

TECHNISCHE UNIVERSITÄT CHEMNITZ

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**About the underwhelming relationship between air traffic and
economic development of regions**

WWDP 118/2014

ISSN 1618-1352 (Print)

ISSN 1618-1360 (Internet)



TECHNISCHE UNIVERSITÄT
CHEMNITZ

FAKULTÄT
FÜR
WIRTSCHAFTSWISSENSCHAFTEN

Impressum:

Herausgeber:

Die Dekanin der
Fakultät für Wirtschaftswissenschaften
an der Technischen Universität Chemnitz

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ISSN 1618-1352 (Print)

ISSN 1618-1360 (Internet)

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Abstract

Aviation traffic forecasts and airport analyses are important instruments which influence decisions on aviation related infrastructure. Behind many of such infrastructure projects, which are supported by forecast analyses, one finds political interests. This is especially the case for aviation projects, such as infrastructure enlargement projects of airports, which are motivated by distinct goals and desires. Referees who act within this framework are exposed to the risk of producing biased results. The form and degree of intensity of such influence and manipulation, as well as the methodology of such forecast analyses, are the subject of this working paper. To begin with, newer research results by the OECD and the EU have been formulated and further compared to results of studies commissioned by airport operators. Subsequently, the degree of intensity of such influence has been analysed on the basis of our own research. A survey was thereby produced, investigating the application of neutral and non-neutral studies in the decision-making processes of the public administration in the Rhein-Main-area. *Impact studies*, which are currently the most used method, have been segmented and compared with studies using *full cost-benefit-analysis*, the recommended method by the FAA. With regard to these results, it can be argued that most forecast analyses are produced by private consultancies, by order of public entities but also by order of airport operators. The independence of such research and its results is therefore endangered. Recent OECD and EU research results have shown that eventual effects, such as regional economic stimulus and employment growth, are absent. Thus, care in the application of study results in this field is necessary. However, the majority of policy makers (in Germany) unfortunately base their decisions mostly on non-neutral studies. Historically seen, this is not a novelty. Regarding the research design, *impact studies* are hardly suitable for airport studies. Further, it can be shown that *impact studies* incorporate mostly only non-negative items in their cash flow calculations, compared to *full cost-benefit-analyses* which incorporate all relevant items. A number of systematic flaws are further identified. The regulation-guidelines by the FAA, which demand to incorporate all items, have had little impact on the research design of airport studies in the US so far. The promotion and fostering of *full cost-benefit-analyses* is necessary to lift the quality of airport studies.

Keywords: air traffic, forecast, infrastructure projects, full cost-benefit-analysis, impact studies, economic growth, regional economic growth, stimulation of the regional economy, employment promotion.

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Zusammenfassung

Luftverkehrsprognosen stellen ein wichtiges Instrument dar, die Luftverkehrsinfrastruktur zu beeinflussen. Hinter vielen der Projekte, die von Luftverkehrsprognosen begleitet werden, stehen Interessen. Dies gilt insbesondere für Ausbauprojekte von Flughäfen, die von eindeutigen Zielen und Wünschen getragen werden. Die Gutachter, die im Rahmen solcher Ausbauprojekte tätig werden, sind der Gefahr ausgesetzt, beeinflusste Prognosen zu erstellen. Die Art und Intensität dieser Beeinflussung sowie die Methodik dieser Analysen sind Gegenstand dieses Aufsatzes. Zunächst wurden neuere Ergebnisse der OECD und EU erarbeitet und denen der Flughafenstudien gegenübergestellt. Nachfolgend wurde die Intensität der Beeinflussung auf Grundlage einer eigenen Untersuchung analysiert. Dabei wurden politische Entscheidungsträger im Rhein-Main-Gebiet nach ihrer Verwendung von Studien und deren Ergebnisse befragt. Die *Impact Study*, als häufigste Forschungsmethodik, wurde in ihre Bestandteile zerlegt und mit der *Full Cost-Benefit-Analyse*, welche die durch die FAA empfohlene Methode ist, verglichen. Grundsätzlich sind solche Gutachten meist externe Analysen aus privatwirtschaftlicher Hand, die einerseits im Auftrag von regionalen Entscheidungsträgern, aber andererseits auch im Auftrag von Flughafen- und Fluggesellschaften angefertigt wurden. Die Unabhängigkeit der Prognosen ist damit gefährdet. Auf Grundlage der (neutralen) OECD- und EU-Ergebnisse zeigte sich, dass etwaige regionale Wirtschaftsimpulse und damit einhergehendes Beschäftigungswachstum durch erhöhten Flugverkehr nicht zu finden sind. Die kritische Analyse von „bezahlten Studien“ ist demnach von Bedeutung. Die Mehrzahl der politischen Amts- und Entscheidungsträger in Deutschland trifft allerdings Entscheidungen auf Basis keiner oder ausschließlich nicht-neutraler, bezahlter Auftragsstudien. Historisch betrachtet ist dies kein Novum. Bereits in den 60er Jahren kann man solche Studien und Entscheidungen nachweisen. Bezüglich des Forschungsdesign zeigte sich, dass *Impact-Studien* kaum für die Beurteilung des Luftverkehrs geeignet sind. Sie beziehen die relevanten Effekte nur teilweise in ihre Berechnungen ein. Es wurde eine Reihe von systematischen Fehlern identifiziert. Die FAA-Richtlinien in den USA für methodisch korrekte Studien greifen nur wenig. Für weitere Forschung sehen wir die wichtige Aufgabe, die Methodik der *Full Cost-Benefit-Analyse* für die Prognose möglicher Effekte zur Anwendung zu bringen.

