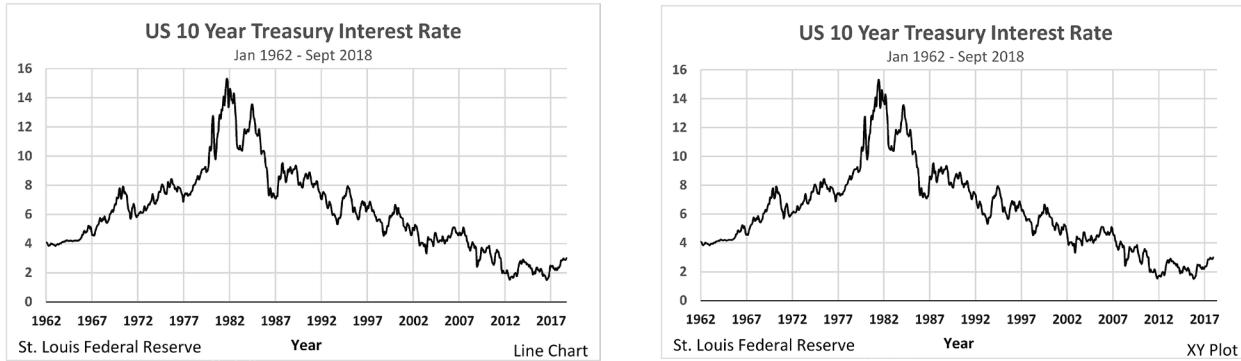


Excel Date-Based Charts: Line versus Scatter (XY)

Milo Schield

Excel's line and scatter (XY) charts can create identical date-based graphs. They differ in how they measure time.



These two charts are different types. The left is a Line chart; the right is a scatter (XY) chart. Both use the same data (center below). They differ in how they measure time.

Compare their Format Axis windows.

The central table shows monthly observations from January 1962 to December 1962, with the DGS10 interest rate values:

observation_date	DGS10
1962-01-01	4.08
1962-02-01	4.04
1962-03-01	3.93
1962-04-01	3.84
1962-05-01	3.87
1962-06-01	3.91
1962-07-01	4.01
1962-08-01	3.98
1962-09-01	3.98
1962-10-01	3.93
1962-11-01	3.92
1962-12-01	3.86

The 'Format Axis' dialog for the Line chart (left) shows settings for 'Axis Type' (set to 'Automatically select based on data'), 'Bounds' (Minimum: 1/1/1962, Maximum: 9/1/2018), and 'Units' (Major: 5 Years).

The 'Format Axis' dialog for the XY Plot (right) shows settings for 'Bounds' (Minimum: 22647.0, Maximum: 43500.0) and 'Units' (Major: 1850.0). The X-axis is measured in Excel days since Jan 1, 1900.

These two charts measure date-times in different units.

- The Line chart (left) uses month/day/year units.
- The scatter (XY) chart (right) uses Excel units: days since Jan 1, 1900.

Moral: Use the line chart, not the scatter (XY) chart, when plotting data versus date-based time.

Source: Excel 2013.

Copy at www.StatLit.org/pdf/2018-Schield-Excel-Date-Based-Charts.pdf