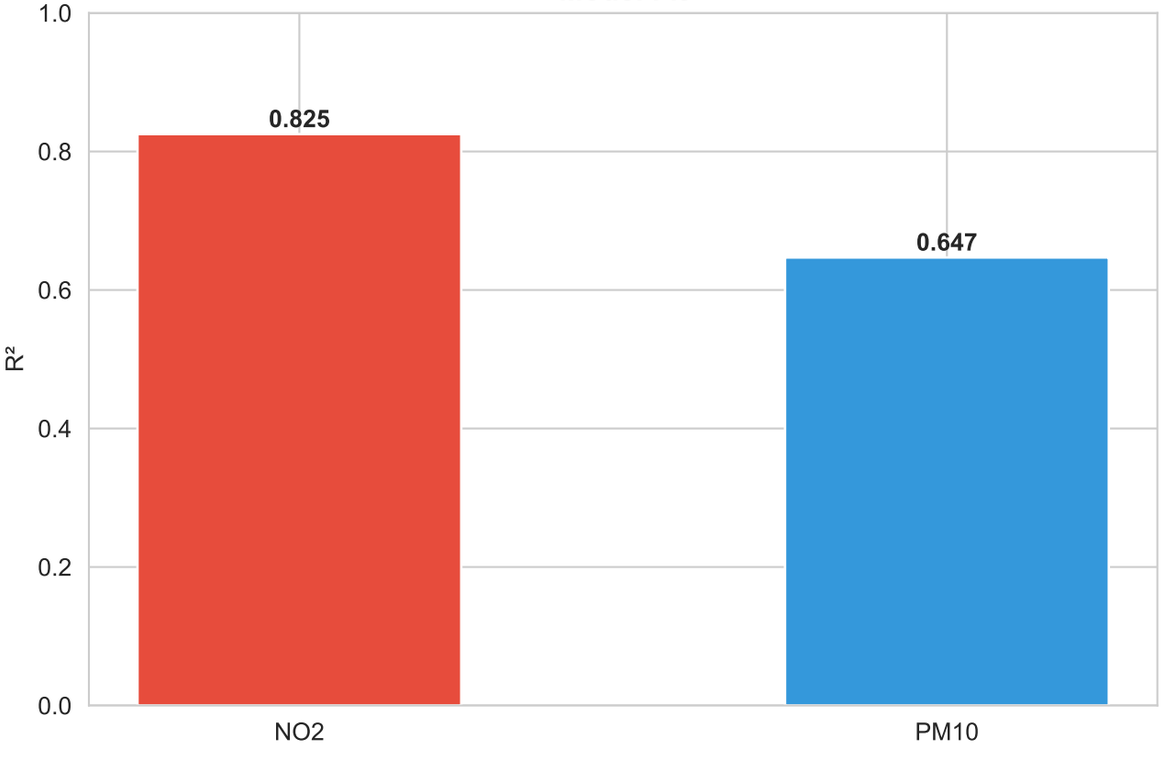
# Darmstadt Air Quality — Driver Analysis Summary
# ARX model with Newey-West SEs, Benjamini-Yekutieli FDR correction

## Model Fit




## Key Findings

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TOP SIGNIFICANT DRIVERS


NO2:
  no2 lag1..................... +0.44 µg/m³
  Diesel ban................... -5.07 µg/m³
  COVID 1...................... -2.51 µg/m³
  9e Ticket.................... -1.41 µg/m³
  fourier cos 1................ +3.01 µg/m³
  fourier sin 2................ +0.60 µg/m³
  is weekend................... -7.13 µg/m³
  is holiday................... -6.62 µg/m³

