

# **The impacts of the planned air passenger duty in Germany**

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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

Ursprungsflughafen	Transferflughafen	Zielflughafen	Luftverkehrsabgabe laut Referentenentwurf
Frankfurt	-	Moskau-Domodedovo	8 €
Frankfurt	London-Heathrow	Moskau-Domodedovo	8 €
Frankfurt	-	New York-Newark	45 €
Frankfurt	London-Heathrow	New York-Newark	45 €
Frankfurt	-	Dubai	25 €
Frankfurt	London-Heathrow	Dubai	25 €
Hamburg	-	München	8 €
Hamburg	Frankfurt	München	8 €
Hamburg	Frankfurt	Moskau-Domodedovo	8 €
Hamburg	London-Heathrow	Moskau-Domodedovo	8 €
Hamburg	Frankfurt	New York-Newark	45 €
London-Heathrow	Frankfurt	Moskau-Domodedovo	0 €
London-Heathrow	Frankfurt	New York-Newark	0 €
Moskau-Domodedovo	Frankfurt	Hamburg	0 €
New York-Newark	Frankfurt	Hamburg	0 €

# 1. Introduction

## Distribution of passengers in the different intended APD classes

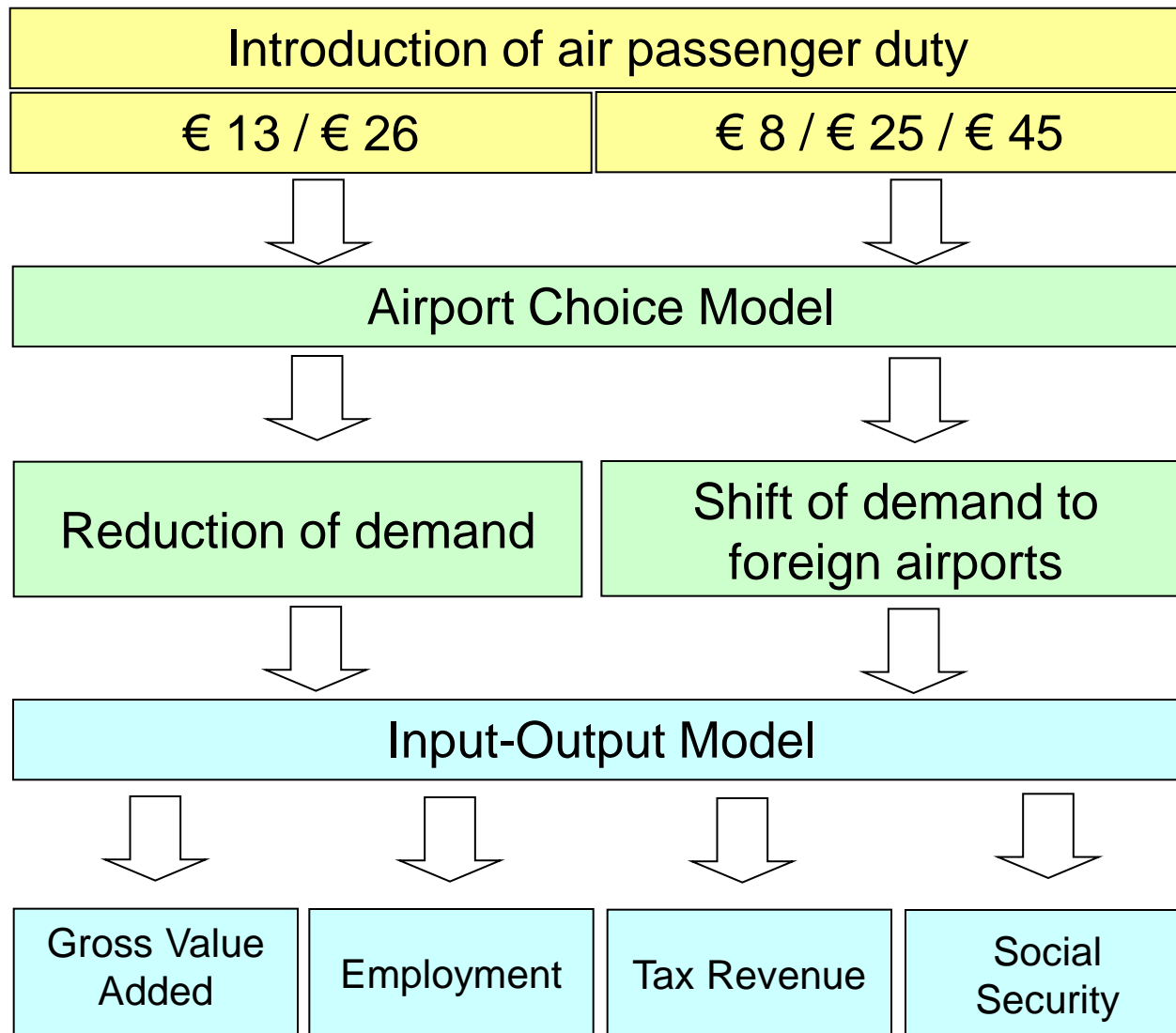
	Group 1	Group 2	Group 3
	Short-haul	Medium-haul	Long-haul
Geographic definition	Domestic, Intra-European and Northern Africa  (Countries according to Annex 1 LuftVStG )	Northern Africa, Arabia, Central Asia  (Countries according to Annex 2 LuftVStG )	Sub-Sahara Africa, Asia, Americas, Pacific  (other countries)
Number of enplaned passengers in 2008	62.3 million	2.9 million	8.9 million
Expected revenues (without demand effects)	€ 498.4 million	€ 72.5 million	€ 400.5 million



