

Cambridge Econometrics' validation summary of T&E Briefing 'Recent European aviation ticket taxes show no measurable impact on traffic'

Validation summary of the methodology, results, and the choice of reporting language

1 Background

Cambridge Econometrics was recently contacted by Transport & Environment (hereafter T&E) to review the report 'Recent European aviation ticket taxes show no measurable impact on traffic'. The briefing note seeks to assess whether recent increases or reforms in aviation ticket taxes in the Netherlands, the UK, Germany and France measurably altered short-run air travel demand, using monthly airport-level passenger data for 2019–2025 and a country-by-country difference-in-differences approach that compares treated countries with selected European controls while controlling for airport fixed effects, common time shocks and macroeconomic conditions; across a range of specifications and conservative inference procedures. It finds no statistically robust evidence that these recent moderate tax changes reduced aggregate departing passenger traffic in the short term, while acknowledging that the null findings should be interpreted cautiously given limited post-treatment periods, noisy post-Covid recovery dynamics and the difficulty of identifying small or heterogeneous responses in highly aggregated data.

Cambridge Econometrics since conducted a thorough review and validation of the key components of the analysis and reporting. These includes choice of the econometric method, choice of the dataset, choice of control variables and control groups, narrative interpretation of the results, and the choice of the language. The main findings are summarised in the next section.

2 Validation of the analysis and reporting

In this section, the validation of each of the above elements is set out. This includes a summary of the current report, alongside an assessment based on quantitative analysis and industry expertise.

2.1. Choice of the econometric method

The report adopts a difference-in-differences methodology to assess whether recent ticket tax changes had a measurable impact on passenger traffic. This is an appropriate econometric approach because the study is evaluating a policy intervention where a controlled experiment is not possible. As the report explains on page 10, the method compares changes in air travel trends between countries that raised their tax and countries that did not, in order to estimate what would have happened without the tax. The report also clearly states on page 10 that the method asks whether passenger traffic in the taxed country grow differently than it would have, based on trends in comparable countries.

The choice of method is well suited to the policy question. The use of airport and time fixed effects, airport-level clustered standard errors, conservative inference, and robustness checks across control groups and time windows provides a sound framework for testing whether any effect can be statistically detected. The report is also appropriately careful in recognising the limitations of applying this method during a volatile post-pandemic recovery period.

2.2. Choice of datasets

The report uses a credible and policy-relevant combination of aviation and macroeconomic datasets. As set out on pages 16–17, the primary aviation dataset is OAG Traffic Analyser, covering passenger volumes, origin and destination airports, stopover patterns and operating airlines from January 2019 to December 2025. This is complemented by OECD, Eurostat and ONS data for economic variables such as GDP per capita, unemployment, inflation, fuel prices and tourism flows.

This dataset selection is appropriate for the analysis. The use of monthly airport-level passenger data provides the granularity needed to assess short-term changes in aviation demand, while the inclusion of macroeconomic and tourism variables helps account for wider demand-side drivers. The report also explains on page 17 how different data frequencies were harmonised into a unified monthly panel, which is a practical and transparent approach given the short time windows under study.

2.3. Choices of control variables and groups

The report makes a strong effort to isolate the tax effect from other drivers of passenger demand. It explicitly notes on page 11 that “the tax is not the only element that has changed between the two groups of countries”, and therefore includes covariates such as airport baseline size, seasonal patterns, GDP per capita, unemployment, inflation, fuel prices and tourism. These variables are relevant because passenger demand can be affected by economic conditions, travel costs, consumer confidence and tourism flows, rather than by aviation taxes alone.

The choice of control groups is also well justified. On page 10, the report states that the core control group consists of Spain, Italy, Ireland, Poland, Portugal, Czechia, Switzerland and Denmark, which are intended to represent “the natural evolution of air travel during this period, without a ticket tax increase”. The report further strengthens the analysis by testing alternative control groups and different time windows, ensuring that the conclusions do not depend on a single comparison group.

2.4. Verification of the statistical analysis

Cambridge Econometrics received the dataset and code provided by T&E and conducted a thorough check to ensure that the results reproduced from the code and data match those presented in the report. On this basis, Cambridge Econometrics positively validates the internal consistency between the underlying empirical work and the reported findings.

2.5. Choice of language

Under Cambridge Econometrics’ advice, the wording around statistically non-significant results has been carefully crafted to avoid misleading readers. In particular, the report avoids presenting non-significant findings as proof of “no effect”. Instead, on page 14, it states that “no statistical model can perfectly isolate every influence” and that “we interpret results cautiously”. The report also notes that whether the findings reflect “genuinely negligible behavioural responses” or “the difficulty of measuring small effects amid market turbulence remains an open question”. This language appropriately communicates that the current

method and available data do not find a statistically significant effect, rather than proving that the policy has no effect at all.

2.6. Adjustments to the methodology

As part of the verification exercise, Cambridge Econometrics made some suggestions for alterations to the method (including adjustments to the data set, and to the choice of control variables), that may have resulted in statistically significant findings. Some were implemented by T&E without achieving statistical significance, while others were not implemented (for a variety of reasons both methodological and practical). The write-up from T&E accurately reflects the findings of the analysis based on the current methodology, and there is no clear evidence that any of the suggested changes would have resulted in more concrete findings.