Schlagnworte: Luftverkehr, Prognosen, Full Cost-Benefit-Analyse, Impact Studies, Wirtschaftliches Wachstum, Regionale Wirtschaftsförderung, Auftragsstudien

Why are employment figures in airport studies too high?

About the underwhelming relationship between air traffic and economic development of regions

Introduction

This paper aims to investigate the following question: Does air traffic generate more employment compared to other economic activities and public projects? And if not, why are suggested employment figures in studies commissioned by airport operators always positive and extremely high?

- On the one hand, empirical research evidence has been produced in the literature that supports the argument that airports in the US and elsewhere generate employment growth, a rise in personal income and GDP in the region. However, these figures are solely based on studies commissioned by airport operators.
- On the other hand, most recent research results of the OECD and EU beg to differ entirely. The OECD has performed meta-studies regarding these questions, by incorporating all available studies, and came to the conclusion that there is “no significant impact on output” and an “absence of robust findings on growth effects”.¹

Generally, one could immediately recognize the striking differences between the OECD research results and the research results produced by advisors to airports and airlines operators. The recent turnaround has thus led to renewed discussions among the researchers and builds the foundation for the present paper.

Our research

The alleged research evidence produced by studies of airport operators has been subject to our research study. In order to comprehend and investigate these differences, the following questions have been raised in the scope of the present work:

- Why are the figures in studies commissioned by airport operators (“airport studies”) so high and differ from OECD results?
- What is the purpose of producing extremely high employment figures?
- How influential are studies of this kind?

Before answering these questions, recent findings of the OECD- and EU-research concerning local employment effects of air traffic have to be looked at and discussed. In a recent meta-study OECD researchers were astonished to finding a very small, negligible impact of air traffic on regional economic growth. The OECD expressed its surprise by using the phrase “underwhelming

¹ OECD, 2013, p. 103

results" and asked „*What exactly is the potential contribution that investment in transport infrastructure can make to productivity and output growth?*”² The answer was: „*Attempts have been made to measure this contribution empirically, with somewhat underwhelming results.*”³ The research results were: „*no significant impact on output*“ and an „*absence of robust findings on growth effects*”.⁴

These findings are not only surprising as they are in sharp contrast to the findings of studies supporting aviation projects, but further, they are novel as in theory infrastructure has been known as a basic necessity for modern economies. Essentially, a general growth-effect should have been found by the empirical research. The OECD blames *lobbying pressure* by large infrastructure operators as the main cause for this outcome and surprise turnaround. These operators tend to put pressure on political actors at each level of authority in order to promote further growth of *their own* business infrastructure. Social returns and welfare of the local regions and its citizens seem somewhat forgotten by these lobby groups. They do not care about social welfare – they care about their projects. The results can be small profit rates and small social returns of the investments: „*In reality, large infrastructure users can have substantial bargaining power over what infrastructure they require. ... They influence the ultimate economic returns from infrastructure investment. ... Project selection is subject to political economic pressures that reduce the overall social returns from infrastructure investment*”.⁵

