Generate synthetic business revenue data with the following specifications:  
  
Data Structure:  
1. CSV format with headers: Date, Business, Revenue, GDP  
2. Time period: Monthly data from 2013-01-31 to 2022-12-31  
3. Five businesses: biz A, biz B, biz C, biz D, biz E  
  
Parameters:  
1. GDP: Linear increase from 5.0 to 10.0 over the time period  
2. Each business has different GDP sensitivities (beta):  
   - biz A: 15 (medium sensitivity)  
   - biz B: 25 (highest sensitivity)  
   - biz C: 20 (medium-high sensitivity)  
   - biz D: 18 (medium sensitivity)  
   - biz E: 10 (lowest sensitivity)  
  
3. Base revenue levels:  
   - biz A: 10  
   - biz B: 15  
   - biz C: 12  
   - biz D: 8  
   - biz E: 5  
  
4. Noise characteristics:  
   - Add random noise following t-distribution  
   - Scale noise differently for each business:  
     \* biz B: highest noise (scale factor 12)  
     \* biz C: medium-high noise (scale factor 10)  
     \* biz A: medium noise (scale factor 8)  
     \* biz D: medium-low noise (scale factor 7)  
     \* biz E: lowest noise (scale factor 5)  
   - Include occasional random spikes (10% probability)  
   - Add cyclical patterns using sine waves  
  
Formula for each data point:  
Revenue = base\_revenue + (sensitivity \* GDP) + noise + random\_spikes  
  
Please generate the complete CSV data maintaining these relationships and noise characteristics. Format numbers to 4 decimal places. Sort the data first by date, then by business name.  
  
Return only the CSV data starting with the header row, with each record on a new line.

**Data Structure:**

1. CSV format with headers: Date, Business, Revenue, Unemployment rate
2. Time period: Monthly data from 2013-01-31 to 2022-12-31
3. Three businesses: Business X, Business Y, Business Z

**Parameters:**

1. Unemployment rate: Linear increase from 2.0 to 7.0 over the time period
2. **Each business has different** Unemployment rate **sensitivities (beta)**:
   * Business X: 20,000,000 (medium-high sensitivity)
   * Business Y: 25,000,000 (highest sensitivity)
   * Business Z: 15,000,000 (medium sensitivity)
3. **Base revenue levels**:
   * Business X: 12,000,000
   * Business Y: 18,000,000
   * Business Z: 15,000,000
4. **Noise characteristics**:
   * Add random noise following a t-distribution
   * Scale noise differently for each business:
     + Business Y: highest noise (scale factor 12)
     + Business Z: medium-high noise (scale factor 10)
     + Business X: medium noise (scale factor 8)
   * Include occasional random spikes (10% probability)
   * Add cyclical patterns using sine waves

**Formula for each data point**: Revenue = base\_revenue + (sensitivity \* Unemployment rate) + noise + random\_spikes

**Instructions**:

* Format numbers to 4 decimal places.
* Sort the data first by date, then by business name.

Generate and return the complete CSV data, starting with the header row, with each record on a new line.

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