14
1.5	Share of products in final EU production, and major producers for each product (1999, in %)	15
1.6	Member states' shares in final agricultural production (total and selected products; 1999, in %, EU-15 = 100)	17
1.7	Main agricultural regions in the EU (1999)	19
1.8	Share of agriculture in total employment and GDP at EU level (1960 and 1999)	26
1.9(a)	Relationship between per capita national income and the importance of the agricultural sector in the economy. Selected countries (1999)	28
1.9(b)	Sectoral share of GDP (Selected countries, 1960 and 1992) in (%)	29
2.1	Demand and supply of strawberries	53
2.2	Size of agricultural holdings in the EU (1997/98)	60
2.3	Concentration in selected EU agricultural industries (1999)	61
3.1	Classification of selected policy instruments	68
3.2	The effects of agricultural protection	74
4.1	Evolution of EU expenditure on CAP and other policies (1973–2001, in %)	102
4.2	Evolution of revenues (1971–2000, in %)	103
4.3	Distribution of agricultural funds (EAGGF Guarantee section) by member country, compared with the relative importance of the farming community (1999, in %)	104
4.4	EAGGF guarantee expenditure by product (2000, in %)	105
4.5	Self-sufficiency rates in certain agricultural products (1985/86, 1992/93 and 1998/99)	107

4.6	Evolution of producer prices for agricultural products in the EU (1985–93 and 1990–98, VAT excluded)	108
4.7	Total EU agricultural policy transfers (ECU billion)	111
4.8	Early Commission's reports on the review of the CAP	115
5.1	Average annual compound growth rates during three eras	134
5.2	Share of the workforce engaged in agriculture, 1800 to 1920/30	137
5.3	Utilization of chemical fertilizers in Europe, 1913 and 1932	138
5.4	Average wheat yields in Europe, 1909/13 and 1961/65	139
5.5	A synopsis of the main European programs promoting biotechnology research	155
6.1	Macroeconomic indicators of the CEECs (2000 or 2001)	174
6.2	Land by legal status in the CEECs (in %, 1996 and 2000)	176
6.3	Bilateral agricultural trade between the EU and each of the CEECs (1998)	178
6.4	Impact of successive enlargements of the EU (based on 1995 data)	179
6.5	Expenditure on agriculture and on structural operations (ECU billion)	181
6.6	Funding under SAPARD (at 1999 prices)	182
7.1	World production and trade in the principal agricultural commodities (1991 and 1998)	190
7.2	Main food exports by the EU-15 and the USA in 1998	191
7.3(a)	Cost comparisons	193
7.3(b)	Opportunity costs of production	193
7.4	Main agricultural trade partners of the triad (EU, USA and Japan, 2001) (in billion €)	195
7.5	Evolution of EU agricultural trade flows (1998–2001) (in billion €)	197
7.6	MED 12 exports of agricultural and food products to the EU as a percentage of total exports to the EU (1995) (in %)	204
7.7	Revealed comparative advantage of Mediterranean countries in agricultural products	205
7.8	EU–Asia agricultural trade (1999)	211

8.1	Producer subsidy equivalents (PSEs) for agricultural products – a cross country comparison (1979–90) (in % of receipts)	226
8.2	Costs and benefits of agricultural support, 1986 (billion of US\$, except for last two lines)	227
8.3	The main components of the 1993 UR agreement on agriculture	235
8.4	Annual percentage change of consumer prices for foodstuff and beverages in the EU (1995–2000)	241

Acknowledgements

During the gestation and the preparation of this book, there were a number of people who, in one way or another, contributed to it by stimulating me to delve into the intricacies of European agricultural economics. First of all, my teaching to several cohorts of students at the University of Limerick, and at the University of Montpellier (France) where I have been invited Professor, gave me the opportunity to lay down the foundations of this work. Had it not been for these students, I may never have written such a book. My thanks go to my research students, and in particular to Patrick Callinan for his invaluable help, and I am grateful to Catherine Sexton for the efficient support she provided in relation to the graphs. I am extremely indebted to Michael Tracy who taught Agricultural Economics to me at the College of Europe and to Jean-Pascal Bassino, Sylvie Vacheret and Rita Buckley for their comments and constructive criticisms proffered on an earlier version of the book. Invaluable assistance was provided by Marie Dineen from the European Documentation Centre at the University of Limerick at all stages of the writing process.

Last but not least, I would like to thank my husband Frank O'Callaghan and our three children for their infinite patience, support and love. In particular, Frank has kindly proofread large sections of the manuscript.

Permission to reproduce copyright material is greatly acknowledged in particular to the Econometrics Society. Also, I am grateful to Cambridge University Press for allowing me to reprint the following: Tables 1.2, 5.2 and 12.1 of James Simpson's book entitled *Spanish Agriculture – The Long Siesta, 1765–1965*, published in 1995.