Chicago PPLTT and ChatGPT Subscriptions

January 26, 2026

1 Background

Chicago's Personal Property Lease Transaction Tax (PPLTT) applies to AI subscription services including ChatGPT Plus. The tax rate increased from 9% (October 2023) to 11% (January 2025).

2 Pass-Through Evidence

Figure 1 shows the median transaction amount for ChatGPT subscriptions in Chicago (zip3 606). The base ChatGPT Plus price is $20/month. Full pass-through would imply prices of $21.80 at 9% and $22.20 at 11%.

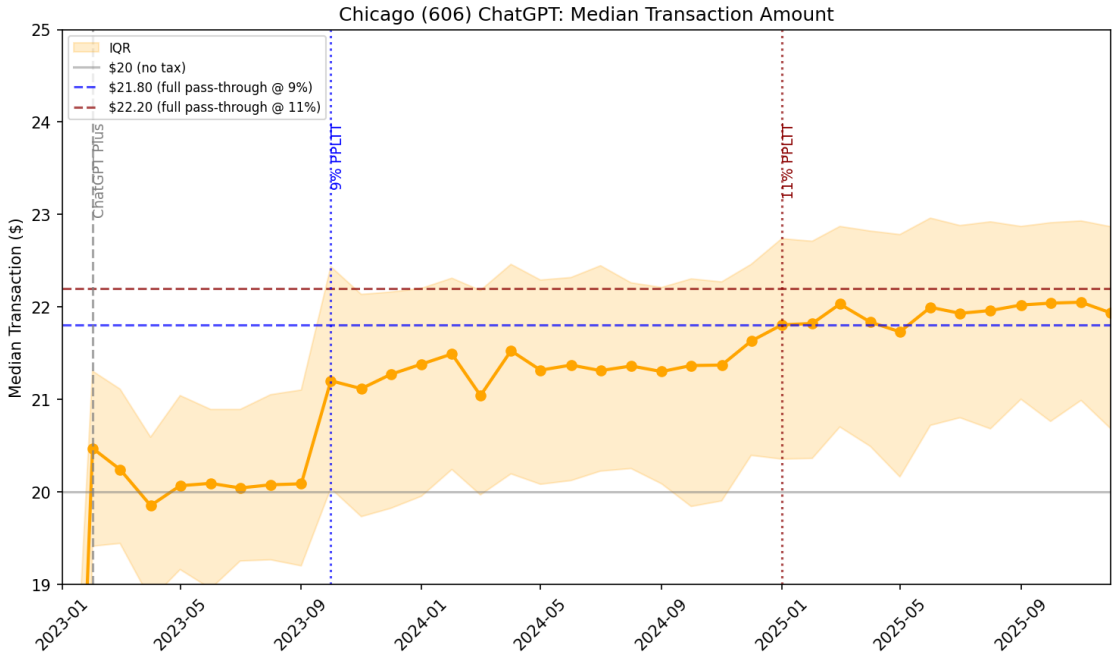

Figure 1: Median transaction amount for ChatGPT subscriptions in Chicago. Horizontal lines indicate expected prices under full pass-through. The IQR band shows the 25th–75th percentile range.

Observed median prices are slightly below full pass-through ($21.36 vs $21.80 during the 9% period; $21.95 vs $22.20 during the 11% period), suggesting pass-through is high but not complete.

3 Quantity Effects

3.1 Raw Time Series

Figure 2 compares log transactions in Chicago to the simple mean of 93 size-matched control zip3s. Controls are selected as zip3s with transaction counts within 50% of Chicago's count during January–June 2023.

