

Guidelines for Benchmarking Airports



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Overview

- **The various uses of benchmarking and the choice of methodology**
- **Issues associated with benchmarking:**
 - Availability and quality of data
 - Adjusting the data to provide meaningful comparisons
 - Residual benchmarking, with reference to the ATRS study

Uses of Benchmarking

- **Assess managerial or firm performance**
- **Collaborative benchmarking**
- **Price regulation**
- **National policy**



Managerial Performance

- **Has been used to assess various aspects of airport performance:**
 - Pricing
 - Service quality/customer satisfaction
 - Unit cost
 - Productivity/efficiency (TFP/VFP)
- **Can also be used to assess specific services:**
 - Ground handling
 - Cargo services
 - Retail (e.g., vs High Street)



Collaborative Benchmarking

- **Voluntary participation of a group of airports**
- **Examples - learning processes:**
 - IATA Customer Satisfaction (AETRA)
 - CAC Small Airports (customer satisfaction)
 - ◆ Conducted by InterVISTAS Consulting
 - EUROCONTROL (delays, cost, safety)
- **Some use for promotion:**
 - E.g., Number 1 Airport in the World / North America / Europe, etc.
 - Highest score on Question 17b

Price regulation

- **Has potential to overcome information asymmetry issues**
- **Examples:**
 - Irish Airports - used in determination of the X-Value for price cap regulation of Dublin, Cork, Shannon
 - Also has been used in price regulation of electricity in Canada, UK, Chile, Sweden, ...
- **Critically Important:**
 - Data quality, performance indicators, comparators
 - can make millions of dollars difference



National policy

- **Benchmarking can be used to inform policy, for example:**
 - **Australia International Benchmarking (1995)**
 - ◆ Covered utilities, rail, road, aviation, ports
 - ◆ Impact was largely indirect (informing the debate)
- **Benchmarking can be used to assess policy changes:**
 - **North American rail (Canada vs. U.S.)**
 - ◆ Canada enacted reforms before U.S.
 - ◆ Canadian success with regulatory reform became basis for US Staggers Act (1980)

Purpose	Types of Measure	Level of Aggregation	Comparators
Assess performance	<ul style="list-style-type: none"> ▪ Price ▪ Customer satisfaction ▪ Service quality ▪ Unit cost ▪ Efficiency (TFP, VFP, etc) 	Airport or individual services	<ul style="list-style-type: none"> ▪ Best in class ▪ Natural competitors
Collaborative benchmarking	<ul style="list-style-type: none"> ▪ Price ▪ Customer satisfaction ▪ Service quality ▪ Unit cost ▪ Efficiency (TFP, VFP, etc.) 	Airport or individual services	<ul style="list-style-type: none"> ▪ Other group members
Price regulation	<ul style="list-style-type: none"> ▪ Efficiency (TFP, VFP, etc.) 	Airport	<ul style="list-style-type: none"> ▪ Best in class or similar peer airports
Assess policy	<ul style="list-style-type: none"> ▪ Price ▪ Service quality ▪ Unit cost ▪ Efficiency (TFP, VFP, etc.) ▪ Investment ▪ Throughput or take-up 	National or airport	<p>To inform policy:</p> <ul style="list-style-type: none"> ▪ Best in class ▪ Competitor countries ▪ Countries that have enacted major policy reform <p>To assess policy outcomes:</p> <ul style="list-style-type: none"> ▪ Control group of counties that have not enacted policy change

Issues in Benchmarking Airports

- **Availability and quality of data**
- **Adjusting data to provide meaningful comparisons**
- **Use of residual benchmarking, with reference to the ATRS study**



Availability/Quality of Data

- **Differing reporting standards around the world:**
 - Private and not-for-profit airports publish detailed financial accounts
 - Public sector airports may report very little data (buried in govt. accounts)
- **Differing accounting practices:**
 - U.S. PFCs vs. Canadian AIFs
 - Depreciation of infrastructure
e.g. BAA runways = 100 years
 - Can be adjusted but requires detailed data



Availability/Quality of Data

- **Lack of national airport statistics available from government or associations**
- **Not the case in all transport sectors:**
 - U.S. airline data is very comprehensive
 - North America rail statistics
- **This type of data would be highly valuable for national policy benchmarking in particular**

Adjusting the data

- **Need to understand the true causes for observed differences in performance:**
 - Managerial or policy performance?
 - Data inconsistencies?
 - External factors outside control of managerial (or policy maker)?

Adjusting the data

- **Various factors can impact benchmarking comparisons:**
 - Degree of outsourcing
 - Weather
 - Government subsidy/assistance
 - Traffic mix
 - Capacity constraints
 - Cost of living
 - Service quality
 - Economies of scale
 - Congestion



Adjusting the data

- **TRL approach:**
(Airport Performance Indicators)
 - Based on a core set of activities - runways, terminals and retail / food&beverage
 - Strip out non-core activities such as baggage handling, parking, other non-aviation activities
 - Requires judgement and detailed data
 - Some factors hard to adjust for (e.g., economies of scale, traffic mix)
 - ◆ Could be handled by selection of comparators
- **Not always necessary to adjust**
 - Economies of scale could be a policy objective



Residual Benchmarking

- **Another approach to control for differences**
- **Econometric/statistical analysis of indicators**
- **In general, residual benchmarking can be useful but has limitations:**
 - Can be biased by incorrect specification or selection of “external” factors
 - Can be distorted by the selection of sample airports/countries in the study (true of benchmarking in general)

Residual Benchmarking

- **Example ATRS Airport Benchmark**
- **ATRS relates raw Variable Factor Productivity to:***
 - Passenger traffic volumes
 - % of International traffic
 - % non-aviation revenues
 - % air cargo
 - Capacity constraints

*
Global Airport Performance Benchmarking Report, Air Transport Research Society 2004 (based on pooled model)



Residual Benchmarking

- However, the ATRS results do not appear to be robust, e.g., economies of scale:

Year	Elasticity of Productivity with respect to airport size
2002	0.35
2003	0.15 0.16
2004	-0.18*

* based on pooled model

- Newark Airport (EWR)
 - goes from 4th most productive airport in 2002
 - to 2nd worst by 2004



Residual Benchmarking

- **Explanation given for 2004 results:**
 - Economies of scales exhausted in North American and European airports (in just one year!)
 - More likely explanation is that there are problems with data or specification
- **Other coefficients also unstable year-on-year, e.g., % cargo**
- **Results are specious and should be treated with caution or disregarded**

Other Issues with ATRS

- **Does not provide access to data**
 - for scientific verification
- **ATRS conclusion**
 - statistical results specious
 - data unavailable,
results cannot be replicated
 - does not meet a scientific standard
at this time



Conclusion

- **Is benchmarking with limitations better than no benchmarking?**
 - *Certainly not without value*: can identify best practice, spur competition and shake up conventional thinking
 - Also, depends on the use:
 - ◆ Price regulation requires a high degree of accuracy
 - ◆ In policy analysis, an imprecise measure giving scale and direction may be sufficient
 - Benchmarking can be an effective decision-aid tool but users should be aware of the limitations and the analysis must demonstrate sufficient robustness

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Thank You

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