

Discussion

***Measuring Technical Efficiency of  
Airports in Latin America***

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2010

## Core issues in the paper:

- 👉 **Objective:** The paper studies the technical efficiency of airports in LATAM and its determinants. In addition to this, technical efficiency in LATAM is compared with airports in other regions in the World.
- 👉 **Methodology:** Data Envelopment Analysis. Regression analysis to explain differences in productivity.
- 👉 **Sample:** 22 airports from LATAM; 25 from Asia-Pacific; 40 from Europe; 63 from Canada and the US.
- 👉 **Main results:**
  - 👉 LATAM airports among the airports with worst suboptimal scale problems.
  - 👉 Main drivers of technical efficiency: hub airports and size of population are positive factors. Airports with larger commercial share in revenues are more efficient.

## Core issues in the discussion:

☞ **Methodology is standard: DEA + regression. Adding regression is OK,..... but DEA is a extremely limited tool for analyzing efficiency in sectors such as airports (and, generally, where divisibilities are high, and multiple contracting procedures are in place). This makes very complex using some inputs such as employment. And forces to be extremely cautious about comparisons.**

☞ **Example: The paper compares airports in Europe, A&P and Can&US. Are we ready to accept that the ratio passenger/employee is twice in Europe than in A&P, or is four times in Europe than in Can&US, being as it is that the sample deals with quite similar airports regarding dimension (outside LATAM).**

## Core issues in the discussion:

- ☞ See a more particular case: The largest number of employees in Europe in a particular airport is 17,528 (actually, Heathrow web page indicates that the direct employment at the airport is 32,400), whereas the largest number of employees is 4,873 in Asian airports, and 3,000 in Can&US. ...this does not need to be a typo: is consistent with ratios in paragraph above.
- ☞ Could one wonder that some labor-intensive tasks are performed by direct employees in many European airports (such as handling), whereas it is usually contracted out in other airports (heavily in Can&US)? This provides very different number of employees **BY** the airport (but does not necessarily mean different number of employees **AT** the airport).
- ☞ Particular case in Europe: handling services in German airports are usually produced in house, whereas handling is contracted out in Spain. Direct and rough comparisons of efficiency (using inputs) between German and Spanish airports yield Spanish airports much more efficient than German ones....because 'nobody is employed in handling' in Spain !!!!!

## Core issues in the discussion:

- ☞ Using monetary values for costs as much as possible. This helps avoiding somehow this type of problems.
- ☞ In the same way, the public/private dimension need to be revised in the sample.
  - ☞ For instance, it is said (pg. 10) that all airports in Can&US are operated by state owned-enterprises. However, in the sample at least Indianapolis and (partially) Atlanta are managed by private firms. I do not know all cases.
  - ☞ Percentage of European airports under private management (37,9%) seems extremely high. The number of private (100% private or majority private in mixed public-private firms) in the sample is lower than 15. Perhaps all mixed firms are considered private, even If governments retain control.....Be more precise in this issue.
- ☞ It might be helpful to review, on European airports:
- ☞ Bel, G. & X. Fageda, **“Privatization, regulation and airport pricing: An empirical analysis for Europe”**, *Journal of Regulatory Economics*, forthcoming 2010

## Core issues in the discussion:

- ☞ Many LATAM airports are managed under integrated systems, at national level or at (large) regional level (e.g. Brazil, Peru, Mexico). This means problems with indivisibilities in some areas (might not be too relevant in inputs), but casts doubts for comparisons with US&CAN (all of them individually managed and European airports in the sample (almost all of the individually managed –or as local group-))
- ☞ In this way Spanish case could be used as benchmarking, since AENA (Spain centralized and government owned manager) is the largest operator in the world.
- ☞ Some papers on this in references, but can check as well (detailed information and most robust techniques than previous papers):

Juan Carlos Martín, Concepción Román & Augusto Voltes-Dorta, 2009, “A stochastic frontier analysis to estimate the relative efficiency of Spanish airports”, *Journal of Productivity Analysis*, 31:163–176

# Core issues in the discussion:

☞ Last remark:

☞ The paper identifies optimal scale (CRS) in airports handling between 20 and 30 million passengers. This is much above than the CRS threshold in previous empirical research. Actually, some papers find DRS at these volumes of passengers. ..???