

**Changes in air transport supply as a result of destination development:
The case of Santorini island, Greece**
1st Conference of the International Association for Tourism Economics
Palma de Mallorca, October 25-27, 2007

Changes in air transport supply as a result of destination
development: The case of Santorini island, Greece

Mr Pavlos Arvanitis
Dr Andreas Papatheodorou
University of the Aegean



Conference of the International Association for Tourism Economics
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Overview of the Presentation

- Provides information on the destination selected
- Examines and analyses the domestic and international aviation market over a 10-year-period (1997 and 2006)
- International Air Transport Market
 - Emphasis on international city-pairs operating to Santorini
- Links air transport with tourism
- Analyses the evolution of the destination's traffic as a result of the air transport liberalisation
- Summarises and concludes

Greece - Key Features

- Fragmented Geographical Area and Tourism Flows
 - 131.957 km² - out of which 20% islands
 - Greek Archipelago: more than 2000 islands of which 227 inhabited
 - about 17 million tourists are expected to visit Greece in 2007 / more than 73% by air
 - over 60 % of lodging establishments located on the islands
 - still several routes survive only due to the existence of PSO

- Heavily Concentrated Airport Traffic – Spatially and Seasonally
 - 39 airports operate in the country: mainland (11), islands (28)
 - A/C movements (2005): about 403,000 ~50% domestic
 - pax arrivals (05): 11.4m domestic, 25m international (10.3m charter)
 - 1 "A" class (>10 mpax) accounting for about 36% of traffic
 - 0 "B" class (5<. <10 mpax)
 - 7 "C" class (1<. <5 mpax) accounting for about 51.5% of traffic
 - 30 "D" class (< 1mpax) accounting for about 12.5% of traffic

source: GNTO, HCAA

Commercial airports operating in Greece



Air Transport and Tourism

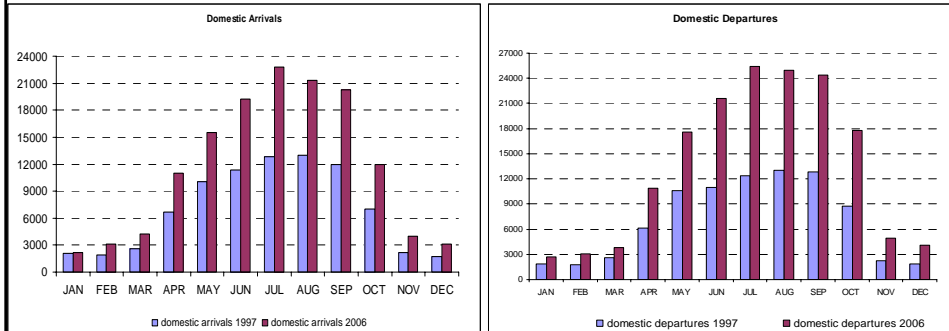
- In addition to its well-established linkages with local, regional and national economies, air transport is explicitly related to tourism.
- Every industry with a 'tourism ratio' (i.e. tourism related receipts of a specific sector expressed as a percentage of its total turnover) exceeding 15% may be regarded as part of the tourism sector; in this context, air transport is a tourism industry par excellence with a ratio often over 90%.
- About 40% of international tourists travel by air today compared to 35% in 1990 (ICAO, 2004), while the direct employment effect of air transport on tourism is estimated at 6.7 million jobs (ATAG, 2005).
- In fact, the demand for air transport is mainly derived by demand for tourism; both sectors are strongly cyclical and are highly sensitive to changes in the economic, social and political environment.

The case of Santorini Island

- Santorini is a volcanic island, located in the middle of the Aegean Sea.
- Popular and established destination for both domestic and international tourists.
- Adequate accommodation supply and transport connections to Athens by high speed sea vessels and direct flights.
- International flights from/to Europe and Middle East only on a seasonal basis (charter flights)

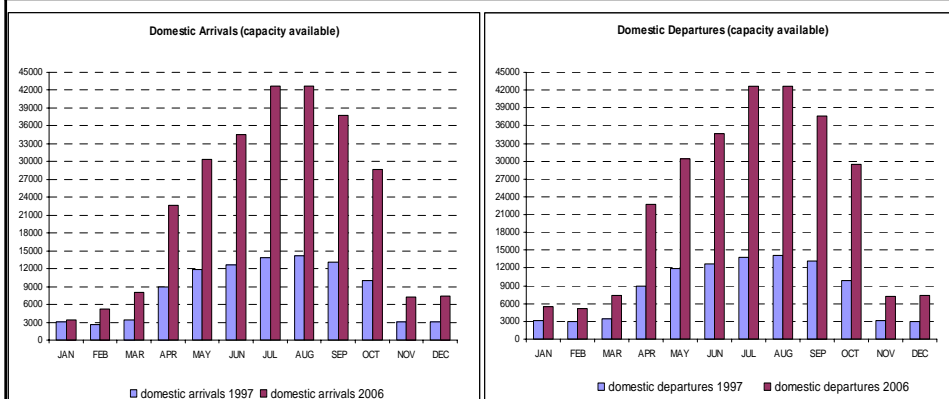
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Domestic Arrivals and Departures (passengers)



- o High seasonality even in domestic traffic, as Santorini is a domestic holiday destination
- o Some traffic in the shoulder months
- o Pattern still the same after 10 years!