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## 2. Modelling Approach

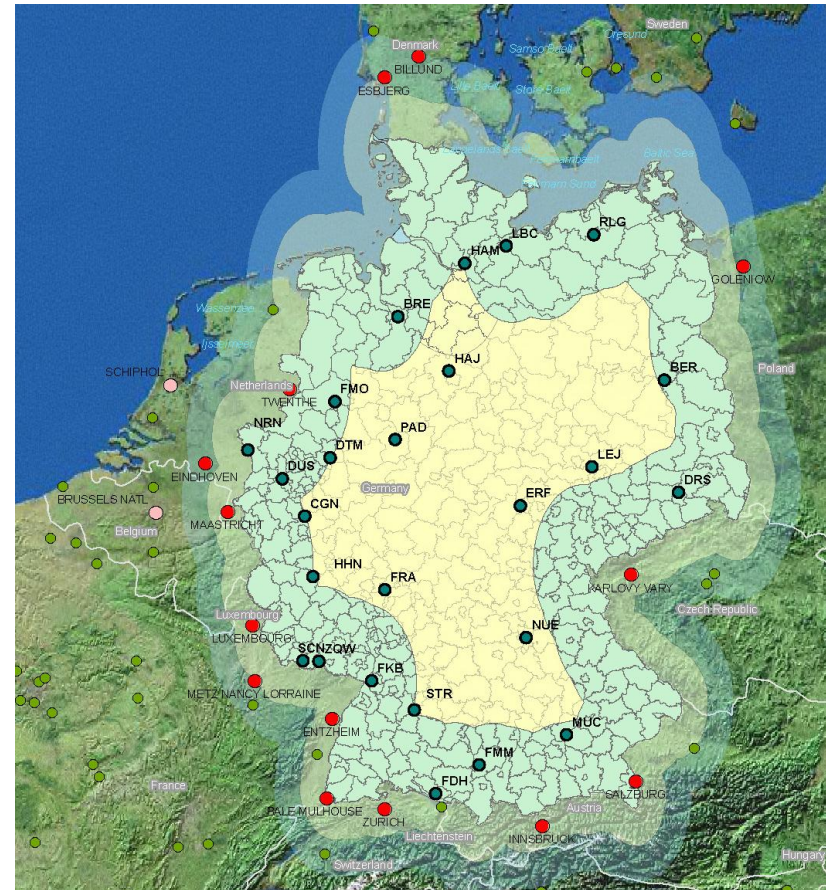




## 2. Modelling Approach

- 