THE RELATIONSHIP BETWEEN SOUTH AFRICAN AVIATION POLICY IN AFRICA AND AIR PASSENGER TRAFFIC FLOWS

by

SVETLANA SUROVITSKIH

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STUDY LEADER: PROFESSOR BERENDIEN ANNA LUBBE

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DECLARATION

I declare that the Doctor’s thesis, which I hereby submit for the degree DCom Tourism Management at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at another university.
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ABSTRACT

International air transport has been one of the most highly regulated and restrictive industries in the world, governed by bilateral air services agreements (BASAs). More recently progressive liberalisation, through the gradual removal of regulatory restrictions, has taken place in major air markets of the world. In Africa, more than a decade ago, African leaders agreed to liberalise the intra-African aviation market through the Yamoussoukro Decision (YD) of 2000 but its full potential across the Continent has not yet been realised. Many studies worldwide have been done on air liberalisation and its impact on air traffic flows but very few include Africa. This study focuses on the impact on air passenger traffic flows of South Africa’s aviation policy in Africa by investigating the link between South Africa’s aviation policy, as reflected in the design of its BASAs, and air passenger traffic flows over an 11 year period (2000 to 2010). A mixed research methodology was followed. Qualitatively, a two-round Delphi technique was employed to determine the views of aviation experts from academia, the public and private sectors, on features of BASAs, as well as those unrelated to BASAs, that have an influence on air passenger traffic flows between country-pairs in Africa. Twenty-five BASA features and 48 non-BASA factors were identified from which a conceptual framework was formulated. The quantitative phase aimed at estimating and statistically quantifying the impact of the degree of restrictiveness or liberalisation of the respective BASAs, as measured by four variants of the Air Liberalisation Index (ALI): STD, 5th+, DES+ and OWN+. It also aimed at identifying which specific provisions of BASAs had the most significant impact on air passenger traffic flows. A fixed one-way panel regression technique was applied to the selected 11 year panel data set of 42 African countries, representing five markets: intra-African; the SADC; West African; East African and North African. A number of other predictors were also identified which meant that the impact of the aviation policy on air passenger traffic flows could not be tested in isolation: the degree of liberalisation of the policy as measured by the ALI; the number of years BASAs have been in place; GDP; the presence of a low-income country; the magnitude of services trade flows; and population size. The simultaneous impact of the six predictors was tested in each of the five markets with the various markets showing different predictors as being statistically significant. In the intra-African and SADC regional markets these were Trade, ALI and GDP; in the East African market Low Income, Trade, ALI and Population but in the North African market...
only GDP. Where the impact of the aviation policy was found to be significant, individual provisions such as fifth freedom traffic rights, capacity, designation and cooperative arrangements were tested for their impact on air passenger traffic over two time periods: 2000 – 2010 and 2006 – 2010. These also proved to be significantly different for the various regions. The results of this research provide new insights into the relationship between air passenger traffic flows and aviation policy in the South African – intra-African and regional contexts. The research technique used in the South African – intra-African market expands on the established cross-sectional 2005 QUASAR database, laying a foundation for similar studies in other regions where impact of policy over time can be established.
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ACRONYMS

ACAC  Arab Civil Aviation Commission agreement
ACSA  Airports Company of South Africa
AFCAC  African Civil Aviation Commission
AFRAA  African Airlines Association
ALI  Air Liberalisation Index
AMU  Arab Maghreb Union
ANZCERTA  Australia-New Zealand Closer Economic Relations Free Trade Agreement
AOC  Air Operator Certificate
APEC  Asia Pacific Economic Cooperation
ASA  Air Services Agreement
ASEAN  Association of South-East Asian Nations
ASGI-SA  Accelerated and Shared Growth Initiative of South Africa
ASLC  Air Services Licensing Council
AU  African Union
BAG  Banjul Accord Group
BASA  Bilateral Air Services Agreement
BEE  Broad-Based Black Economic Empowerment
CAB  Civil Aeronautics Board
CAGR  Compound Annual Growth Rate
CARICOM  Caribbean Community air services agreement
CEMAC  Economic and Monetary Community of Central Africa
CLMV  Cambodia, Laos, Myanmar, Vietnam agreement
COMESA  Common Market for Eastern and Southern Africa
CRS  Central Reservation System
DES+  Designation-plus (ALI weighting system)
DHA  Department of Home Affairs
DOT  Department of Transport
EAC  East African Community
ECA  Economic Commission for Africa
ECAA  European Common Aviation Area
ECOSOC  Economic and Social Council
ECOWAS  Economic Community of West African States  
EU  European Union  
FE  Fixed Effects regression method  
GATS  General Agreement on Trade in Services  
GDP  Gross Domestic Product  
GEAR  Growth Employment and Redistribution  
IASC  International Air Services Council  
IATA  International Air Transport Association  
IATA44  International Air Transport Agreement (1944)  
ICAO  International Civil Aviation Organisation  
L  Low income countries  
LAM  Linhas Aéreas de Moçambique  
LM  Lower Middle income countries  
MALIAT  Multilateral Agreement on the Liberalization of International Air Transportation  
MASA  Multilateral Air Services Agreement  
MCS  Movement Control System  
MIDT  Marketing Information Data Transfer  
MOU  Memorandum of Understanding  
NEPAD  New Partnership for Africa’s Development  
OAU  Organisation of African Unity  
OLS  Ordinary Least Squares  
OWN+  Ownership-plus (ALI weighting system)  
PPOB  Principal Place of Business  
QUASAR  Quantitative Air Services Agreements Review  
REC  Regional Economic Community  
RDP  Reconstruction and Development Programme  
RPK  Revenue Passenger Kilometre  
SA  South Africa  
SAA  South African Airways  
SACAA  South African Civil Aviation Authority  
SADC  Southern African Development Community  
SAM  Single Aviation Market  
SAT  South African Tourism  