Studies commissioned by the European Union (EU) obtained similar results on the basis of their meta-studies. And, they further strengthen the findings by the OECD studies. In addition, the EU had an interesting project on the *causality* of economic growth and air traffic. Simplified, they asked the elementary question: what causes what? The result has been twofold: First, in core regions of the EU economic growth causes air traffic. Secondly, there is no sign that air traffic could cause economic growth. Only in very peripheral regions the opposite can be the case.⁶

² OECD, 2013, p. 103

³ OECD, 2013, p. 103

⁴ OECD, 2013, p. 103

⁵ OECD, 2013, p. 103

⁶ Vgl. Mikkala/Tervo, 2012, p.3.

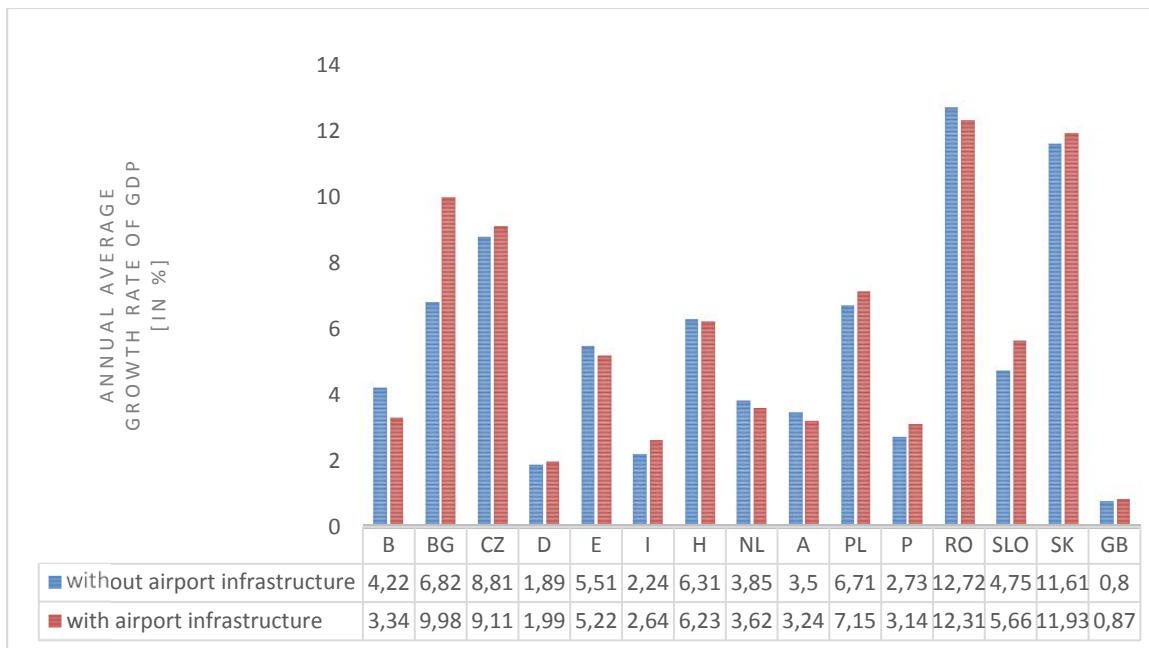


Figure 1 GDP growth rates in Nuts-2-regions with and without commercial airports

Source: Eurostat, 2001 - 2010.⁷

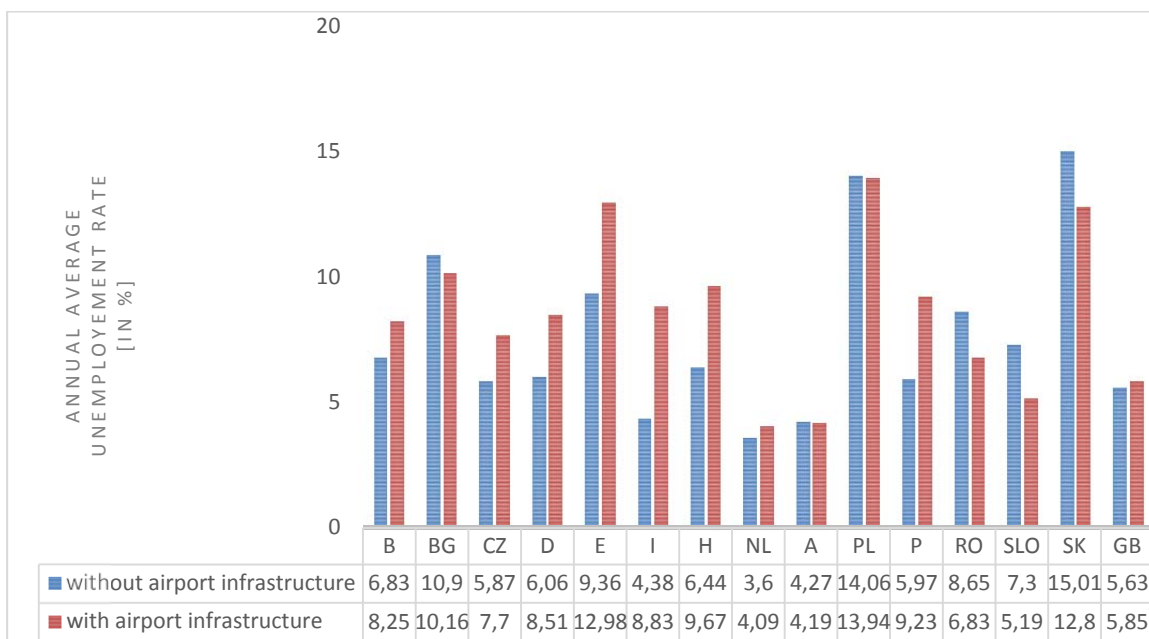


Figure 2 Rate of unemployment in Nuts-2-regions with and without commercial airports

Source Eurostat, 2001-2010⁸

⁷ Vgl. Steigert, 2014, p. 52

⁸ Vgl. Steigert, 2014, p. 56

Figure 1 and figure 2 present growth rates of GDP and respectively unemployment rates in all so-called European “Nuts 2” regions in various European countries. These regions have further been split into regions with and without commercial airports. For these regions growth rates of GDP and unemployment rates have been sourced from Eurostat data. The analysis shows, in accordance with the OECD, that there is no larger increase in economic growth rates for airport-regions than for no-airport-regions. And respectively, concerning the unemployment rate, the figures show higher unemployment rates in most of the airport-regions. To sum up, these results and figures illustrate, at least to some extent, why the OECD concluded that there are “no growth effects” and “no employment effects” found for air traffic.

How influential are airport studies?

This conclusion by the OECD raises questions about how influential expert opinions commissioned by airport operators are. Or in other words, how influential are expert studies performed under the authority of airport operators? These particular studies are referred to as “airport studies”. To answer this, the present study identified different political parties and organizations in the Rhein-Main-area in Germany who often mentioned employment effects of airports, air traffic, and