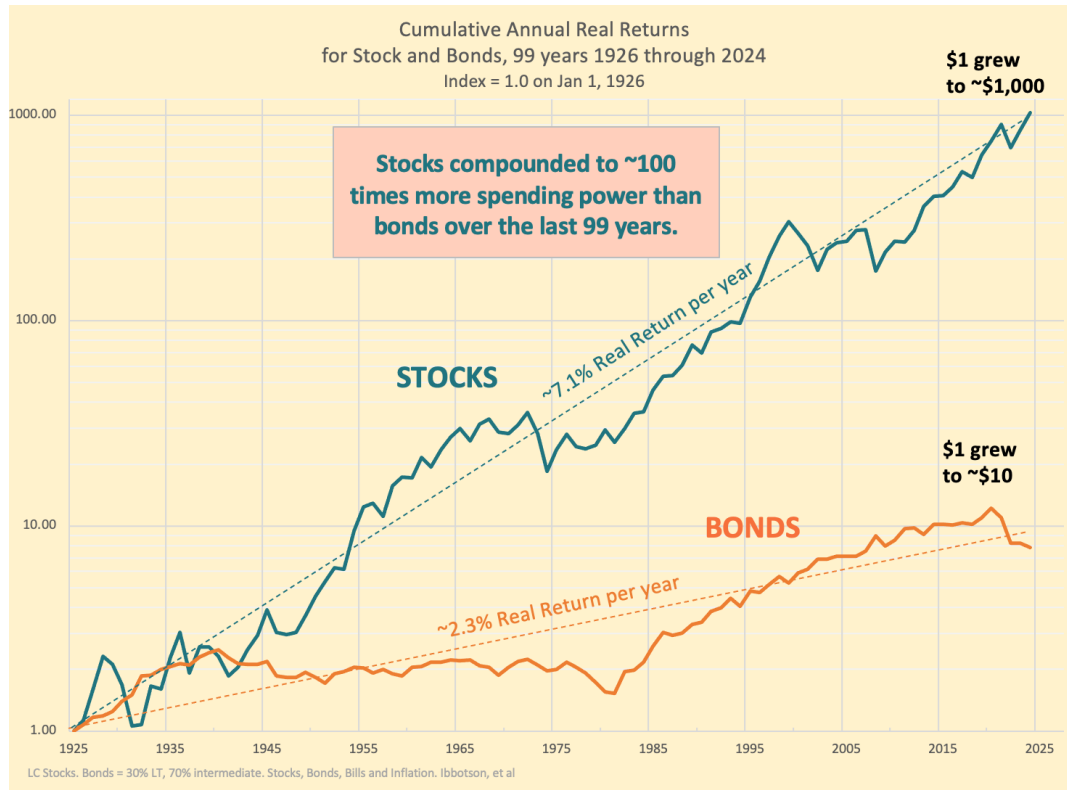


## Cumulative Annual Real Returns for Stocks and Bonds for 1926-2024



The graph shows the power of compound returns over time. Stocks have doubled in real spending power roughly every decade. Bonds have doubled in real spending power roughly in 30 years. Over 99 years, stocks have outperformed bond by a factor ~100.

I plot cumulative Real Returns for Stocks and Bonds on a semi-log graph. The Y (vertical) axis is a logarithmic scale. Each vertical distance on the Y-axis is the same percentage change. A rate of change over time plots as a straight line. The greater the rate of change, the steeper the straight line.

- When the slope of a line between any two points is upward, the average annual rate of return is greater than 0%. Steeper upward is a greater annual return rate.
- A horizontal line between any two points is 0% average annual return.  
Those of us who are retired focus on the periods of very poor returns.  
We've had three long periods of 0% cumulative return starting in 1929 (14 years), 1966 (16 years), and 2000 (13 years)
- When the slope of a line between any two points is downward, the average annual rate of return is less than 0%. Steeper downward is greater negative return rate.