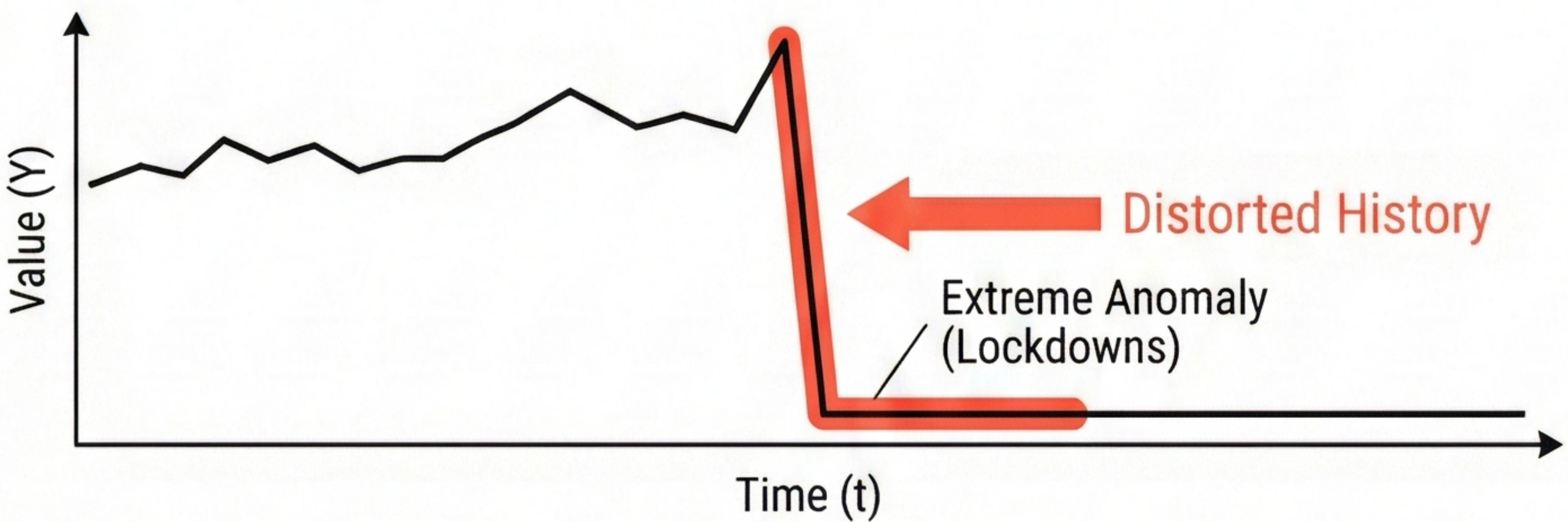


29 EN Predictive Statistics Input History	
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30 EN Predictive Statistics wMAPE in Power	
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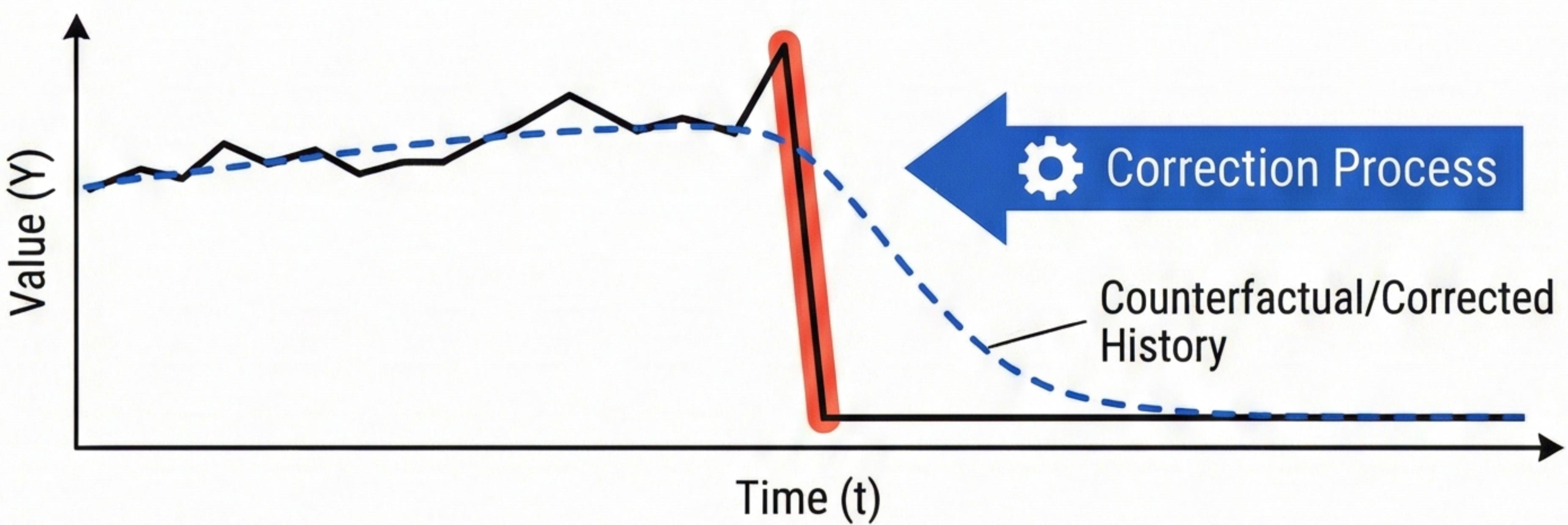
# INPUT HISTORY CORRECTION IN TIME SERIES FORECASTING