furthermore who helped airports in pursuing enlargement projects. These pre-categorised organizations have been asked the following question: “What is the source of your information about employment effects of airports?” Figure 3 shows the results. All political parties and organizations, except Lufthansa, based their employment growth estimates on only two studies commissioned by the Frankfurt airport operator. Not a single neutral research result was mentioned and thus included in their decision making process. Interestingly, the Industrie- und Handelskammer Frankfurt, the chamber of commerce in Frankfurt, mentioned no study at all but referred to the department of “political communication” of Frankfurt airport for further information. Needless to say, on the basis of these results employment figures can be considered political figures and are mostly subject to marketing rather than scientific research.

Institution	Source
Hessische Landesregierung	Study of Fraport AG G 19.1; G 19.2
Industrie und Handelskammer Frankfurt	Refers to Fraport AG department „Political Communication“
CDU Hessen	Study of Fraport AG G 19.1; G 19.2
FDP Hessen	Study of Fraport AG G 19.1; G 19.2 Further studies of analyst of G 19.2
Fraport AG	Study of Fraport AG G 19.1; G 19.2
Lufthansa AG	Study of the Airports Council International ACI

*Figure 3 Responses of local political actors in the Rhein-Main area to the following survey question: “What is the source of your information about employment effects of airport?”
Source: Survey done by Hans Schinke 2012*

When taking everything into consideration, the most important and thus most influential political entities in the Rhein-Main-area which support and promote the enlargement of the airport do not rely on any neutral scientific research results. They neglected such research results and solely based their opinions and public policies on predetermined so-called "paid-for-studies". This result prompts questions on how important such studies can be in any decision making process in public policy. Despite the fact that their neutrality is clearly questionable, they also give politics and institutions an argument, as a seemingly proven fact, and a reason to follow their own ends. It is clearly not the purpose of these studies to show what is right or wrong but to underline what politics wants to do and what should be done in the light of specific interests.

