



## AS Seasonal Adjustment GPT v 1.1 – Documentation and Instructions

### Overview

AS Seasonal Adjustment GPT is an advanced tool designed for the seasonal adjustment of monthly and quarterly economic and financial market data. It is equipped to handle time series data, providing analysts with the capability to adjust for seasonal variations and correct outliers, thereby facilitating more accurate data analysis and forecasting.

### Capabilities

**1. Seasonal Adjustment:** Using the 'seasonal\_decompose' method from the 'statsmodels.tsa.seasonal' Python module, this tool can adjust time series data for seasonal effects. It decomposes a time series into trend, seasonality and residuals. The GPT accepts monthly and quarterly time series data in excel and CSV format.

**2. Outlier Correction:** Post-adjustment, the GPT offers methods for correcting outliers, including:

- Capping and Flooring Method
- Interpolation
- Median Replacement
- Winsorization
- Smoothing Techniques

**3. Output:** The GPT will output adjusted data in chart and CSV formats, displaying both original and adjusted series.

### How to Use

#### Step 1: Data Preparation

Ensure your time series data is formatted correctly. It should be in a monthly or quarterly frequency.

#### Step 2: Choosing the Model

Decide between a multiplicative or additive model for seasonal adjustment. This choice depends on the nature of your data:

- Multiplicative Model: Suitable when seasonal variations are proportional to the level of the series.
- Additive Model: Appropriate when seasonal variations are stable over time.

### Step 3: Data Submission

Submit your time series data to the GPT for processing. The data can be uploaded in a compatible format (e.g., CSV).

### Step 4: Seasonal Adjustment

The GPT will apply the chosen seasonal adjustment method and return the adjusted series.

### Step 5: Outlier Correction

Post-adjustment, you can request outlier correction using one of the provided methods. The choice depends on your data characteristics and analysis objectives.

### Step 6: Review and Export

Review the adjusted data and its graphical representation. You can then request the data to be exported in your desired format (CSV, chart).

### Notes

- Ensure your data is clean and well-organized before uploading. The GPT can sort out missing variables and mismatched columns, but the better formatted the data are from the start, the better the analysis.
- Be thoughtful in choosing between multiplicative and additive models based on your data's characteristics.
- Understand your data to select the most appropriate outlier correction method.
- Use the outputs to refine your analysis and potentially re-run with different models or outlier correction methods for comparison.
- The GPT does not yet have the ability to calendar adjust independently, but it should be able to do so if you provide it with working day data.

### Version Updates

The GPT will be trained on an ad-hoc basis in line with user comments as well as the developer's aims and objectives. Future versions will aim to add a calendar adjustment algo for selected countries.

### General disclaimer

Please be aware that The AS Seasonal Adjustment GPT is powered by GPT (Generative Pre-trained Transformer). This technology is designed to assist in the analysis and visualization of economic and financial data. While we strive for accuracy, the results generated by this tool should be used as a guide only and not as a definitive source. The tool's output is dependent on a variety of factors, including the quality of the input data and the inherent limitations of AI technology, which can lead to inaccuracies or incomplete analysis.

As the creator of The AS Seasonal Adjustment GPT, Claus Vistesén does not assume responsibility for any decisions, investments, or actions taken based on the information provided by this tool. Users are strongly advised to perform their own due diligence and consult with professional advisors before making any financial or business decisions. The tool is not a substitute for professional advice and should not be relied upon as such.

By using The AS Seasonal Adjustment GPT users acknowledge and agree that they are solely responsible for the interpretation and use of any and all information generated by the tool.