Data Appendix

Section 1: original_data.xls, Data sheet

Unit of Observation: Each row in the data frame represents a single observation of the stock market conditions at the first day of a month in a given year.

- In total there are **645** chronological months in the reduced dataset, spanning about 60 years.
- Data was filtered to only include rows within the 5th to 95th quantiles of PE Ratios and removed values beyond this quantile range

Subsection 1.1 *Date*

- Date when observation of Stock Market conditions occurred (monthly)
  - *Type:* Time, Quantitative, YYYY-MM-DD
  - Range: 1965-01-01 to 2025-02-01
  - Example: 1994-04-01

	Date
mean	1994-12-23 22:36:13.961218816
min	1965-01-01 00:00:00
25%	1980-01-01 00:00:00
50%	1995-01-01 00:00:00
75%	2010-01-01 00:00:00
max	2025-02-01 00:00:00
std	Na

Distribution: The distribution of dates is a uniform distribution, there is only one value of each Date for a given month.

Subsection 1.2 *Real Total Return Price*

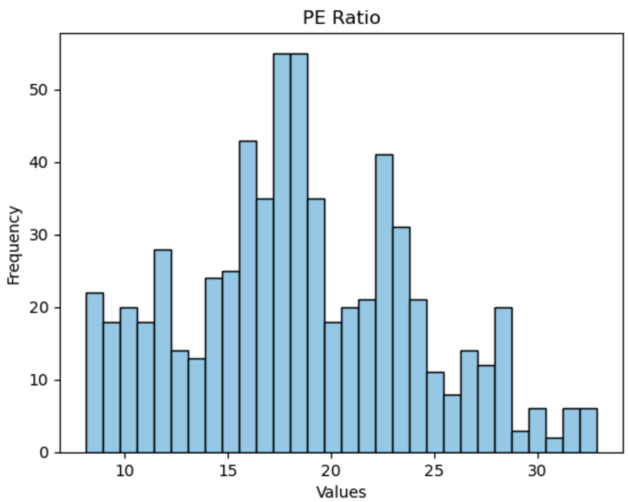
- This column documents the price value of Standard and Poor's (S&P) 500, a stock market index tracking the stock performance of about 80% of the total US market .
    - *Type*: Quantitative, Float
    - Range: 7.695859e+04 - 3.757981e+06
    - Example: 109618.976259

	Real Total Return Price
mean	7.902275e+05
median	3.805657e+05
std	8.476831e+05
min	7.695859e+04
25%	1.274345e+05
50%	3.805657e+05
75%	1.055169e+06
max	3.757981e+06

Subsection 1.3 *PE Ratio*

- This column includes the calculate S&P Stock value Price:Earnings Ratio, which reflects the valuation of a given stock. A large ratio value indicates stocks are overvalued. A ratio of 25 can be interpreted as overall, investors across the market are willing to pay $25 for every single dollar of earnings in the market. Investors tend to consider lower PE Ratio is representative of a good market.
  - *Type:* Quantitative Float
  - Range: 8.092719 - 32.880714
  - Example: 18.585224

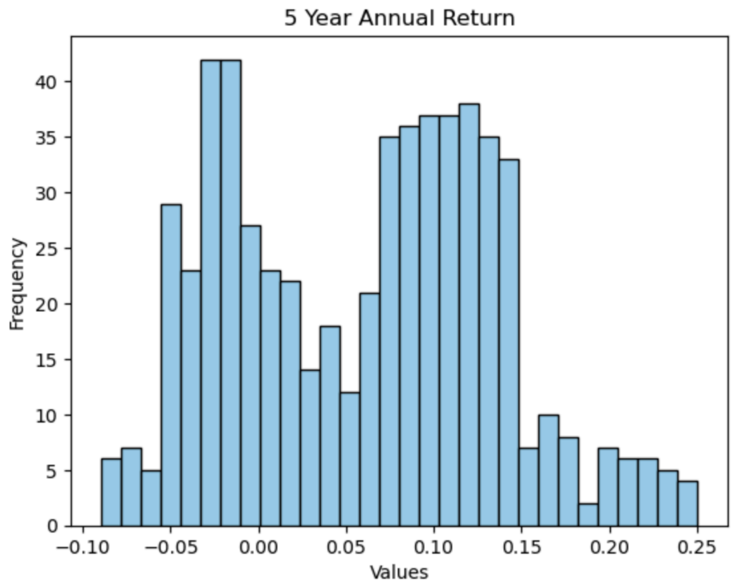
	PE Ratio
mean	18.505138
median	18.048810
std	5.596425
min	8.092719
25%	14.966033
50%	18.048810
75%	22.500735
max	32.880714