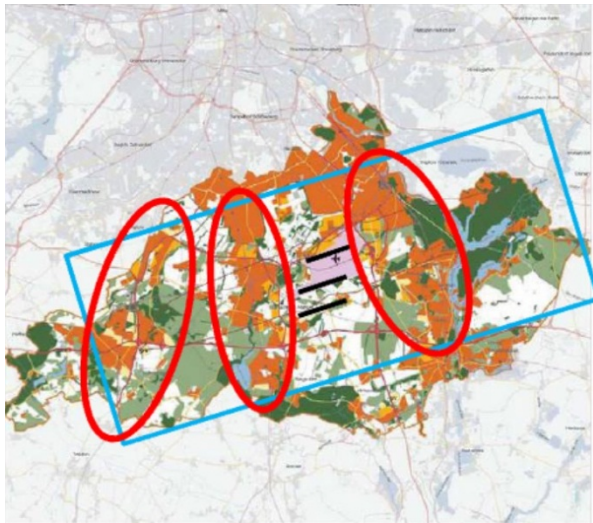
The history of airport studies

Their practises are however no novelty in this matter. In the following, the history of airport studies has been investigated to show how airport studies have developed and transformed over time. The oldest German study available dates from 1965. In that year, politics in the German federal state of Hessen wished to support the Frankfurt airport operator against allegations from local citizens, regarding a growing number of complaints in the neighbourhood of an airport. The reason for such a study to be conducted was to find an argument that could be stronger than civil sufferings due to noise and worsening living conditions in the villages around the airport. But which argument could be strong enough? The answer was, however, found quickly, employment and regional economic growth! The acting Minister as a representative of the federal state of Hessen argued that the airport would be the *cause* for and source of economic growth in the Rhein-Main-area. He further argued for a causality between airport size and economic growth in the way that the airport would generate more growth in the region, the *bigger* it was in size. And therefore, he concludes, it would be necessary to *expand* the airport without considering the externalities, and more specifically the social costs of *aviation noise*.

The 1965 study strongly emphasis the business side related issues of the public project. Specific information about companies related to the airport and project related spending were at the forefront of the study. However, no proof and no causality that the airport promotes regional or national GDP growth and a rise in employment in the region was produced by the study. In contrast to the empty evidence, the introductory remarks by the Minister of Finance and Traffic of the German federal state of Hessen pretend that the study would have given proof to such causality. In order to support these remarks those responsible for the execution of the study have produced several severe mistakes within the study to further boost the outcome of the turnover and investment.

The linkage between aviation noise and air pollution on the one hand and employment and economic growth on the other is found world-wide today. Everywhere politics tries to influence people in such a way that they could get jobs only together with a package consisting of air traffic and noise. In the US one can read: „*Hearing a plane overhead is an everyday occurrence. But how many people stop to think that what they are really hearing is the sound of Central Ohio's economy*

in motion? This report highlights the significant economic benefits that Central Ohio receives each year from the Columbus Regional Airport Authority's (CRAA) three airports.⁹



„27 Millionen Passagiere, 73.000 Jobs: Der neue Flughafen Berlin Brandenburg International beflügelt den Arbeitsmarkt.“

In English:

„27 mill. Passengers, 73.000 Jobs: the new airport BER promotes the labour market.“

http://www.berliner-akzente.de/jobs_karriere/jobs-am-flughafen-berlin-brandenburg-international.php

Figure 4 (on the left) Airport BER Berlin: noise affected villages and (on the right) employment argument by the public administration

Figure 4 shows the current situation in Berlin where the immensely enlarged airport Schönefeld (BER) negatively affects dozens of villages and hundreds of thousands of people. The same structure of arguments as in 1965 was used: the airport would allegedly accelerate economic growth and create further employment. The foundation of this argument builds a study commissioned, i.e. paid for, by the airport operators.¹⁰

Airport Impact Studies

Regarding the outcome of impact studies, the following research question has to be raised: How do the researchers in studies commissioned by airport operators *prove* the employment figures they are forecasting?