## THE PROBLEM: BLACK SWAN EVENT (PANDEMIC LOCKDOWNS)



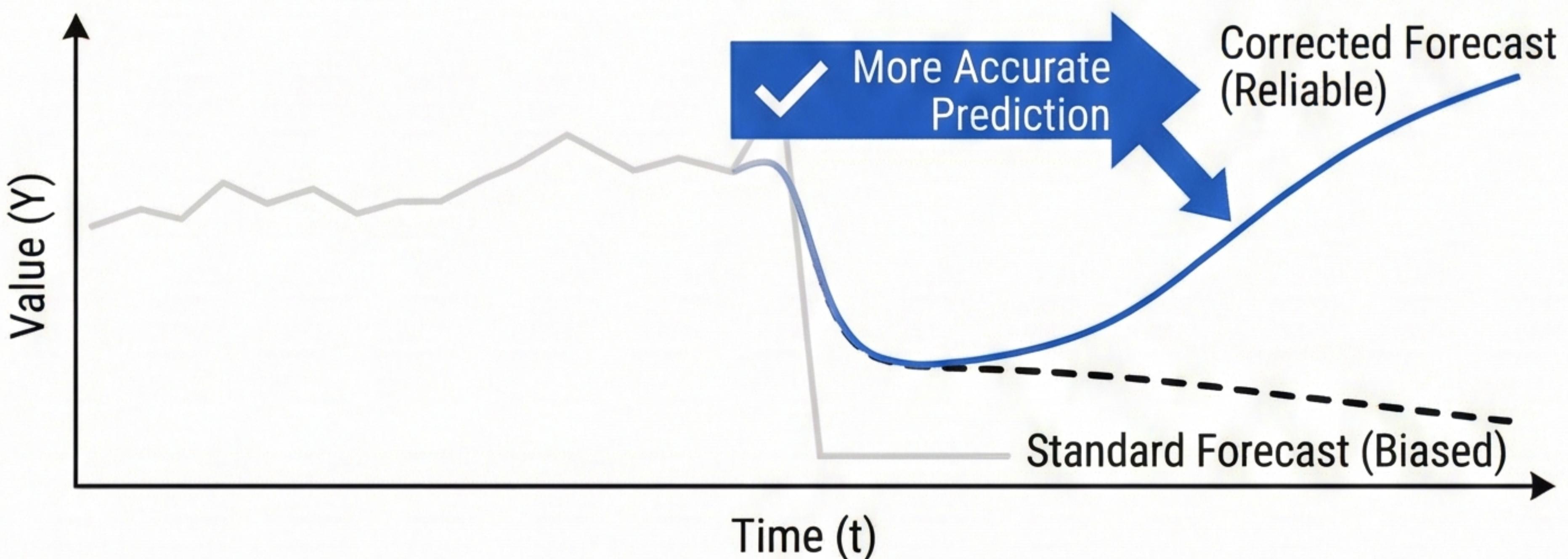
Historical data is distorted by rare, extreme events, leading to inaccurate future forecasts.

## THE SOLUTION: INPUT HISTORY CORRECTION (DATA CLEANSING)



Anomalous data points are identified and replaced with estimated "normal" values (e.g., using interpolation or similar past periods).

## THE RESULT: IMPROVED FORECAST (POST-CORRECTION)



Forecasting models trained on corrected history produce more reliable future predictions, ignoring the extreme event's bias.

# FORECAST ACCURACY METRIC: 1-wMAPE (WEIGHTED MEAN ABSOLUTE PERCENTAGE ERROR)

## 1. CONCEPT DEFINITION

wMAPE (Weighted MAPE)

Total Weighted Percentage Error



= wMAPE

Total Weight (e.g., COGS)

Measures the weighted average of absolute percentage errors, prioritizing items based on their weight (importance).