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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>SATCC-TU</td>
<td>Southern African Transport and Telecommunication Commission</td>
</tr>
<tr>
<td>SCP</td>
<td>Structure-Conduct-Performance</td>
</tr>
<tr>
<td>SITA</td>
<td>State Information Technology Agency</td>
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<tr>
<td>SOEC</td>
<td>Substantial Ownership and Effective Control</td>
</tr>
<tr>
<td>STD</td>
<td>Standard (ALI weighting system)</td>
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<tr>
<td>TAAG</td>
<td>Transportes Aéreos Angolanos</td>
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<tr>
<td>TGS</td>
<td>Tourism Growth Strategy</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>UM</td>
<td>Upper Middle income countries</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNWTO</td>
<td>United Nations World Tourism Organisation</td>
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<tr>
<td>USA</td>
<td>United States of America</td>
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<tr>
<td>WAEMU</td>
<td>West African Economic and Monetary Union</td>
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<tr>
<td>WASA</td>
<td>World Air Services Agreements Database</td>
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<tr>
<td>WDI</td>
<td>World Bank Development Indicators</td>
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<td>WTO</td>
<td>World Trade Organisation</td>
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<td>WTTC</td>
<td>World Travel and Tourism Council</td>
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<td>YD</td>
<td>Yamoussoukro Decision</td>
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<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Fifth freedom-plus (ALI weighting system)</td>
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GLOSSARY OF TERMS

Accelerated and Shared Growth Initiative of South Africa
The Initiative was launched in February 2006 and was a result of the South African government's commitment to halve unemployment and poverty by 2014.

Aircraft operations
The provision and maintenance of aircraft, their operation and other support services.

Air services agreement
See bilateral air services agreement below.

Air transport regulatory function and requirements
These are policies, legislations and requirements to enable air transport and to satisfy air transport needs, such as infrastructure planning, licensing of air services, allocation of traffic rights internationally, economic considerations and monitoring of the financial performance of air carriers.

Air transport services
A system for the conveyance of people and goods in an orderly, safe and effective manner both domestically and internationally, while using the aviation infrastructure and aircraft provided for that purpose.

Air transport support stakeholders
These are stakeholders that facilitate the operational aspects of the civil aviation system, such as travel agents, insurance companies, banks and shippers of cargo.

Aviation Infrastructure
Aviation infrastructure includes facilities for take-off and landing of aircraft, the loading and unloading of passengers and cargo, arranging sufficient space for aircraft movement, including required navigation, air traffic services and information services needed for completing flights safely.
Bermuda agreement
In 1946, the United States and the United Kingdom negotiated one of the first air services agreements under the Chicago Convention. The agreement, signed in Bermuda, included capacity and pricing controls. The Bermuda I agreement served as a prototype for many subsequent agreements. In 1977, the Bermuda II agreement, involving the United States and the United Kingdom, was similar to its predecessor in most respects, but included restrictions on multiple designation and provisions for capacity and all-cargo services.

Bilateral air services agreement
A basic document, most often used by states to jointly regulate their international air services relationships, which is likely to consist of a textual body (preamble, articles and signatures), an annex or annexes, possible attachments and any agreed amendments. Such an agreement is often referred to as a “bilateral”.