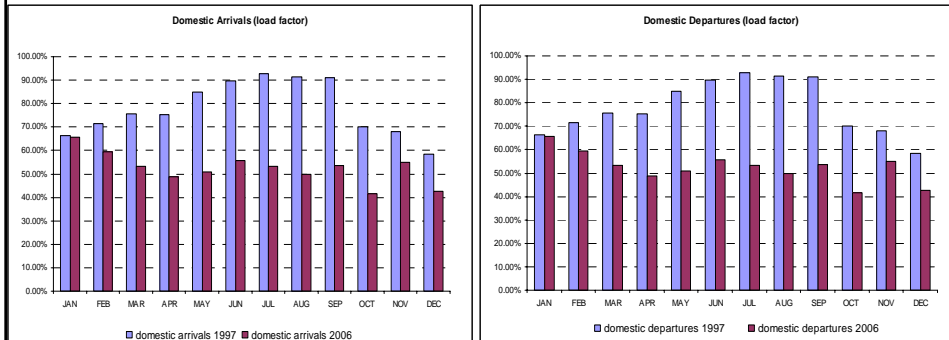
Domestic Arrivals and Departures (capacity available)



- o Capacity has more than doubled, even quadrupled in some months
- o An indication of competition in the domestic market

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Domestic Arrivals and Departures (load factor)

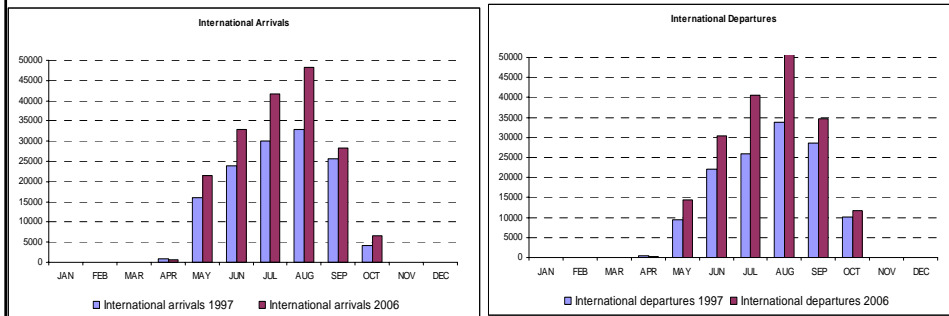


- o Load factors in 2006 significantly lower to 1997
 - o Result of competition, reflecting possible overcapacity

International Traffic

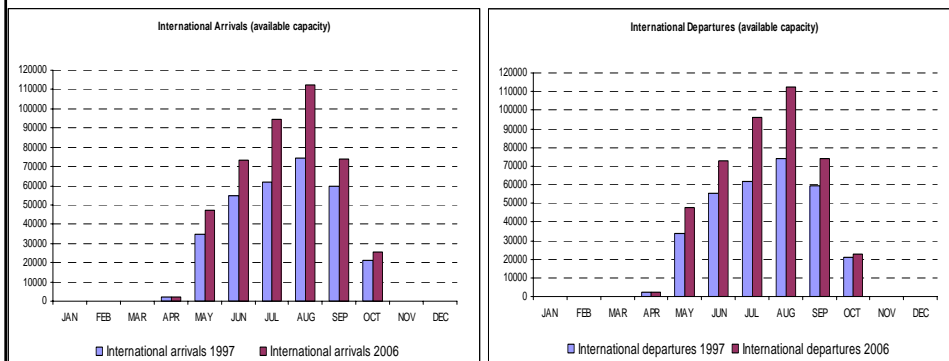
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International Arrivals and Departures (passengers)



- o Traffic is exclusively related to charter flights operating on a seasonal basis
- o Traffic in shoulder months (APR, OCT) has largely remained unchanged
- o Traffic in peak months has significantly increased
- o Arrivals in May, higher than departures whereas departures in October higher than arrivals
- o Pattern still the same (sea and sun)

