

### Kommentar zu dem Beitrag:

## How scale and institutional setting explain the costs of small airports – An application of spatial regression analysis (von Ülku, T. / Jeleskovic, V. / Müller, J.) \*

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The authors analyse an important topic of airport infrastructure which gains more and more political attention, especially given the financial problems of small regional airports such as Hahn or Kassel-Calden in Germany and elsewhere in Europe. For airport managers but in particular for the in many cases public owners it is important to know what determines the costs of a regional airport and how to cover these costs by subsidies. Very often owners and managers find themselves in the situation that the airport has been built for good, but also in many cases such as for instance Kassel-Calden for bad reasons. Investment has been made and the costs are sunk. This then leads to the question of how to cover the operational costs and also how to cut them in the short run by better management and in the long run by better institutions.

Therefore explaining the determinants of operational costs are important to politics. Ülku and Müller have previously together with colleagues produced a number of interesting studies on regional airports (see Adler, et al. 2013, GAP, 2012), but overall this topic deserves more research as the authors correctly argue in the literature review of their paper.

The paper has the following strength and weaknesses:

The paper compares regional airports in France and Norway. It offers a lot of useful descriptive statistics on cost and revenue structure. Gathering these data is very time consuming and one has to congratulate the authors for achieving this. Analysing these costs with spatial regression methods is also a rather new approach. It seems plausible that space is a

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\* Die Qualitätsprüfung / -sicherung des Beitrags „How scale and institutional setting explain the costs of small airports: An application of spatial regression analysis“ von Ülku, T. / Jeleskovic, V. / Müller, J. erfolgte gemäß dem auf der Homepage der Zeitschrift für Verkehrswissenschaft dargestellten (Alternativ-)Ansatz zur transparenten Qualitätsprüfung und –diskussion (siehe [www.z-f-v.de](http://www.z-f-v.de) → „Einreichung von Beiträgen und Begutachtung / Qualitätsprüfung“). Dabei wird von einem fachkundigen Wissenschaftler eine zustimmende Stellungnahme zur Veröffentlichung des Beitrags eingeholt und zusammen mit dem Beitrag veröffentlicht.

#### *Anschrift des Verfassers:*

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determinant of costs. Whether this approach is superior to ordinary regression analysis remains to be seen (see below the remark on Pavyluk).

The major weakness is that the analysis is not about scale, but about utilization. The paper claims in the title and in the literature review that it will analyse how scale influences the unit costs, but in the regression analysis the dependent variable is defined by the authors as "the unit costs of airport operations (costppax), calculated by dividing the total operational costs by the annual number of passengers served. Total operational costs include the labor costs, material costs and outsourcing costs but exclude the depreciation. Hence, the analysis ignores the investments undertaken at the airports and focuses merely on the operational level." The result that unit costs are decreasing in scale (see figure 4 of the paper) is interesting, but should not be confused with economies of scale which are defined as falling long run average total costs. In the long run capacity is not fixed. Airports enjoy economies of scale due to indivisibilities for example of the runway or the terminal building (for a critical review of the literature see Lechman and Niemeier, 2013). The causes for economies of scale are different to those for decreasing average operational costs. They reflect that the variable factors are not fully divisible and that higher utilization of the variable factors such as for instance labor leads to lower average costs. Note also that the decrease of average operating costs is not due to a spreading of the fixed costs as the operational costs do not include capital costs. Total average costs of airports would decrease even stronger as average operational costs.

Another important issue is that one needs to be cautious with interpreting the results of regression analyses as causal. The authors argue that "having a positive coefficient in both countries indicates that higher subsidies lead to higher unit costs and this relationship is statistically significant. To our knowledge, this is the first attempt in the literature of airport economics, which statistically analyses the relationship between the two variables. The results suggest that if the subsidies relative to costs increase by one percent, the unit costs increase by approximately 0.2 percent both in Norway and France."

There are two issues with this interpretation: while it may be plausible that high subsidies lead to less effort on the part of the airport and hence to higher operational costs per passenger, higher operational costs naturally also lead to the necessity for more subsidies. Moreover, it also seems plausible that a third variable not included in the analysis may be the driving force behind both increased subsidies as well as higher operational costs. We could think of a proxy for management skills for instance that may likely be correlated with both subsidies and operational costs and could hereby pose a challenge to the analysis by the authors. While noting the rather bold claim by the authors, the reader should bear in mind the warning rightly issued by the authors that "we believe that the causality between the two should be investigated in more detail by applying a more in-depth regression analysis, in which time lagged variables can determine the direction of the causal links as well as a Granger-causality test."

There are a number of minor weaknesses which could have been easily avoided. As noted above this paper is not about economies of scale. Therefore the one and a half pages review on the literature of economies of scale could have been left out as it may be irrelevant for the analysis. This would also have hidden that the authors are not really familiar with the work of Pels et al. (2010) which is not - as the authors claim - about economies of scale in the long, but on the short run operational costs. Pels et al. are among the few authors who have analysed operational costs of airports covering small international airports like Christchurch and large airports such as Sydney and Heathrow. These results should have been discussed in depth.

Referring to the analysis of large and small airports, it seems also noteworthy that the authors employ a selected dataset of French and Norwegian airports. While this may not per se be an issue, the authors nevertheless should have clarified the reasons for selecting the airports in the sample at hand in order to meet concerns related to the usage of selected datasets.

Also the research of Merkert and his colleagues on benchmarking and management of regional airports in particular on Norwegian airports has been omitted (see Merkert et al., 2012); Merkert and Mangia, 2012, 2013, and 2014).

The authors built their analysis on the work of Pavyluk (2009, 2010, 2012, and 2013) who has used spatial econometrics to analyse airports. According to the authors Pavyluk “shows that airports located within a distance of 550 km tend to cooperate, while competition starts dominating for airports located within 550 km to 880 km”. This result is surprising to say the least as it would mean that for example Berlin airport cooperates with the airports of Dresden, Leipzig, Hannover and Hamburg, but competes with Stuttgart airport. There is no theory which could support such results and the empirical work on airport competition would not regard Stuttgart airport as a substitute for Berlin airport (see in particular Müller et al., 2010 as well as Maertens, 2012 and Malina, 2010). Building on work with such counterintuitive results sheds doubts on one’s own approach.

In summary, the paper is not about scale as the title claims. But scale is not how economists reach decisions. The marginal benefits of reading the paper on operational costs outweigh the marginal costs and just tip the balance.

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