Bilateral regulation
Regulation undertaken jointly by two parties, most typically by two states, although one or both parties might also be a group of states, a supra-state (a community or other union of states acting as a single body under authority granted to it by its member states), a regional governmental body or even two airlines.

Break of gauge
Break of gauge is used in air services agreements to allow an airline that has traffic rights from its own country (A) to country (B) and then 5th freedom rights on to country (C), to operate one type aircraft from A to B and then a different type (usually smaller) from B to C and beyond. This normally involves basing aircraft and crew in country B.

Capacity clause
This clause identifies the regime which determines the capacity (in terms of volume of traffic, frequency or regularity of service and/or aircraft type(s)) that may be carried out on the agreed services. The most commonly used capacity clauses are: predetermination, Bermuda I and free determination. Predetermination is the most restrictive capacity clause and requires that the capacity is agreed prior to service commencement. Bermuda I gives a limited right to the airlines to set their capacities without prior government approval while free determination leaves the capacity out of regulatory control.
**Code-sharing**

The use of the flight designator code of one air carrier on a service performed by a second air carrier, whose service is usually also identified (and may be required to be identified) as a service of and being performed by the second air carrier.

**Commercial stakeholders**

These are stakeholders, which are normally associated with buying goods and services, such as aircraft, maintenance and fuel among others. This group includes all air carriers, general aviation enterprises, airport, air traffic and navigational services, aviation training academies, aircraft maintenance organisations and aircraft manufacturers.

**Community of interest**

ICAO defines this as being present whenever “a party would accept a foreign designated airline to operate the agreed services under the condition that substantial ownership and effective control is vested: a) in one or more countries that are parties to the agreement or by any one or more of the parties themselves, entailing a joint operating organisation or a multinational carrier created by intergovernmental agreement, or b) in one or more countries that are not necessarily party to the agreement but are within a predefined group with a “community of interest”.

**Compound Annual Growth Rate**

Compound annual growth rate is the rate of increase in the value of quantity, in this study referring to foreign air tourist arrivals, compounded over several years.

\[CAGR = \left(\frac{\text{Ending Value}}{\text{Beginning Value}}\right)^{\left(\frac{1}{n}\right)} - 1\], where \(n\) is the number of years.

**Content analysis**

Content analysis is a detailed and systematic examination of material for the purpose of identifying patterns, themes or biases.

**Cooperative arrangements**

Define the right for the designated airline to enter into cooperative marketing agreements, such as code-sharing and alliances. More liberal agreements tend to allow cooperative arrangements between the designated airlines, such as code-sharing. The possibility of
entering into cooperative arrangements confers a number of commercial advantages to the carriers concerned and is considered as an indicator of relative openness in bilaterals.

Core markets
These are markets, which present the greatest opportunity from a Tourism Growth Strategy’s perspective.

Cross-sectional data
Employing this type of data, observations on individual units at a point in time are made.

Delphi technique
The Delphi technique or the Delphi is a series of sequential questionnaires or “rounds”, interspersed by controlled feedback, that seek to gain the most reliable consensus of opinion in a group of experts.

Designation
This is the right to designate one (single designation) or more than one (multiple designation) airline to operate a service between two countries. In restrictive agreements each government allows a single airline as national carrier. In more liberal agreements, multiple airlines are designated to operate services between partner countries.

Domestic cabotage
Eighth freedom or “domestic cabotage” is the right of an airline of one country to carry traffic between two points within the territory of a foreign country. Such rights have on occasion been granted when a country has a shortage of aircraft capacity.

Effective control
Defining “effective control” has generally been more difficult than defining “substantial ownership” because, while ownership is usually transparent and can often be determined by public or other records of shareholders, effective control may be exercised in a variety of ways, many of which may not be readily apparent. Moreover, effective control may be exercised by different entities, depending on the activity of the air carrier. The evidence of effective regulatory control may be predicated upon, but is not limited to the following: the airline holds a valid operating licence or permit issued by the licensing authority such as an
air operator certificate (AOC), meets the criteria of the designating party for the operation of international air services, such as proof of financial health, ability to meet public interest requirements, obligations regarding assurance of service; while the designating party has and maintains safety and security oversight programmes in compliance with ICAO standards.

**Fixed effects regression method**

Fixed effects regression method was used in this study to analyse the relationship between a dependent variable (traffic) and predictors, such as the GDP, population, trade, ALI, Low income and ASA age within an African state in the panel data set. It has the attractive feature of controlling for all stable characteristics of the states, whether measured or not. This is accomplished by using only within-state variation to estimate the regression coefficients.