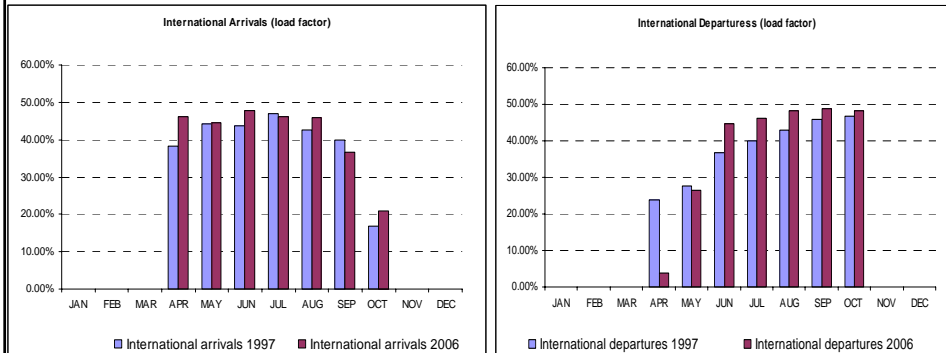
International Arrivals and Departures (capacity available)



- o Carriers offer almost double number of seats to the number of passengers travelled
- o Possibly due to multi-stop journeys

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International Arrivals and Departures (load factor)



- o Load factors seem to be extremely low for charter operations (<50%)
- o Possibly reflects the multi-stop journeys to other Aegean Islands
 - o Origins with thick traffic experience better aircraft utilisation

City contribution and Load Factors

1997	city contribution	Load factor	Correlation Coefficient
Top Ten			
Tel Aviv, Israel	10.11%	66.17%	0.5393
Stockholm, Sweden	8.73%	61.32%	
Vienna, Austria	7.07%	55.16%	
Munich, Germany	6.86%	42.68%	
Oslo, Norway	5.72%	57.78%	
Copenhagen, Denmark	5.45%	52.17%	
Milan, Italy	4.45%	39.06%	
Frankfurt, Germany	4.14%	55.44%	
Düsseldorf, Germany	3.77%	42.19%	
Helsinki, Finland	3.67%	56.11%	
Bottom Five			
Milan, Orio Al Serio, Italy	0.43%	36.46%	
Genoa, Italy	0.34%	51.31%	
Bologna, Italy	0.19%	31.98%	
Basel, Switzerland	0.07%	57.14%	
Zagreb, Croatia	0.05%	28.00%	
Number of cities serving Santorini			38

1997	load factor	city contribution
Top Ten		
Goteborg, Sweden	80.58%	3.44%
Salzburg, Austria	77.12%	1.50%
Tel Aviv, Israel	66.17%	10.11%
Stockholm, Sweden	61.32%	8.73%
Oslo, Norway	57.78%	5.72%
Basel, Switzerland	57.14%	0.07%
Helsinki, Finland	56.11%	3.67%
Frankfurt, Germany	55.44%	4.14%
Vienna, Austria	55.16%	7.07%
Copenhagen, Denmark	52.17%	5.45%
Bottom Five		
Larnaca, Cyprus	22.37%	0.51%
Berlin Shoenefeld, Germany	20.28%	0.65%
Brussels, Belgium	16.91%	1.96%
Amsterdam, Netherlands	15.56%	1.31%
London, United Kingdom	12.32%	0.55%

- o Cities ranked according to their contribution in August (1st table)
- o Cities ranked according to their load factor in August (2nd table)
- o Low traffic concentration (HHI=488.9)
- o Load factors vary according to city
- o There is a positive correlation coefficient
 - o Bigger cities/airports generate more efficient flights

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City contribution and Load Factors

2006	city contribution	Load Factor	Correlation Coefficient	2006	load factor	city contribution
Top Ten				Top Ten		
London Gatwick, United Kingdom	10.85%	60.46%	0.2312	Helsinki, Finland	85.90%	2.86%
Manchester, United Kingdom	7.13%	71.39%		Dusseldorf, Germany	83.21%	3.13%
Milan Malpensa, Italy	5.86%	30.36%		Lyon, France	82.00%	0.09%
Stockholm Arlanda, Sweden	5.29%	45.56%		Manchester, United Kingdom	71.39%	7.13%
Vienna, Austria	3.57%	62.60%		Nuremberg, Germany	67.46%	2.16%
Rome Fiumicino, Italy	3.49%	40.89%		Copenhagen, Denmark	65.30%	1.40%
Paris, Charles De Gaulle, France	3.33%	42.18%		Vienna, Austria	62.60%	3.57%
Verona, Italy	3.20%	36.58%		Malmö, Sturup, Sweden	62.38%	1.15%
Zürich, Switzerland	3.19%	26.63%		Aarhus, Denmark	61.37%	1.79%
Düsseldorf, Germany	3.13%	83.21%		London Gatwick, United Kingdom	60.46%	10.85%
Bottom Five				Bottom Five		
Belgrade, Serbia	0.24%	44.48%	Lamezia-Terne, Italy	22.47%	0.19%	
Zagreb, Croatia	0.21%	27.31%	Brussels, Belgium	21.09%	2.79%	
Lamezia-Terne, Italy	0.19%	22.47%	Amsterdam, Netherlands	20.26%	1.30%	
Beirut, Lebanon	0.10%	46.75%	Birmingham, United Kingdom	19.85%	0.87%	
Lyon, France	0.09%	82.00%	Madrid, Spain	13.04%	0.29%	
Number of cities serving Santorini		51				

