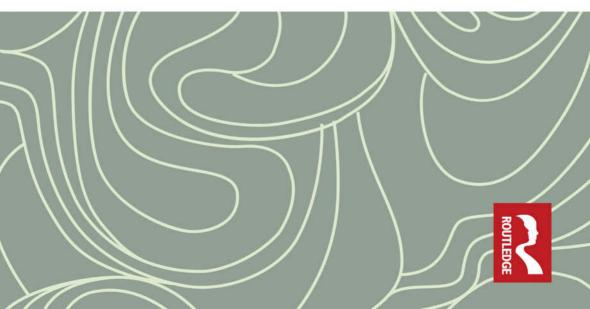


# THE ECONOMICS AND POLITICAL ECONOMY OF AFRICAN AIR TRANSPORT

Edited by Kenneth Button, Gianmaria Martini and Davide Scotti



'This book is most welcome for many reasons. It comprehensively examines a rarely analysed region, covering the policy background to African aviation, explores the airlines and their networks, and assesses the infrastructure, labour market and efficiency problems they face.'

-Peter Forsyth, Monash University and Southern Cross University

# The Economics and Political Economy of African Air Transport

Africa is the smallest of the 'regional' aviation markets but one that Boeing and others expect to expand over the medium term. Developments on the continent that require the creation of robust and efficient air transport include growth in tourism, the export of 'exotics', and the emergence of modern manufacturing and high-tech industries. Africa's regional aviation markets generally lack good airports and air traffic control, viable airlines, and adequately skilled labour. Airline safety is also a major concern.

Written by a 'Who's Who' of aviation specialists and policy makers, *The Economics and Political Economy of African Air Transport* fills an emerging void in the literature regarding Africa's aviation markets. Its original papers focus explicitly on the economic and political dimensions of the subject, although with relevance to the strategic planning and management of airlines and their associated infrastructure. Topics discussed include external and internal market efficiencies, air service liberalization, the emergence of new carriers, safety and security, low-cost airline and other business models, and airport economics.

Focusing on the broader issues surrounding the subject, this book will be of interest to both the aviation community and those with an interest in economic and social development.

**Kenneth Button** is a University Professor of Public Policy at the George Mason School of Policy, Government, and International Affairs, USA, and a world-renowned expert on transportation policy. He has published, or has in press, some 80 books and over 400 academic papers in the field of transport economics, transport planning, environmental analysis and industrial organization.

**Gianmaria Martini** is Professor of Economics at the University of Bergamo, Italy, and Head of the Department of Economics and Technology Management. His recent research focuses on methods to estimate technical and economic efficiency in the air transportation and healthcare sectors, published in international journals and presented at many international conferences.

**Davide Scotti** is a Research Fellow at the University of Bergamo, Italy, with a focus on technical efficiency and productivity studies regarding airport activities.

# The Economics and Political Economy of African Air Transport

Edited by Kenneth Button, Gianmaria Martini, and Davide Scotti



First published 2018 by Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge 711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2018 selection and editorial matter, Kenneth Button, Gianmaria Martini, and Davide Scotti; individual chapters, the contributors

The right of Kenneth Button, Gianmaria Martini, and Davide Scotti to be identified as the authors of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

*Trademark notice*: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

*British Library Cataloguing-in-Publication Data* A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data Names: Button, Kenneth, 1948– editor, author. | Martini, Gianmaria, 1960– editor, author. | Scotti, Davide, editor, author. Title: The economics and political economy of African air transport / Kenneth Button, Gianmaria Martini and Davide Scotti. Description: New York: Routledge, 2017. | Includes bibliographical references and index. Identifiers: LCCN 2017018362 | ISBN 9781138203600 (hardback) | ISBN 9781315471297 (ebook) Subjects: LCSH: Aeronautics, Commercial—Economic aspects— Africa. | Aeronautics, Commercial—Political aspects—Africa. | Airports—Economic aspects—Africa. | Infrastructure (Economics)—Africa. Classification: LCC HE9882.A35 E26 2017 | DDC 387.7096—dc23 LC record available at https://lccn.loc.gov/2017018362