Subsection 1.4 5 Year Annual Return

- This column indicates the 5 year S&P 500 annual return. This value reflects annual average price returns over the last 5 years following a specific month.
    - *Type:* Quantitative
    - Range: -0.089841 - 0.250516
    - Example: 0.009866

	5 Year Annual Return
mean	0.060170
median	0.072459
std	0.075947
min	-0.089841
25%	-0.011007
50%	0.072459
75%	0.117961
max	0.250516

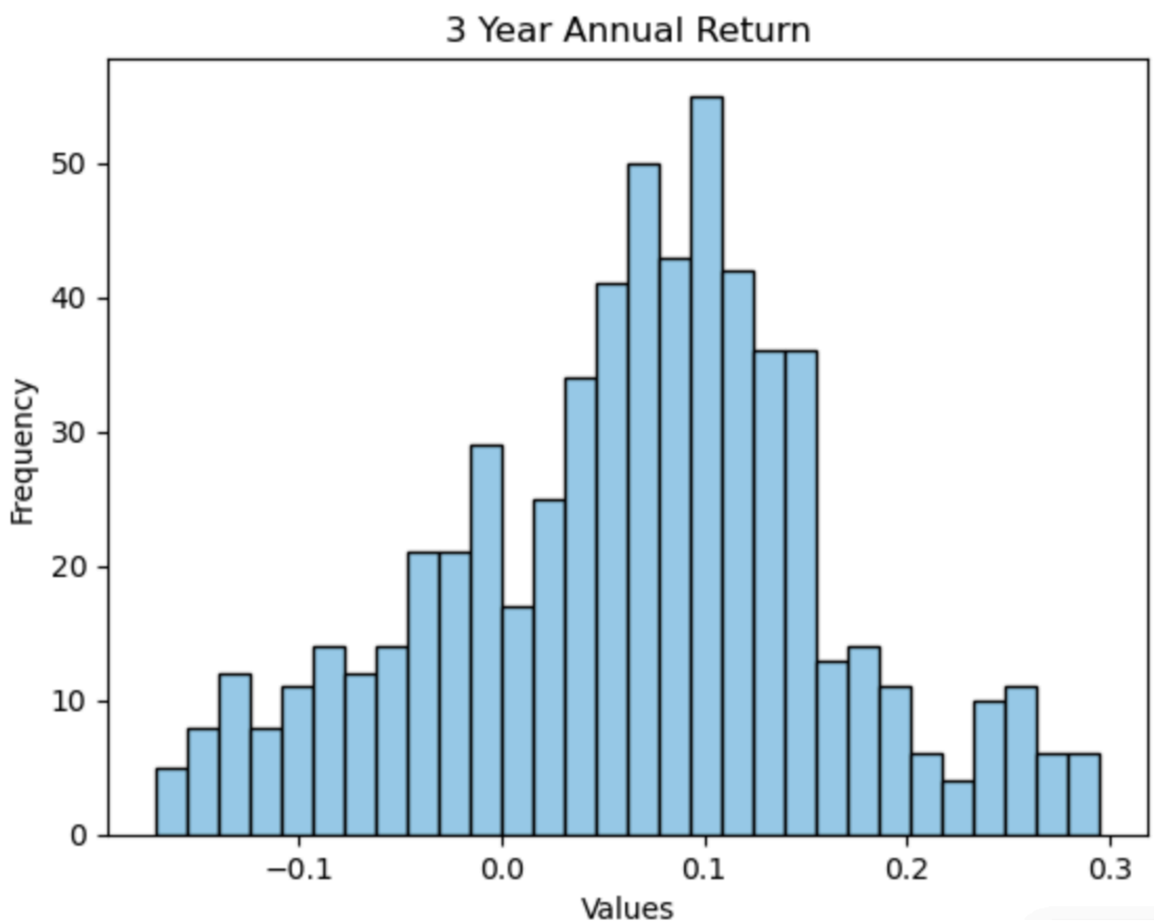


<u>Subsection 1.5 3 Year Annual Return</u>

- This column indicates the 3 year S&P 500 annual return. This value reflects annual average price returns over the last 5 years following a specific month.
    - *Type:* Quantitative
    - Range: -0.171116 to 0.295300
    - Example: 0.95453

	3 Year Annual Return
mean	0.064295
median	0.072152
std	0.095500
min	-0.171116
25%	-0.000326
50%	0.072152
75%	0.122992

max	0.295300


3 Year Annual Return
Frequency
0
10
20
30
40
50
−0.1
0.0
0.1
0.2
0.3
Values