- o Cities ranked according to their contribution in August (1st table)
- o Cities ranked according to their load factor in August (2nd table)
- o Top Ten cities have changed dramatically
 - o Reflecting deregulation impacts (use of alternative airports etc)
- o Even lower traffic concentration (HHI = 385.7)
- o Correlation coefficient decreases due to
 - o Increase in the number of cities, spread out of the network, affecting the whole pattern

Passengers per aircraft per month

1997	APR	MAY	JUN	JUL	AUG	SEP	OCT
Top Ten							
Gothenburg, Sweden		220.7	211	211.8	211	202.8	187
Oslo, Norway		156.4	203.1	225	181.2	158.5	56.3
Stockholm, Sweden		173.5	187.2	188.9	179.7	171.5	58.2
Copenhagen, Denmark		144	182.6	161.8	179.3	180.5	
Malmö, Sweden		174	176.8	193.8	172.5	159.3	67
Tel Aviv, Israel	99		145	177.2	172.5	176.4	108.5
Salzburg, Austria		155	148.8	154.5	160.7		
Frankfurt, Germany		165.5	109.8	127.8	153.8	150.8	30.8
Vienna, Austria	147	99.6	125.2	132.7	147.1	122.2	
Graz, Austria		132	145.5	136.5	143.2	93	
Bottom Five							
Hamburg, Germany		71.5	57.7	44.4	51.3	56.2	12.3
Stuttgart, Germany		60.5	48.3	39.4	40.2	101.8	30.3
Brussels, Belgium		42.4	37.3	47.7	38.5	53.4	4.7
Berlin Schoenefeld, Germany		20	31.8	67.7	37	57	26
Amsterdam, Netherlands		71.8	31.8	39.2	36	25.9	
2006							
Top Ten							
Düsseldorf, Germany		225	222.5	215.6	241	236.3	130
Helsinki, Finland		228.7	227	226.4	218.3	224.5	213.3
Oslo, Norway		197	172.4	199.2	191.8	181.8	0
Manchester, United Kingdom		200.8	196.5	196.4	180.7	194.3	54.4
Gothenburg, Sweden		185	194	183.4	180	150.8	
Nuremberg, Germany		184	176.3	169.3	177.8	181	70
London Gatwick, United Kingdom		173.8	184.3	173.3	177.1	179.9	76.2
Catania, Italy		140.3	171.3	173	166.6	0	
Vienna, Austria		167	168.5	163.5	162.6	69.8	45
Newcastle, United Kingdom							
Bottom Five							
East Midlands, United Kingdom		65.8	69	69	69.5	69.3	25
Brussels, Belgium	37.7	62.4	61.2	67.3	63.4	58.4	2
Nantes, France		61	37.2	73.5	62.3	73.5	41
Trondheim, Norway		194.3	122.3	134.8	62.3		
Amsterdam, Netherlands	92	60.1	44.8	63.6	43.7	52.4	2

- o Ranked according to August traffic
- o Number of passengers per aircraft has significantly increased in 2006

Conclusions

- Domestic traffic has significantly grown in the last ten years.
- Competition has increased, especially since the entry of Aegean Airlines as a direct competitor to Olympic Airlines
 - leading to higher frequencies
 - pushing down the load factors
- International travel experiences greater entry and exit turnover in terms of city pairs.
 - origins enter and exit according to the prevailing demand in each year.
- Santorini is a destination for both large and small tourism generating countries.
- Origins are well spread among Europe and Middle East.
- The “thinner” origins seem to combine two or more stopovers to utilise the aircraft more efficiently.
- Santorini and every other destination with seasonal traffic needs to keep ahead of market changes to attract both tourists and carriers, as the latter is a prerequisite for the former.
- Santorini has to adapt and cater for the needs of a dynamic and constantly changing market to face the evolution in the years to come.

Thank You!

Mr Pavlos Arvanitis
Dr Andreas Papatheodorou

E-mail: a.papatheodorou@aegean.gr and p.arvanitis@chios.aegean.gr
Personal Web Site: www.trioptron.org