

ASSESSING THE MAGNITUDE OF DETOURS FACED BY CARGO FLIGHTS: AN EMPIRICAL ANALYSIS

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ABSTRACT

Purpose: It has largely been assumed by both scholars and experts that planes fly the shortest route. However, due to natural, technical, geopolitical and social reasons, virtually no flight follow the shortest route (Dobruszkes, 2019). It has been estimated the average lengthening is 7.6 %, although under conservative hypotheses and with high standard deviation (Dobruszkes and Peeters, 2019). However, this assessment includes all available commercial flights, without any segmentation by airline, aircraft type or service type (such as cargo vs. passenger). Deeper analyses would thus be welcome. In this paper, we intend to focus on cargo flights only.

Design/Methodology/Approach: The analysis is based on a comparison between shortest-route distances and actual distances flown by commercial cargo flights in all over the world. The former is easy to compute from the latitude and longitude of origin and destination airports. The latter is computed in a Geographical Information System, based on a one-week set of radar traces bought from FlightRadar (which is a huge set of data).

Findings: The research is still ongoing.

Originality/Value: This paper will unveil whether cargo flights are more, or less, affected by detour than the average. This could be the case notably because the use (to some extent) of older planes involves lower ETOPS (Extended Operations) certification. Broadly thinking, it will also help to critically think about the concept of distance. It will also help to prevent scholars and experts to consider the shortest distance flown without any disclaimer.

Research Implications: Considering the existence of detours, the use of shortest-route distances to feed spatial interaction models, emission (or fuel burnt) assessments or airline rankings can only lead to biased outcomes, away from what happens into the real world.