**Freedoms of the sky**

The concept of “freedoms of the skies” or “the degrees of freedom” or “freedoms of the air” was initiated at the Chicago Convention, and essentially means air traffic rights, which is a set of commercial aviation rights granting a country’s airline(s) the privilege of entering and landing in another country’s airspace. The degrees of freedom have since been the basis of the amount of freedom a country has in operating over another country’s airspace, encompassing eight different freedoms which may be negotiated.

**Governance stakeholders**

These are the stakeholders, responsible for policy, enabling and regulatory legal instruments, as well as carrying out the requirements of the Chicago Convention.

**Gross Domestic Product**

The “Gross Domestic Product” (“GDP”) measures the total value of goods and services produced in a country during a specific period of time. It includes exports and dividends paid to foreigners, but excludes imports and dividends or interest received from outside the entity. The GDP is the most common measure of the level of economic activity within a particular area.
Inter-coder reliability
Inter-coder reliability or reproducibility refers to the levels of agreement among independent coders who code the same content using the same coding instrument. If the results fail to achieve reliability, this implies that something is amiss with the coders, the coding instructions, the category definitions, the unit of analysis, or some combination of these.

Intra-coder reliability
Intra-coder reliability or stability refers to the level of replication that can be expected if similar studies are undertaken, basically answering the question: “can the same coder achieve the same results try after try?” The procedure can therefore be repeated and similar groupings of statements into themes or concepts can be expected.

Investment markets
These are markets, where some investment is made for returns in future from the Tourism Growth Strategy’s perspective.

Memorandum of Understanding
Two states with an effective bilateral air services agreement may wish to make incremental modifications to the regime. Such changes could include allowing additional capacity, resolving an ongoing dispute, clarifying any ambiguities or definitions, inter alia. A total renegotiation of the agreement could be procedurally difficult for either party or both states might be satisfied with the overall framework. Under such circumstances the countries would agree to retain the original agreement but amend it as necessary. The results of the negotiations would be summarised in a Memorandum of Understanding, Record of Consultations, Exchange of Notes or similar mechanisms. A Memorandum of Understanding is a less formal type of agreement, which, notwithstanding the lesser formality, may be as binding as a formal agreement.

Millennium Development Goals
In September 2000 world leaders came together at the United Nations Headquarters in New York to adopt the United Nations Millennium Declaration, committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets with a deadline of 2015. These targets have become known as the Millennium
Development Goals. They are: 1) to end poverty and hunger; 2) universal education; 3) gender equality; 4) child health; 5) maternal health; 6) combat HIV/AIDS; 7) environmental sustainability; and 8) global partnership.

Multilateral agreement
An agreement undertaken jointly by three or more States, within the framework of an international organisation and/or multilateral treaty.

New Partnership for Africa’s Development
This is an African Union strategic framework for pan-African socio-economic development and is both a vision and a policy framework for Africa in the twenty-first century. In particular, the New Partnership for Africa’s Development addresses critical challenges facing the Continent, namely poverty, development and Africa’s marginalisation internationally.

Non-scheduled international air service
A transport service other than a scheduled service and which is normally associated with a specific flight or series of flights. Such flights are not listed in a published timetable and passenger and cargo capacity may only be offered and sold to a charterer in respect of services on routes currently serviced by scheduled services or directly to the public or through a third party under a series of prescribed conditions.

Open Skies
An “open skies” air services agreement creates a very liberal market between the two signatory nations. It allows any number of airlines from either nation unlimited rights to fly between any city-pair involving the two countries. The airline can carry revenue traffic to and from any third countries, subject to the appropriate provisions in the other agreements. This type of agreement places no restrictions on capacity, tariffs or code-sharing. Most such agreements do not allow a cabotage right, in which one airline of the signatory nation could carry wholly domestic traffic of the other country. The aeronautical and aero political definition relates to the USA liberal capacity BASA programme called “open skies agreements”. It is important to note that the international aviation community does not uniformly define the term “open skies”; differences in opinions regarding the level of
freedom allowed by air services agreements will hence result in different categorisations of such agreements.

**Panel data**
Data are termed “panel data” or “true longitudinal data” when the same units of analysis are studied over different points in time. In addition to capturing aggregate changes over time, panel data enable inferences to be drawn pertaining to changes in individual behaviour.