ISBN: 978-1-138-20360-0 (hbk) ISBN: 978-1-315-47129-7 (ebk)

Typeset in Bembo by codeMantra

# Contents

	List of figures and tables List of contributors Preface	ix xi xiii
1	Introduction	1
	KENNETH BUTTON, GIANMARIA MARTINI, AND DAVIDE SCOTTI	
2	The development of African air transport	16
	BERENDIEN LUBBE AND SVETLANA SHORNIKOVA	
3	The African air transport network	40
	DAVIDE SCOTTI, GIANMARIA MARTINI,	
	STEFANO LEIDI, AND KENNETH J. BUTTON	
4	The development of air service agreements in Africa	61
	DAVID WARNOCK-SMITH AND ERIC TCHOUAMOU NJOYA	
5	Persian Gulf and Turkish airlines in Africa GORDON PIRIE	80
6	The emergence of low-cost airlines in Africa	99
	CHARLES E. SCHLUMBERGER AND RUI NEIVA	
7	The evolution of African airline business models	117
	STEPHAN HEINZ AND JOHN F. O'CONNELL	
8	Pan-African strategic alliance, global competition:	
	a case study of air Afrique	137
	JOSEPH AMANKWAH-AMOAH	

149

Index

# List of figures and tables

#### Figures

1.1	Sub-Saharan Africa air traffic (million passengers); 1995–2015	3
1.2	Net profits, from left to right of the ten largest airlines by	
	passengers carried (\$ million)	9
2.1	Limited intra-African connectivity	35
3.1	Available seats between 1997 and 2011	42
3.2	Air transport routes with more than 50 thousand seats, 1997	
	and 2011	43
3.3	Capacity of African airports in 2011	44
3.4	African airports' capacities; 1997 and 2011	45
3.5	Cities connected by airline origin (1997–2011)	48
3.6	African cities connected by African region (1997–2011)	49
3.7	Spatial configuration at African main airports	52
3.8	Airports' airline dependency by airline registration, 1997	
	(top) and 2011 (bottom)	55
3.9	African effect on airports capacity growth	56
3.10	The distribution of cargo by African countries in tons	
	loaded/unloaded	57
4.1	Bilateral air services agreements concluded between African	
	states from 1960 to 1980	62
5.1	Africa mainland destinations served at least once daily on	
	57 Emirates, Etihad, Qatar and Turkish airlines' non-stop	
	passenger routes, February 2016. Cartography: Phil Stickler	84
7.1	Price elasticity of demand for leisure travellers (left) and for	
	business travellers (right)	119
7.2	Geographical cluster of African Airlines (2011)	123
7.3	The evolution of African airline business models -	
	a capacity perspective	126
7.4	A network perspective of the evolution of African airline	
	business models (2011–2015)	128
7.5	Relationship between revenue and costs	130
7.6	Relationship between connectivity and profitability	131

#### x List of figures and tables

7.7	Relationship between fleet composition and utilisation	
	(aircraft) with profitability	132
7.8	Evolution of the full-service network carrier model	134

#### Tables

2.1	Key cooperation initiatives and milestones implemented to	
	further African air transport integration: post-YD to present	29
3.1	Ten largest hubs in Africa by seats (2011)	47
3.2	Top regional connections within and outside of Africa (seats	
	offered in 2011)	50
4.1	Features of Air Services Agreements between African	
	Countries 1960–2000	64
4.2	Progress towards liberalisation of air transport in Africa at a	
	regional and continental level since 1988	70
4.3	Liberalisation status and traffic development in Cote d'Ivoire	
	and Zambia	75
5.1	Flights and seats in July months offered by African	
	and other airlines on Africa-Middle East routes	
	and shares in the traffic	82
6.1	Passengers by airport	107
6.2	Bilateral Air Services Agreements between Tanzania and	
	East African Community countries	109
6.3	Good governance indicators	113
8.1	Theoretical underpinnings	138
8.2	Contracting nations of Air Afrique from 1961–2002	141

