

UK Retail Demand Forecasting – Sample Upload File Requirements

Your `sample_upload.csv` file must meet **strict structural and value requirements** to ensure accurate forecasting using the pre-trained Prophet models in this application.

Required CSV Structure (Columns and Format)

Column Name	Data Type	Description
ds	date	Date of the observation (e.g. 2023-01-01). Must be the first day of each quarter (Jan, Apr, Jul, Oct).
coicop_code	str or int	The COICOP category code (e.g. 05, 07, 10). Can be high-level or specific (e.g. 05.1.1).
volume	float or int	UK household demand volume in £ millions . Must be positive and realistic .
price	float or int	Nominal price index. Must be in thousands , not hundreds.
deflator	float or int	Implied deflator (proxy for inflation). Typically in 100–130 range.
unemployment_rate	float	Quarterly unemployment rate (%) from FRED.
is_holiday	0 or 1	1 if UK bank holiday falls in the quarter, else 0 .

Minimum Historical Data per COICOP

- **Minimum 12 quarters (3 years)** per COICOP code is strongly recommended.
- Volume, price, and deflator must have realistic economic variation.
- **Less than 8 rows per code** may cause:
 - Flat (linear) forecasts
 - Negative or unrealistic values
 - Model overfitting

Critical Value Rules

- `volume` : Positive and realistic (e.g., > 5000)
- `price` : Must be in **thousands**
- `deflator` : Typical range is **100–130**
- All values must be positive (except `is_holiday`)

Formatting & Integrity Rules

- Dates must be sorted, quarterly, and ascending.
- Header must exactly match:
`ds,coicop_code,volume,price,deflator,unemployment_rate,is_holiday`
- Do not include currency symbols or thousand separators.
- File must be UTF-8 encoded CSV.

Common Mistakes to Avoid

- ❌ `price` values in hundreds (must be thousands)
- ❌ Too few quarters of data
- ❌ Flat `volume` values
- ❌ Column name typos or order mismatch
- ❌ Including COICOP codes with no model
- ❌ Excel-specific formatting or non-UTF8 encoding

Sample Valid Row (for COICOP 05)

```
ds,coicop_code,volume,price,deflator,unemployment_rate,is_holiday
2022-01-01,05,18800,11250,101.3,4.1,0
2022-04-01,05,18920,11320,101.6,4.0,0
2022-07-01,05,19030,11400,101.9,4.2,0
```