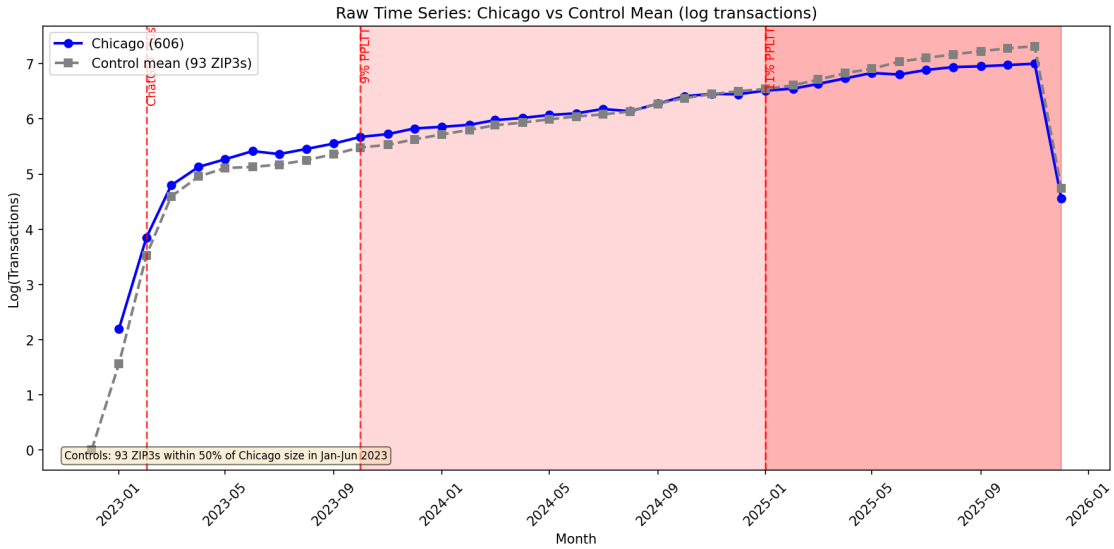

Figure 2: Raw time series of log transactions: Chicago vs. mean of 93 size-matched control zip3s.

3.2 Event Study

Figure 3 presents event study estimates from a difference-in-differences specification:

$$\log(\text{transactions}_{zt}) = \sum_{\tau \neq \text{Sep 2023}} \beta_\tau \cdot \mathbf{1}[\text{Chicago}] \cdot \mathbf{1}[\text{month} = \tau] + \alpha_z + \gamma_t + \varepsilon_{zt}$$

Standard errors are clustered at the zip3 level.

The pooled DiD coefficient is -0.19 (se $= 0.02$), implying Chicago subscriptions fell approximately 17% relative to controls after the tax. Separating by tax rate:

- 9% period (Oct 2023–Dec 2024): coefficient ≈ -0.08, elasticity ≈ -1
- 11% period (Jan 2025+): coefficient ≈ -0.33, elasticity ≈ -3

Pre-trends are not perfectly flat (joint F-test rejects), but magnitudes are small (mean $|\text{coef}| = 0.05$) relative to post-treatment effects.

4 Discussion

The evidence suggests:

1. Pass-through is high but slightly incomplete

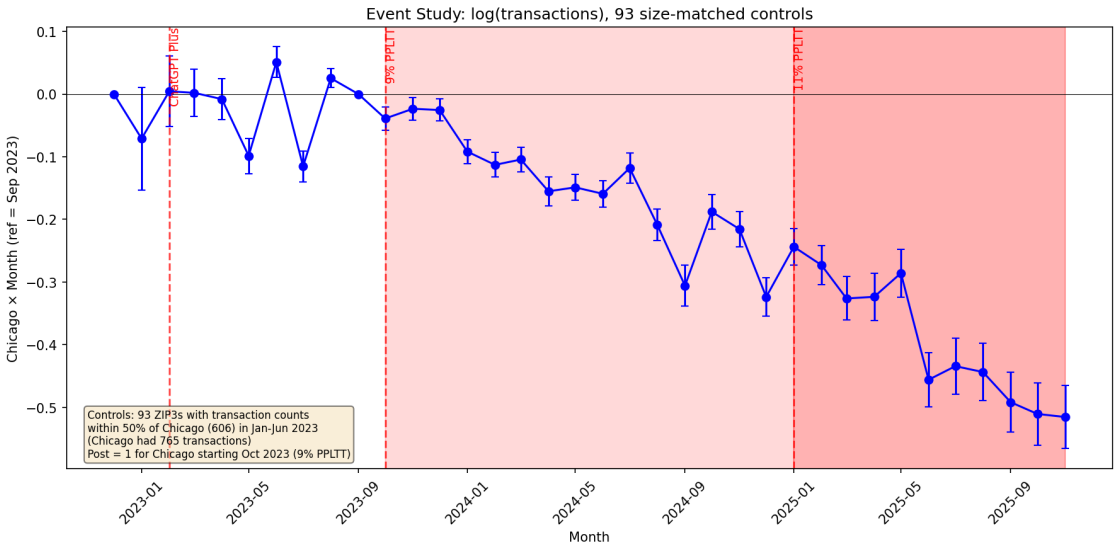

Figure 3: Event study coefficients for Chicago relative to 93 size-matched control zip3s. Reference period is September 2023. Error bars show 95% confidence intervals. Light red shading indicates the 9% tax period; darker red indicates 11%.

2. Quantity declined relative to controls, with the effect growing at higher tax rates

3. Implied elasticity is around -1 at 9% and -3 at 11%, consistent with demand becoming more elastic at higher prices