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



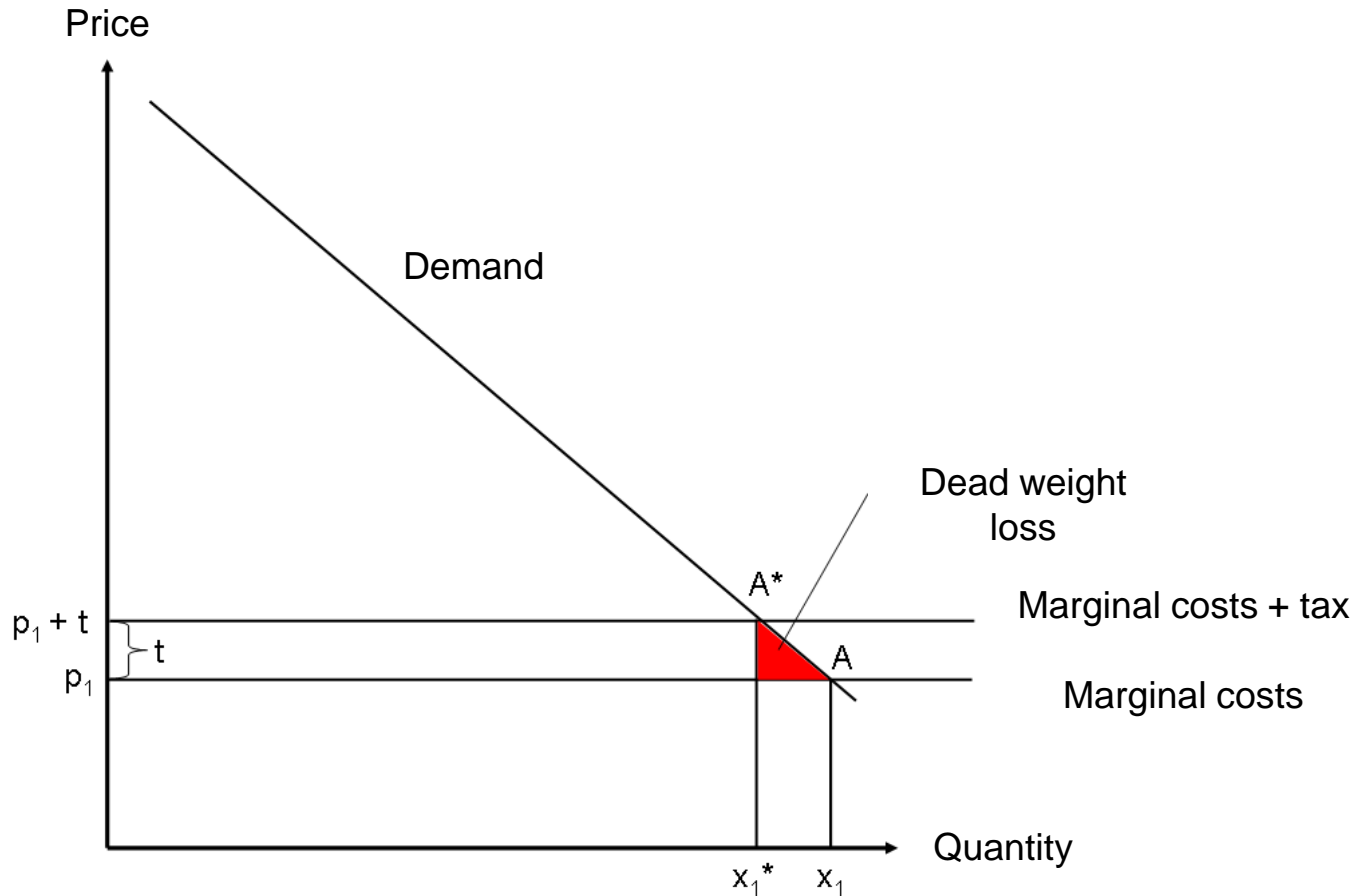
## 2. Modelling Approach

### 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

