

Project Outline:

The Relation between Airport Charges, Finance and Optimal Infrastructure Investment

- (1) **Responsible:** Jürgen Müller, Marius Barbu
- (2) **Objective:** Assess how airport charges affect finance (if they affect it) and what are optimal investment strategies in the given regulatory environment, in Germany.
- (3) **Description:** While air traffic has grown constantly over the last decade (sometimes with double digit yearly), the infrastructure capacities at some German airports failed to keep up the pace. Thus many airports are increasingly exposed to capacity constraints, which raises problems of improper allocative efficiency and welfare effects. The mainstream literature concentrates on how to deal with this congestion situation by simply improving the allocation of limited capacity. Here mainly two possibilities can be found – slot allocation, or adapt pricing strategy. However, we are trying to see if the pricing strategy can play not only a rationalizing role but also one that can contribute to future capacity expansion, closer to the long-term marginal cost of the airports. Investments in airports are lumpy, with high sunk cost. Sometimes runways are overused, sometimes are underused. When such infrastructure investment takes place, usually balance sheets of airports are affected on short and medium-term. But, through a proper charging scheme the situation can be balanced, bringing airport's financial performance on a more predictive and stable path.
- (4) **Data:** Traffic and Capacity Data from GAP database. Charges data from airportcharges.com and GAP.
- (5) **Design/Methodology/Approach:** This study has its roots in the study of Cemil Demir and Stefanie Scholz concerning the relation between financial returns and investment. Their study highlights differences in infrastructure development strategies between UK and German airports. While in the UK, airports tend to expand after the airport reaches full capacity utilization, in Germany, a more long-term perspective, is preferred, by investing earlier. In order to evaluate trends we shall study very long time series of data on capacity, PAX/Gate, PAX/m². Besides seeing how charges can bring enough revenues in order to accommodate the long-term path, we shall explore also the benefits of using an approach based on real options theory. This theory is very suitable for large infrastructure developments, and can provide us clues in understanding the time value of waiting in regards of airports expansion and how to deal with uncertainty. (e.g. staged investment option, defer, abandon).
- (6) **Findings:** In progress

Contact persons:

Jürgen Müller
jmueller@fhw-berlin.de

Marius Barbu
ms.barbu@gmail.com

WWW.GAP-PROJEKT.DE