ACCURACY METRIC (1-wMAPE)



The complement of wMAPE. Represents the proportion of forecast that is accurate (0-1 or 0-100%).

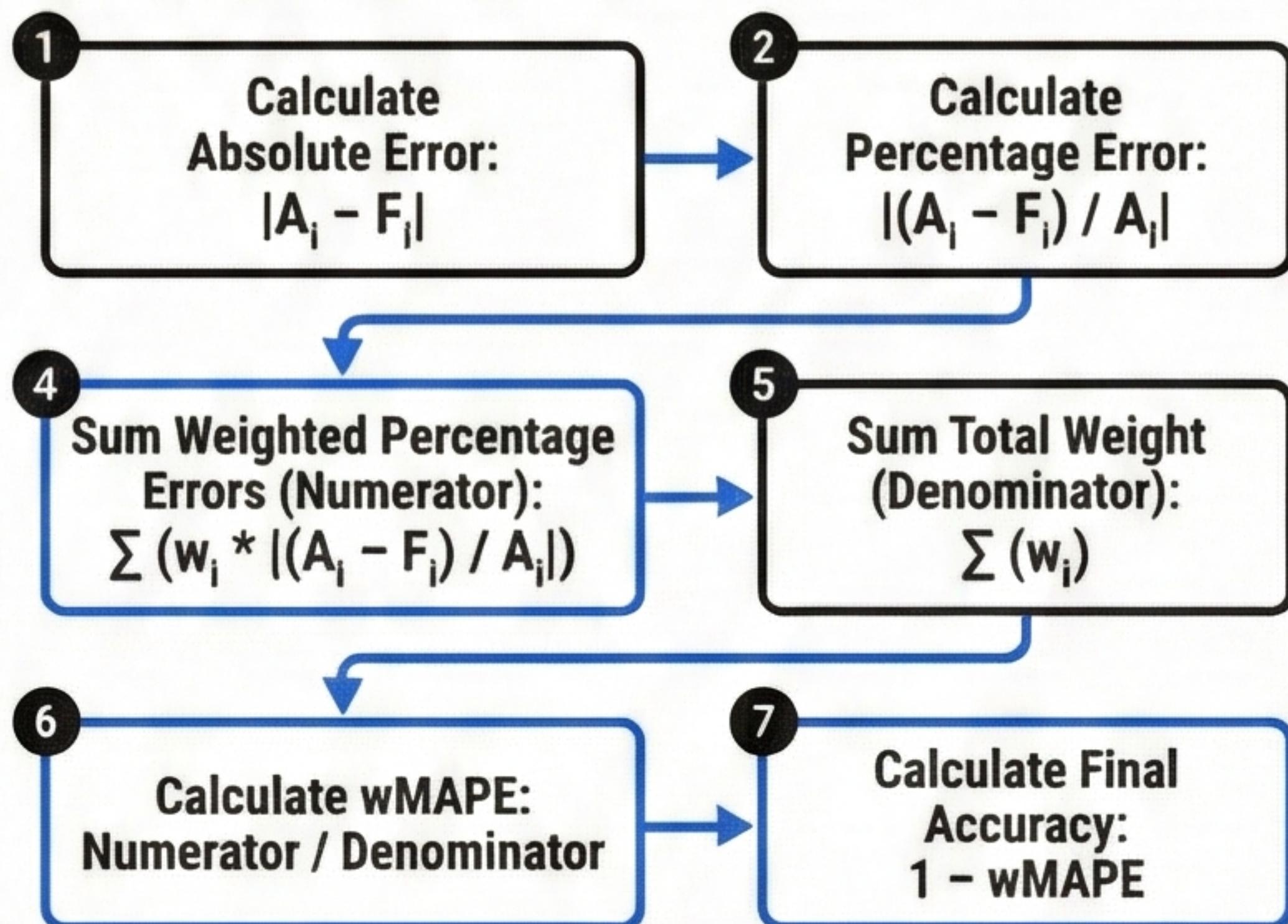
## 2. THE FORMULA & CALCULATION

$$1 - \text{wMAPE} = 1 - \frac{\sum (w_i * \left| \frac{A_i - F_i}{A_i} \right|)}{\sum (w_i)}$$

### TERMS:

- $A_i$ : Actual demand of item i
- $F_i$ : Forecast demand of item i
- $w_i$ : Weight of item i (e.g., COGS, Revenue)
- $\left| \frac{A_i - F_i}{A_i} \right|$ : Absolute Percentage Error of item i
- $\sum$ : Summation across all items (i=1 to n)

### CALCULATION STEPS:



## 3. POWER BI IMPLEMENTATION FLOW