## List of contributors

- Joseph Amankwah-Amoah is Reader in International Business at Kent Business School, University of Kent. He received his PhD in Business Studies (IB and Strategy) from the University of Wales, Swansea.
- **Kenneth Button** is a University Professor in the Schar School of Policy and Government at George Mason University, Virginia. He has a PhD in Economics from Loughborough University.
- **Stephan Heinz** is a Senior Consultant at the Seabury Group. He has an MBA from INSEAD.
- **Stefano Leidi** is the Project Manager and Head of Customer Care at Mida Informatica and collaborates with University of Bergamo on aviation research. He holds a MSC in Management Engineering from University of Bergamo.
- **Berendien Lubbe** is a Professor and Head of the Tourism Management Division at the University of Pretoria. She has a DCom (Communication Management) from the University of Pretoria.
- **Gianmaria Martini** is Professor of Economics in the Department of Management, Information and Production Engineering at the University of Bergamo. He has a PhD in Economics from the University of York.
- **Rui Neiva** is a Policy Analyst at the Eno Center for Transportation and holds a PhD in Public Policy from George Mason University, Virginia.
- John F. O'Connell is a Senior Lecturer in the Centre for Air Transport Management at Cranfield University. He has a PhD in Airline Strategy from Cranfield University.
- **Gordon Pirie** was Professor in the African Centre for Cities at the University of Cape Town until retiring in 2016. He has a PhD in Geography from the University of the Witwatersrand, Johannesburg.
- **Charles Schlumberger** is the Lead Air Transport Specialist of the World Bank. Previously he was Vice-President of the Union Bank in Switzerland. He holds a PhD in Civil Law from McGill University.

#### xii List of contributors

- **Davide Scotti** is a Research Fellow in the Department of Management, Information and Production Engineering at the University of Bergamo. He holds a PhD. in Economics and Management of Technology from the University of Bergamo.
- **Svetlana Shornikova** is a Senior Project Development Associate: Air Transport, Hospitality and Tourism at AHT Research and Consulting. She has a DCom in Tourism Management from the University of Pretoria.
- **Eric Tchouamou Njoya** is a Senior Lecturer in the Department of Logistics, Operations, Hospitality and Marketing at Huddersfield University. He has a PhD in Applied Economics from the Karlsruhe Institute of Technology.
- **David Warnock-Smith** is Director of the Department of Aviation Tourism and Events at Buckinghamshire New University and holds a PhD in Air Transport from Cranfield University.

### Preface

The motivation for collecting these original papers was an appreciation of just how under researched some air transportation markets are. The aviation sector, and especially since the global spread of economic deregulation began nearly 40 years ago in the United States, has attracted immense academic interest as a sort of test-bed experiment for the way market forces can cause industry to evolve and stimulated new managerial practices. At a very rough guess, however, we would say that about 95 percent of this work was been focused on North America and Europe, with a gathering body of analysis looking at the Asian situation. Africa, and to a lesser extent South America, have attracted less interest.

This is understandable because data on Africa is sparse and the amount of both passenger and freight traffic is, by global comparisons, small. But on the other hand, Africa represents a large part of the global landmass and has a growing population that is also enjoying a degree of economic development. It is a place where air transportation would seem to have a role to play even now, let alone in the future.

With this in mind, we asked a set of experts in the aviation field, who also have some considerable knowledge of Africa, to write papers that address some of the main issues regarding the interacting economic and political economy features of the African aviation situation. The papers are all non-technical in the sense that they are designed more to explain what is going on, and likely to go on, in the African aviation scene, than to develop and estimate complex technical models. They are aimed at the proverbial broadly educated person rather than the narrow expert, although we do hope the latter may find interest in them in that much of the material is designed to set specific trends and issues in a broader context.

Assembling a set of papers of this sort inevitably means a certain amount of nagging and prodding of contributors, and we hope we have not been excessive in doing this. Indeed, the various writers have been generous with their time in preparing their material and, when requested, modifying and editing to produce a relatively even level of presentation and analysis for readers.

We hope that readers will find the finished result both interesting and useful.