In the 1965 study no proof could be identified. Further, the attitude towards profound scientific reasoning has been changing constantly. In most studies, *an* attempt to prove employment figures could be recognised. In this respect, few analysts chose individual methods. Most researchers, however, used one specific method which is known and applied worldwide: the so called *impact study*. Originally, the impact study was used to assess the outcomes, results and consequences of a clearly recognisable external event to a specific environment. One often used exam-

⁹ Vgl. <http://columbusairports.com/about-us/economic-impact/>

¹⁰ The results of the study are presented by the airport operator as follows: „Der Kölner Verkehrswissenschaftler Herbert Baum prognostiziert in einer Studie, dass durch den Betrieb des Flughafens BBI und den damit verbundenen Kaufkrafteffekt künftig bis zu 40.000 neue Arbeitsplätze entstehen könnten. Mit den Standorteffekten für die Region, die der neue Flughafen mit sich bringt, sei die Gesamtbeschäftigungszahl sogar noch deutlich höher: Die Studie rechnet mit 73.000 neuen Arbeitsplätzen.“ http://www.berliner-akzente.de/jobs_karriere/jobs-am-flughafen-berlin-brandenburg-international.php

ple is man-made pollution. Here, the quality of being a truly external event to the environment is essential.

This characteristic poses difficulties for airport studies discussed in this paper. In the case of employment and economic growth promoted by the enlargement of airports, the same quality cannot be guaranteed. The enlargement of the airport itself is not a critical, definable event for economic growth and employment development studies. The airport is only a prerequisite. The critical event is rather defined as, whether people shift their personal income spending towards *using* the local airports to fly to some remote destination or not. And when they shift their income spending behaviour, by logic, it would have to translate into income losses for some of the local industries (meaning those where they would have spent their income initially, before the shift), while economic gains can be found for other businesses related to post-increased aviation needs (meaning those business which receive larger capital inflows after the shift, i.e. in this case airport and airline operators). The resulting net effect of this shift on employment development and economic growth might be positive, negative or even neutral. The result mostly depends on the different labour productivities in the various industries affected by the shift.

Such analyses are difficult to perform flawlessly. Besides, there is much political pressure to get the politically "right" results. There is the constant fear of manipulation. In order to set bounds to research manipulation, the US Federal Aviation Administration (FAA) has used its regulatory power and established written guidelines regarding the scientific approach to aviation related research. These guidelines recommend and require a truly all-inclusive scientific approach and demonstrate how to handle the methodology adequately. The quality of regulation can however not only be measured in the quality of the guidelines itself but in the quality of the executive power of the authority. It is therefore not surprising that these guidelines are seen somewhat free to one's own interpretation. In fact, no one seems to follow these guidelines. In the scope of this research dozens of expert opinions and studies commissioned by airport operators have been analysed and none had met the requirements of how to handle various scientific problems correctly and flawlessly.

To give an example, there are numerous critical facts relating to scientific research, one of which is the question of how a region would have developed, should an airport not receive subsidies or even receive no approval for the enlargement project. In many studies analysts suggest the following causal indication: should the airport not be enlarged, no income and no employment could be found at all. One group of analysts mentions this argument and declares it as a central "assumption". Others regard the argument as evident and don't even mention or discuss it further. All this can be found in airport studies despite the fact that the use of such an assumption is against the FAA guidelines. Here it says: "*Impacts should represent economic activities that would not have occurred in the absence of the airport. In the absence of the airport the region might have developed alternative modes of business.*"¹¹

¹¹ FAA 1992

A third group of analysts, however, distinguishes between two cases: base case (in German: "Nullfall") and project case ("Planfall").¹² This approach is nearly consistent with the FAA guidelines. Despite this approximation, these analysts often fail again in adequately examining the origin of the capital inflows which the enlarged airport spends on the project case rather than on the base case. For instance, it is important to investigate the question of where the capital has been shifted from. But in most cases, the additional capital is simply provided. The source is disregarded entirely. This does not constitute proper handling and is in fact against FAA guidelines.

