The impacts of the planned air passenger duty in Germany

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The impacts of the planned air passenger duty in Germany

1. Introduction
2. Modelling Approach
3. Results
4. Conclusion
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1. Introduction

- 6th/7th June 2010: Budget Consolidation Conference of the Federal Government
- Plans to introduce an air passenger duty to raise €1 billion annually
- 1st draft bill 16th July 2010: €13 per short-haul departure, €26 for all other departures
- 2nd draft bill 13th August 2010: €8 short-haul, €25 medium-haul, €45 long-haul
- Passengers to be taxed according to final destination principle
- Tax to be levied for all passengers initially departing from German airports
- No double taxation for passengers with origin Germany and with transfer in Germany
- Transfer passengers not starting their journey in Germany will not be taxed
- Bill currently in the legislative process, changes possible!
1. Introduction

Examples for the intended application of the German APD

<table>
<thead>
<tr>
<th>Ursprungsflughafen</th>
<th>Transferflughafen</th>
<th>Zielflughafen</th>
<th>Luftverkehrsabgabe laut Referentenentwurf</th>
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</thead>
<tbody>
<tr>
<td>Frankfurt</td>
<td></td>
<td>Moskau-Domodedovo</td>
<td>8 €</td>
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<td>New York-Newark</td>
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<td>Frankfurt</td>
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<td>Dubai</td>
<td>25 €</td>
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</table>
1. Introduction

Distribution of passengers in the different intended APD classes

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic definition</td>
<td>Short-haul Domestic, Intra-Europe and Northern Africa</td>
<td>Medium-haul Northern Africa, Arabia, Central Asia</td>
<td>Long-haul Sub-Saharan Africa, Asia, Americas, Pacific</td>
</tr>
<tr>
<td>Number of enplaned passengers in 2008</td>
<td>62.3 million</td>
<td>2.9 million</td>
<td>8.9 million</td>
</tr>
<tr>
<td>Expected revenues (without demand effects)</td>
<td>€ 498.4 million</td>
<td>€ 72.5 million</td>
<td>€ 400.5 million</td>
</tr>
</tbody>
</table>
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1. Introduction

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2. Modelling Approach

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<td>€ 13 / € 26</td>
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<tr>
<td>€ 8 / € 25 / € 45</td>
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</table>

Airport Choice Model

Reduction of demand

Shift of demand to foreign airports

Input-Output Model

Gross Value Added

Employment

Tax Revenue

Social Security
2. Modelling Approach

- Airport choice: alternative airports potentially to be considered by airlines and passengers
  - Esbjerg
  - Billund
  - Szczecin
  - Karlovy Vary
  - Salzburg
  - Innsbruck
  - Zurich
  - Basel-Mulhouse
  - Strasbourg
  - Metz-Nancy
  - Luxemburg
  - Maastricht
  - Eindhoven
  - Amsterdam
2. Modelling Approach

Airport choice model

- Data input: German air passenger survey 2008
- Nested logit model with three airport classes
- Airport choice dependent on access cost, access time and quality of supply at airports, measured by destination and frequency
- Assumption: Full pass through of air passenger duty, air fares for departures from German airports increase accordingly, air fares from foreign airports remain constant

- Modeling of two parameters:
  1. Reduction of air transport demand, due to shift to other modes or not travelling at all
  2. Shift of demand to foreign airports
2. Modelling Approach

Assumption: Full pass-through of the APD, perfect competition, no capacity constraints

Source: DLR, based on Forsyth/Gillen (2007)
2. Modelling Approach

Alternatives to the assumption of a full pass-through of the APD - Monopoly

\[ p_m^* - p_m < t \]

Source: DLR, based on Forsyth/Gillen (2007)
2. Modelling Approach

Alternatives to the assumption of a full pass-through of the APD – Effects of capacity constraints

![Diagram showing the relationship between price, demand, capacity limit, marginal costs, and marginal costs + tax.]

Source: DLR, based on Forsyth/Gillen (2007)
2. Modelling Approach

Input-Output Model

- Data input: Input-Output tables provided by the German Statistical Office
- Open Leontief Model
- Regression to estimate the influence of passenger numbers on gross value added, tax revenue
- Additional data from official statistics to estimate additional social security expenses (e.g. average duration of unemployment)
- Not included: 2nd order effects, e.g. how money formerly spent on air travel will be used (alternative domestic spending such as cinemas, restaurants, consumer goods...)}
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Airport Choice Model

- An increase of €1 in the air passenger duty reduces the number of departing passengers at German airports by 160,000 for domestic and intra-European flights and 30,000 for intercontinental flights.

- Total reduction of departing passengers with an air passenger duty of €8 / €25 / €45: 2.5 million

- Demand reduction: 1.6 million departing passengers

- Shift of demand to foreign airports: 0.9 million departing passengers
3. Results

Input-Output Model

- Gross revenue of APD: € 928 million
- Total reduction in Gross Value Added: € 900 million
- Jobs lost: 12,850
- Increase in social security payments: € 115 million
- Decrease in contributions to social security: € 157 million
- Reduction in tax revenues:
  - Federal government (Bund): € 118 million
  - States (Bundesländer): € 87 million
  - Municipalities (Gemeinden): € 32 million
3. Results

Further issues

- Some airlines can replace lost OD-passengers by international transfer passengers, while others cannot
- Different effects depending on airport: e.g. Frankfurt in the middle of the country plus high share of transfer passengers vs. Hahn with low-cost traffic only and close to the border
- Ryanair and easyJet can easily rebase aircraft in other European markets
- German low cost carriers are less flexible due to focus on German market
- Probably no effects on cargo
- Legitimation of new tax with environmental reasons, but a domestic round trip is taxed with € 19 (APD+VAT), but a round trip to Vladivostok is taxed with € 8
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4. Conclusions

- Several countries have refrained from introducing an air passenger duty or have abolished it, e.g. Belgium, Denmark, Malta, The Netherlands

- APD introduced in Ireland and continuously increased in the UK ⇒ islands have less airport competition from abroad

- Net tax revenue after taking into account tax effects are less than half of planned revenue (€ 421 million vs. € 1 billion)

- Only the Federal government will benefit from tax revenues, but tax losses will also affect States (Bundesländer) and municipalities (Gemeinden)

- All estimations in the models follow conservative assumptions

- Worse effects can appear, when airlines decide to re-base aircraft, particularly from low-cost airports close to the border

- Worst case if aircraft are re-based at foreign airports close to the border, as attractiveness of these airports will increase