## 1 Introduction

Kenneth Button, Gianmaria Martini, and Davide Scotti

It is rather ironic that while modern economists generally trace the origins of the current core of their subject to Adam Smith's *Wealth of Nations*, they are not very good at explaining why some nations are wealthier than others, or why some are growing faster. Abstract models abound that point, in various degrees, to the roles of natural resources, stable political regimes, access to markets, cultural traits, and so on, but experience suggests that none is better at forecasting the next big economic superpower, or the timing of a major recession than simply tossing a die.

But going back to Adam Smith, his main explanation revolves around the economic progress that accompanies the division of labour and the economies that accrue from specialization. He uses his famed labour specialization in pin production as empirical evidence of this. But with this comes the need for trade, the people who spend their time sharpening the pins need to be able to trade with those who card them or add the cap. Trade is, in this sense, at the core of wealth creation; without it there can be no specialization or division of labour. And here we are not talking about international trade, which in the day of short-hand journalism is often seen as the only form of trade, but the more generic, everyday trade that takes place between individuals, firms, and government, and every combination thereof, at the micro level.

Most trade in physical goods involves some form of transportation, and this includes, in the modern world, electronic transportation of money and information. What emerges from this, when approached from this generalized framework is that, in general, the parts of the world with the greatest wealth are also those with the most efficient transportation systems. Of course, one can debate issues of causality – does transportation lead to wealth creation, or does the acquisition of wealth facilitate investment in transportation? But at the mega, geographical level there is clearly correlation, and at the very least, appropriate transportation does seem to act as a facilitator, if not always the driver, of economic growth and wealth creation.

Remaining at the mega level, the part of the world that has the least wealth per capita is Africa; e.g. while according to the United Nations, in 2000 (the last year data is available) North America held 27.1 percent of the world's net wealth in purchasing parity terms but only had 5.7 percent of the population,

and Europe 26.4 percent of the wealth with 9.6 percent of the population, Africa share of the wealth was only 1.52 percent with 10.7 percent of the global population. If one looks at the dynamic situation, rather than Smith's focus on stocks of wealth, then there is little evidence of convergence. The wealthier parts of the world have the largest increases in absolute money GDP, although for periods, in percentage terms, their increases may be slower.

Of course, there may be many reasons for this distribution, but, by looking at the very basic statistics, the pattern corresponds with the quality of transportation in the various continents. Africa has, for example, by all the measures used by the World Bank, the worse road, railroad, and airport infrastructure, both in terms of quantity and quality of any Continent (Gwilliam, 2011). It also has the least number of cars, trucks, and commercial aircraft.

While there are important differences in the roles of the various forms of transportation in facilitating the trade that fosters the growth of wealth, the focus here is on the aviation sector. Of course, given the network nature of transportation, together with the multimodal nature of most trips or goods movements – you cannot ship flowers by air without adequate surface transportation to and from the airports involved – this does involve drawing a rater artificial boundary, but it is a practical one and institutionally aviation does tend to be treated separately, even if this is often inappropriate from an economic perspective.

The papers in this volume, all of which are original contributions, and that are outlined at the end of the Introduction, cover some of the main themes that have become important in ongoing debates about the African air transportation market, and the political economy of its development. Before moving on to explain the justification for the structure of the book, in the following pages the papers are essentially set within the larger context of African aviation. To this end we begin with a look at the larger picture of African air transportation in the early part of the 21st century, and to highlight some of the ongoing trends that would seem of an enduring nature.

#### African aviation

Over the past 15 years or so, Africa in general, and especially sub-Saharan Africa, has, albeit unevenly, been enjoying something of an economic boom. The demand for its raw materials has been one factor in this, as has the relative political stability of many of its constituent countries. Outside aid and investment strategies may also have removed some of the burden of limited local resources. This economic situation both provides resources for upgrading the continent's infrastructure while at the same time placing increasing demands on it. In this context, there has been considerable interest by non-African countries, in addition to former colonial powers, both for political-military and commercial reasons, in investing in African infrastructure and production. For example, China has shown considerable interest,