Construction of Impact Studies

In the following the structure of the impact studies is examined by asking the question: How are impact studies usually "constructed"?

In the scope of this research more than 30 studies have been thoroughly analysed and the following typical patterns were found:

1. *Broad aim of study*: In the beginning a very broad, profound purpose of study is being stated.
2. *Silent focus reduction*: In the next step the focus of the study is narrowed. Techniques are used which do not attract attention. Often important limitations are mentioned in footnotes.
3. *Reduced analysis*: The core of the research is a very limited reduced analysis, usually the input-output-model with important omissions.
4. *Result presentation*: The final step is the presentation of results. The authors return to their initial broad, profound aim, failing to mention all the restrictions and limitations of their research.

Examples for such "broad aims" are as follows: „*Ermittlung der wirtschaftlichen Wirkungen*“ (in English: The investigation of the economic impact), „*Volkswirtschaftliche Bedeutung der Regionalflughäfen*“ (in English: The economic relevance of regional airports), „*National Economic Impact*“, „*Fundierte Darstellung der mit den Unternehmen an regionalen Verkehrsflughäfen und Verkehrslandeplätzen verbundenen Arbeitsplätze*“ (in English: The presentation of regional aviation related employment figures on the basis of regional airports and landing sites).¹³

This broad aim is followed by a silent focus reduction: „... according to the methodology of the Airports Council International (ACI 2000) ...“, „... using a standard econometric modelling process that has been approved by the Federal Aviation Administration“, „Federal Aviation Administration guidelines were followed during the analysis of economic impacts of airports“, „nearly all studies use this assumption“, „Ausgaben der Outgoing-Touristen können in der vorliegenden Studie we-

¹² This method affords practically three distinct calculations – one for each case and a third calculation for the effects of the difference in spending in the two cases.

¹³ Thiessen, 2013, Thiessen, 2014

gen fehlender Daten nicht bestimmt werden. (in English: "Expenditure of outgoing-tourists cannot be considered due to lack of data). "¹⁴

¹⁴ Thiessen, 2014

**Items of Full Cost Benefit Analysis versus Items in Airport Impact Studies
In Accordance with the Methodology of the Airports Council International
ACI (2000)**

1. + Ausgaben der Luftverkehrswirtschaft (Tickets, Subventionen)	1. Expenses of the air traffic industry (flight ticketing, subsidies)
2. - Entzogene Ausgaben in anderen Branchen	2. Deducted expenses in other industry branches
3. + Ausgaben der Reisenden am Airport (non-aviation-Geschäft)	3. Private spending of travellers at the airport (non-aviation business activity)
4. - Entzogene Ausgaben in anderen Branchen	4. Deducted private spending in other industry branches
5. + Ausgaben der Incoming-Reisenden im Inland	5. Private spending of incoming travellers locally or in-country
6. - Entzogene Ausgaben der Outgoing Reisenden	6. Deducted private spending of outgoing travellers
7. - Schäden durch Schadstoffe	7. Damage and pollution from dangerous substances
8. - Schäden durch Lärm	8. Damage from aviation noise
9. - Subventionen, Steuern	9. Subsidies, taxes
10. +/- katalytische Wirkungen in der Flughafenregion (positiver Strukturwandel, negativer Strukturwandel)	10. Catalysing effects in the airport region (positive or negative structural change)
11. +/- katalytische Wirkungen in Nachbarregionen	11. Catalysing effects in neighbouring regions

*Figure 5 Items of a Full Cost-Benefit-Analysis versus Items of an Airport Impact Study
In accordance with the methodology of the Airport Council International
Source: ACI 2000, ACI 2004, Thiessen 2014*

Figure 5 highlights the omissions usually used. The input-output-model is the central methodology of impact studies. Due to its concentration on cash flows the input-output-model naturally has a limited focus. But the structure that the airports council international (ACI) proposes in his publications ACI 2000 and ACI 2004 is even more reduced and limited. Figure 5 points out the difference between the ACI proposed structure (including items 1, 3, 5, 9, 10) and the items a full cost-benefit-analysis would require. The latter is consistent with the FAA-guidelines. On this basis, it can be argued that most of the items and especially the items negative in direction are never being used in impact studies commissioned by airports.