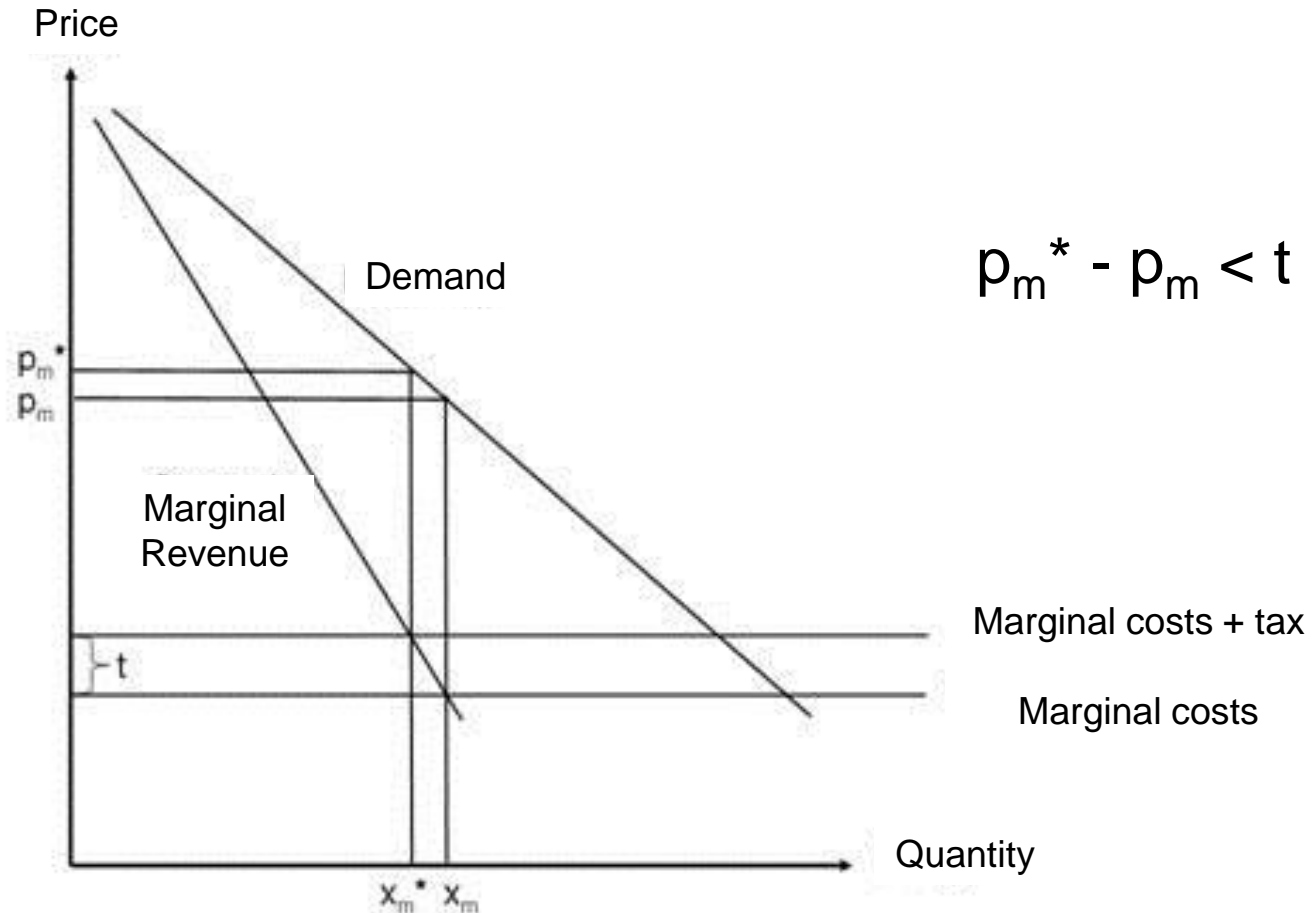
Assumption: Full pass-through of the APD, perfect competition, no capacity constraints



Source: DLR, based on Forsyth/Gillen (2007)