**Passenger air service**
A passenger air service is an air service performed primarily for the transport of passengers.

**Plurilateral agreement**
This is an air services agreement that could initially be bilateral but be capable of being expanded to involve additional parties, or could from the start involve three or more parties; in all cases parties that share similar regulatory objectives, which are not so widely held as to make feasible a typical multilateral negotiation. It would most likely be open to other states which wish to join.

**Principal place of business**
In relationship to an airline, this denotes an airline that has been established in the territory of the designated party in accordance with relevant national laws and regulation, has a substantial amount of its operations and capital investment in physical facilities in the territory of the设计ating party, pays income tax, registers and bases its aircraft there and employs a significant number of nationals in managerial, technical and operational positions.

**Quantitative Air Services Agreements Review**
This is a database developed by the WTO Secretariat which includes 1) regulatory information on bilateral air services agreements and 2) scheduled air passenger traffic data. The regulatory information on bilaterals is drawn from the ICAO’s World Air Services Agreements Database that contains codified summaries of the provisions of around 2 000 bilaterals and covers 184 ICAO contracting States. Scheduled air passenger traffic data by
city-pair were provided by IATA for 2005 on the understanding that exact passenger numbers would remain confidential and that only traffic ranges would be disclosed.

**Reciprocity**

The granting of a right or a benefit by a state to a foreign entity such as an air carrier when it has no international obligation to do so, on the condition that the same treatment will be accorded to its comparable entity (entities) by the home state of that foreign entity.

**Revenue Passenger-Kilometre**

One revenue passenger-kilometre is defined as one fare-paying passenger transported one kilometre. This is a measure of an airline’s passenger traffic.

**Safety and security regulatory functions and requirements**

These are policies, legislation and requirements to achieve an appropriate level of safety and security in air transport systems both on the ground and in flight.

**Scheduled international air service**

This is a series of flights that possesses all of the following characteristics: 1) it passes through the airspace over the territory of more than one state; 2) it is performed by aircraft for the transport of passengers, mail or cargo for remuneration, in such a manner that each flight is open to use by members of the public; and 3) it is operated so as to serve traffic between the same two or more points, either according to a published timetable or with flights so regular or frequent that they constitute a recognisable systematic series.

**Society stakeholders**

These are stakeholders, which comprise groups outside the civil aviation system, but have a direct interest in what goes on inside the system and what the system produces. This group includes passengers, enterprises which use freight services, environmental groups and residents near airport, organised labour and the news media.

**Substantial ownership**

In the context of a) South African air carriers, means at least 51% of voting rights (in terms of shares) in respect of such an air carrier to be held by the South African government and/or South African residents, and of b) foreign air carriers, means at least 51% of voting
rights (in terms of shares) in respect of such an air carrier to be held by the government and/or residents of the relevant country.

**Tactical markets**
These are markets, which should be considered for specific, tactical opportunities from a Tourism Growth Strategy’s perspective.

**Tariff approval**
This refers to the regime which governs the approval of the pricing of air services between two countries. The most restrictive regime is *dual approval*, whereby both parties have to approve the tariff before it can become effective. Semi-liberal regimes are *country of origin* (tariffs may only be disapproved by the country of origin), *dual disapproval* (tariffs have to be disapproved by both countries to make them ineffective) and *zone pricing* (parties agree to approve prices falling within a specific range and meeting certain characteristics). *Free pricing* is the most liberal regime, whereby tariffs shall not be subject to approval by any party.

**Time-series data**
Employing this type of data, different units of analysis are studied over different points in time.

**Tourism**
According to the World Tourism Organisation’s definition, tourism encompasses the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes.

**Tourist**
A tourist or overnight visitor is a visitor who stays at least one night in collective or private accommodation in the place visited.

**Traveller**
A traveller is somebody who moves between different geographic locations for any purpose and any duration.
UNIVISA
This refers to the proposed single visa for SADC.

Watch-list markets
These are markets that need to be watched for value segments from Tourism Growth Strategy’s perspective.

Withholding or ownership of airline
This defines the conditions required for the designated airline of the other party to have the right to operate. Restrictive conditions stipulate that the designated airlines have to be "substantially owned and effectively controlled" by nationals, entailing that the designated airline is the "flag carrier" of the foreign country. More liberal regimes are those of community of interest and principal place of business.

Yamoussoukro Decision
Yamoussoukro Decision or Decision means the “Decision Relating to the Implementation of the Yamoussoukro Declaration concerning the Liberalisation of Access to Air Transport Markets in Africa”, which entered into force on 12 August 2000 and was ratified by 44 African states. The Decision became fully binding on 12 August 2002.