The consultants

Finally, the characteristics of consultants offering such impact studies will be analysed. Hereby, the following question will be discussed and answered: Who are these consultants in general? And, what are their aims when offering impact study?

Primarily in Great Britain and the US a tandem of two companies, one consultant specially working for the air traffic industry and one economic research institute, usually produces such impact studies. The latter offers the data and research methodology whilst the consultant "guides" the

results. For instance, whilst the Oxford Economics institute works independently, York Aviation LLP, whom classifies itself as “the consultancy for the airport business”, works together with the London East Research Institute (Univ. of East London). Another example could be the tandem of aviation-consultant Campbell Hill Aviation Group and DRI-Wefa.

On the internet presentation of Oxford Economics the following is defined as a business goal, „*influencing decision-makers*“. Further, such interesting remarks are produced by Oxford Economics, such as “*we can creatively apply economic principles to nearly any issue*”, or „*We even explored how aviation helps the orangutan population in Borneo and the Amazon rainforest in Brazil.*”¹⁵ Other consultants of the same industry talk about the “*client results*” which they are willing to proof. And Martin Associates, another consultant for airports and airlines, presents his studies with the words: “*They receive critical acclaim from clients, public officials and the press, citing the defensibility, thorough analysis, and clear presentation of the results.*”¹⁶

The screenshot shows the 'Aviation Economic Impact Calculator' interface. It includes a navigation menu with options like 'Traffic & Cameras', 'Projects', 'Business', 'Environment', and 'Maps & Data'. A search bar is present. The main content area has a 'Disclaimer' section and a table with the following data:

Airport Name	FAA Site Number	Year	Counties in the Economic Impact Region
Anderson Field	26123-1A	2010	Okanogan

Below the table are five buttons: 'Fuel Sales Offered At Airport', 'Changes in Flight Activity', 'Changes in Business Activity', 'Changes in Cargo Activity', and 'Capital Projects'.

Figure 6 Automatic Economic Impact Calculator on the basis of input-output-analysis
Source: Washington State Department of Transportation

In this context, the “automatic input-output-analysis-system” by the Department of Transportation of the State of Washington is the latest development to be discussed within the scope of this research study. The department of transportation recently presented a system that automatically calculates employment and income effects on the basis of a reduced input-output-method. The system user has to choose one of the airports of the state and can then hypothetically manage his own enlargement project by, among others, adding additional runways, installing new build-

¹⁵ Quelle: <http://www.oxfordeconomics.com/thought-leadership/research-techniques/quantitative-and-economic-analysis/overview>

¹⁶ Quelle: <http://www.martinassoc.net/services2.htm>

ings, selling more fuel. The programme automatically calculates, on the basis of the user's applied parameters, how much additional employment would be created, how much additional income would be spread over the region and how much more tax income would be generated for the local governments. By neglecting most rules of the FAA, the programme is not in accordance with FAA guidelines. However, the FAA is yet to file a complaint. This seems highly unlikely, as the FAA itself sees one important advantage of these activities, „*to generate and sustain public support for airports*“.¹⁷

Conclusions

To conclude, in 2013 the OECD finalized a survey of the literature on employment-effects of airports. The results were surprising. Air traffic infrastructure has on average no employment-effects and further no economic growth effects on the regional economy. This is in sharp contrast to studies commissioned by airport operators, where the enlargement of air traffic infrastructure usually creates a large rise in employment, income and tax revenue. By analysing these studies available, systematic errors were identified. But more so, the presented findings argue that the aviation industry as whole and related research institutes are eager to produce "*client results*", most of which aim to influence decision makers and the public to their own benefit. In this respect, the presented employment-figures are not based on scientific research but rather are subject to marketing and power plays in the interest of industries and infrastructure operators.

¹⁷ FAA, 1992, p. 15

Related Literature

The following list of related literature presents the cited articles plus additional studies that inform about the relationship between economic development of regions and air traffic as well as a small sample of airport impact studies.

ACI, 1998, Creating prosperity and employment in Europe, Airports Council International, Genf

ACI, 2000, ACI world report, Airports Council International, Genf

ACI, 2002, The economic impact of US Airports 2002, Airports Council International, Brüssel

ACI, 2004, The social and economic impact of airports in Europe, Airports Council International, Brüssel

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