

Appendix E.iv.b – Commercial Revenue – Elasticity

Retail revenue elasticity

Specifically, three complementary approaches were applied: a formal structural break test, a regression model with a post-2021 interaction term, and a split-sample regression. Taken together, these analyses provide consistent evidence that the elasticity of Retail and Catering revenues with respect to passenger volumes has materially declined since 2021.

A formal Chow breakpoint test identifies a statistically significant structural break in 2021, rejecting the null hypothesis of parameter stability. The timing of this break coincides with the removal of VAT-free shopping and broader post-pandemic structural changes in passenger composition, dwell behaviour and terminal congestion. This indicates that the pre-2021 passenger–revenue relationship can no longer be assumed to hold going forward.

Supporting this finding, a regression model including an interaction term between total passenger volumes and the post-2021 period estimates a reduction of approximately 0.11 in elasticity relative to the pre-break relationship. This confirms that, even after controlling for total passenger growth, incremental passengers generate materially lower incremental Retail and Catering revenues in the post-2021 regime.

The split-sample regression yields consistent results. When estimating elasticity across the full sample period, the elasticity is approximately 0.8, whereas restricting the sample to the post-2021 period reduces the estimated elasticity to around 0.72. Importantly, this decline is observed consistently across multiple years through to 2025, demonstrating that the effect is persistent rather than attributable to a one-off distortion in a single year.

1. Chow breakpoint test

Basic model	$\Delta \ln$ retail revenue	Sample
$\Delta \ln$ total pax	0.82***	2015-2025

Chow breakpoint test	Value
Null Hypothesis: No breaks at specified breakpoints	
Breakpoint	2021
F-statistic	3.30*
Log likelihood ratio	7.31**
Wald statistic	6.61**

The test indicates a break at 2021; the null hypothesis can be rejected at the 5% significant level for the log-likelihood (LR) ratio and Wald tests, and at the 10% significant level for the Chow F-test. In small samples, the LR and Wald tests are often more powerful than the standard Chow F-test.

2. Regression with the interaction term

Post-2021: years 2021-2025

COVID: years 2020-2022

Interaction-term model	$\Delta \ln$ retail revenue	Sample
$\Delta \ln$ total pax, interaction total pax and post – 2021, post-2021, COVID	0.83***, -0.11, 0.06, -0.20	2015-2025
$\Delta \ln$ total pax, interaction total pax and post – 2021, COVID	0.87***, -0.13, -0.17*	2015-2025

3. Regression with the split-sample

Split sample model	$\Delta \ln$ retail revenue	Sample
$\Delta \ln$ total pax, COVID	0.80***, -0.22***	2015-2025
$\Delta \ln$ total pax	0.98***	2015-2020
$\Delta \ln$ total pax, COVID	0.72**, -0.20	2021-2025