

Zeppelin Universität

ZEPPELIN Chair for International Economic Theory and Policy

Bachelor Thesis

**Agglomeration Effects in Germany and the Impact of
Transport Infrastructure on Productivity**

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Abstract

This bachelor thesis undertakes an empirical analysis of the agglomeration effect in Germany for the overall economy as well as for individual industry groups. Especially it is concerned with how improvements of the transport infrastructure can increase the benefits of agglomeration. For the analysis, highly precise measures of effective population density and of effective firm density are developed which explicitly consider accessibility through the transport network. We estimate the agglomeration effect using a production function with firm-level data. To the best of the authors knowledge, this is the first study on the agglomeration effect in Germany to both: the use of such high level of spatial precision in the agglomeration measure, and the use of firm-level data. We use long lagged population data as an instrument to assess endogeneity in our model. With respect to a 10% decrease of travel times we estimate an increase of productivity by 0.61%. We find that returns to scale are decreasing for firm density but constant to population density. For individual industry groups we have found significant agglomeration effects for 7 out of the 17 groups and high variance in their effects sizes.