## 2. Modelling Approach

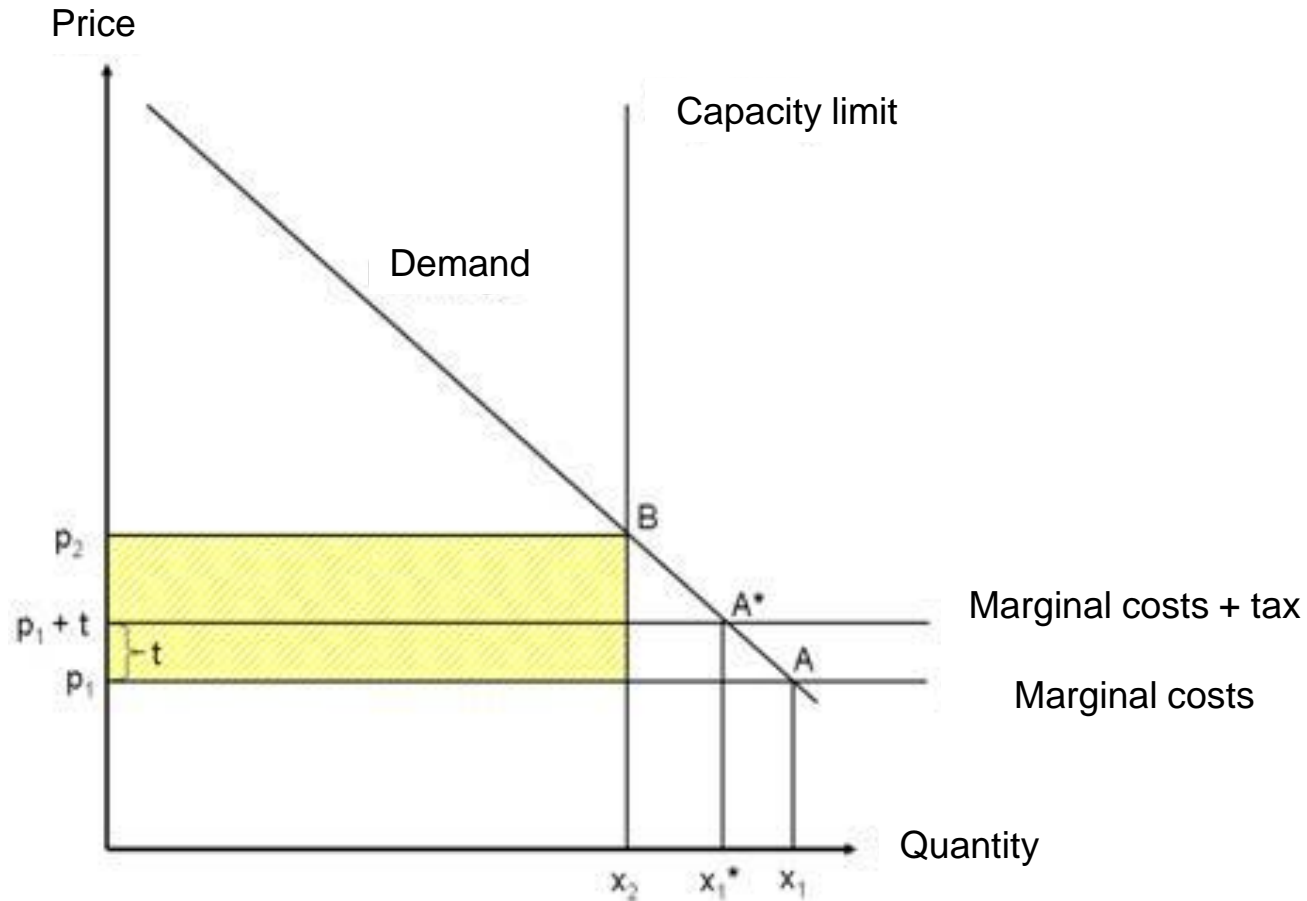
Alternatives to the assumption of a full pass-through of the APD - Monopoly



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



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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## 3. Results

### 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