PM10:
  pm10 lag1.................... +0.60 µg/m³
  pm10 lag2.................... -0.09 µg/m³
  Diesel ban................... -1.51 µg/m³
  fourier sin 2................ +0.56 µg/m³
  fourier cos 3................ -0.56 µg/m³
  is weekend................... -1.89 µg/m³
  trend........................ -0.32 µg/m³
  wind speed................... -0.46 µg/m³
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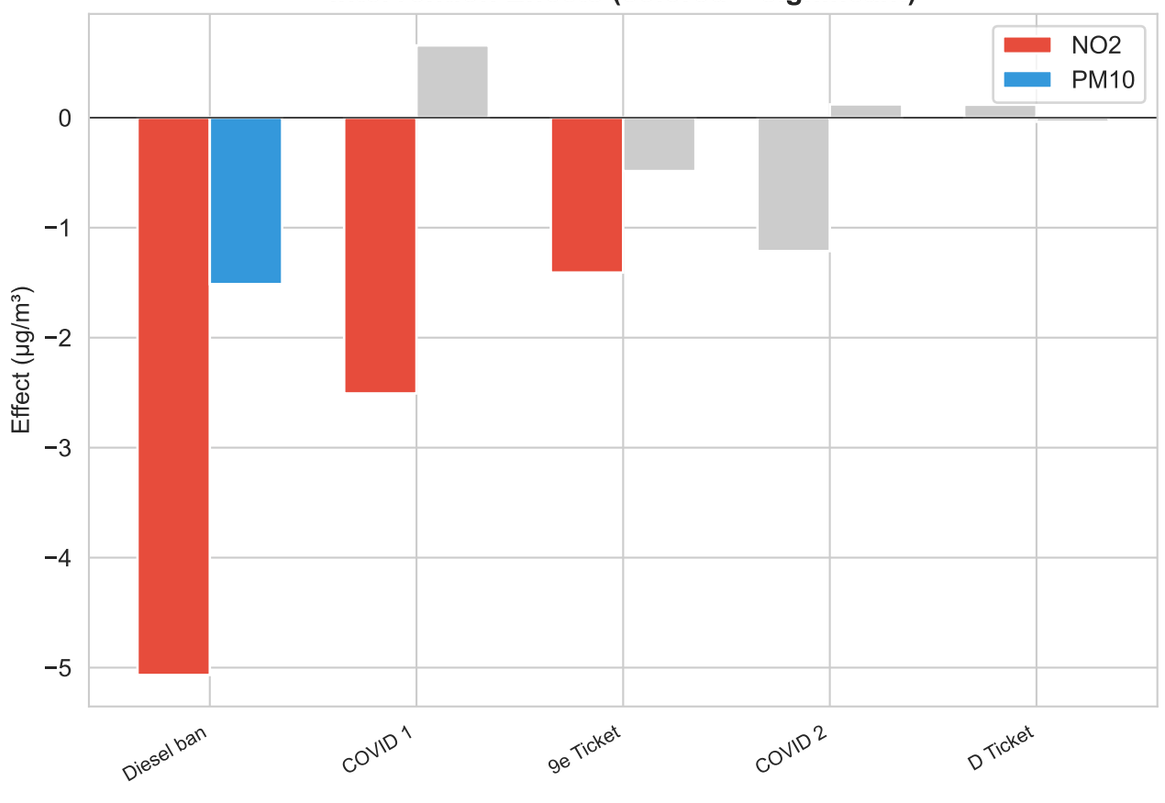
## Intervention Effects (colored = significant)




## How to Read This

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INTERPRETATION

• AR(1) is the strongest predictor: pollution
  is highly persistent day-to-day.

• Wind speed is the #1 weather driver —
  higher wind disperses pollutants.

• Temperature has opposite effects:
  cold inversions trap NO2,
  but warm + dry conditions raise PM10.

• Sahara dust adds ~5-15 µg/m³ to PM10
  during events — a natural confounder.

• Check intervention panel for policy effects
  after controlling for all confounders.

• Model controls for autocorrelation (AR lags),
  seasonal cycles (Fourier), and uses
  heteroskedasticity-robust standard errors.
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