

Are P/E Ratios Predictable?

by

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What is a P/E Ratio?

- Financial ratio measuring the price of a stock relative to its earnings:

$$P/E = \textit{Price} / \textit{Earnings}$$

$$= \textit{Market Cap} / \textit{Earnings}$$

$$= \textit{Share Price} / \textit{Earnings Per Share}$$

- Useful for quick assessment whether a stock is cheap or expensive.
- Earnings yield is more intuitive.

What is the Earnings Yield?

- Earnings yield is the reciprocal of the P/E ratio:

$$\textit{Earnings Yield} = \textit{Earnings/Price}$$

- If earnings were paid out as dividends, then the earnings yield would be the percentage return from buying the stock at a given price.
- Useful for quick comparison to other yields e.g. for government bonds so as to assess whether a stock is cheap or expensive considering future earnings prospects and risk.

Common Assumptions

- In academic papers and books on corporate finance it is sometimes assumed that P/E is constant forever.
- Investors sometimes assume that a stock will again trade at its historical average P/E.
- Let's check if these notions are correct ...

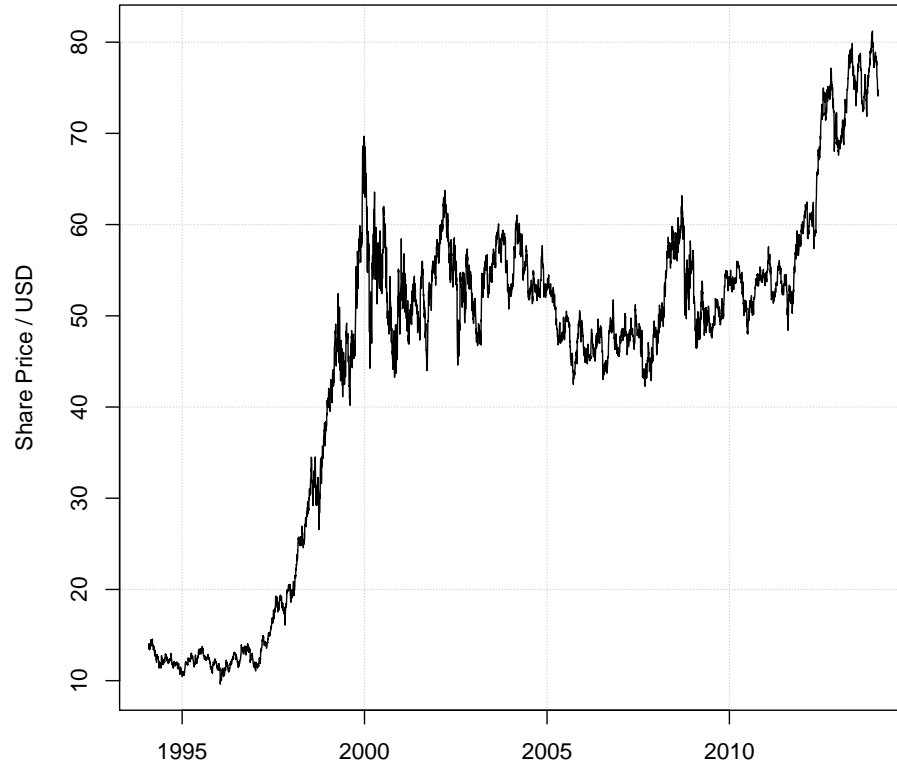
Wal-Mart (Financial Statistics)

Wal-Mart (1994-2014)	Mean	Stdev
ROA	9.1%	0.8%
ROE	22.6%	1.6%
Net Profit Margin	3.3%	0.3%
Equity / Assets	39.9%	1.9%
Earnings Retained	47.5%	29.2%
Dividend / Net Income	22.0%	7.1%
Net Share Buyback / Net Income	30.5%	24.7%

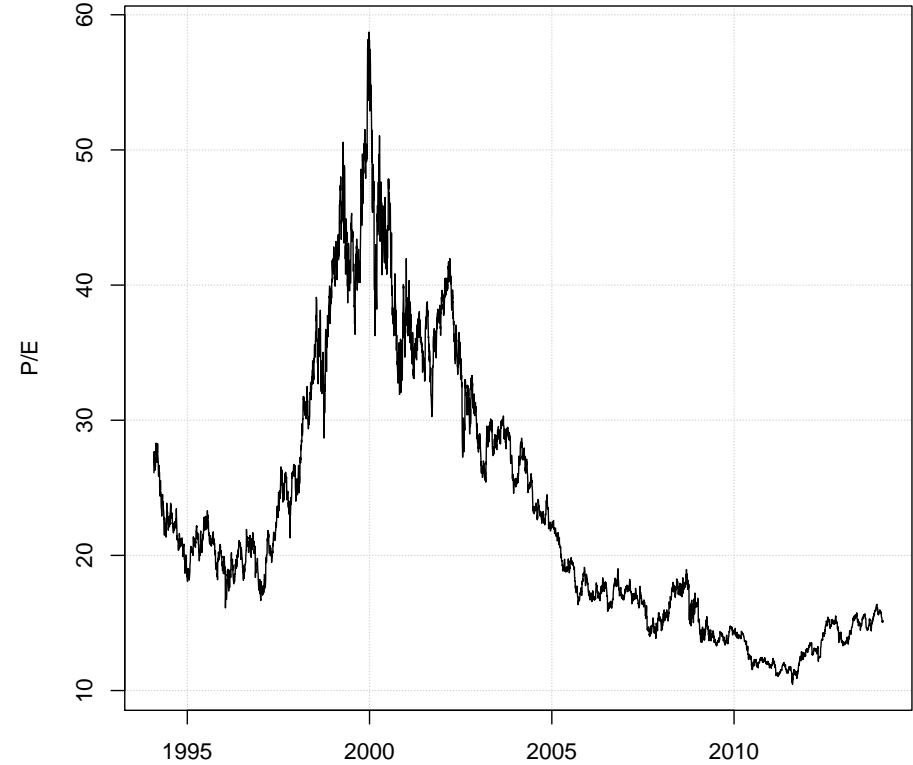
Wal-Mart has been a very stable company except for retained earnings.

Wal-Mart (Share Price and P/E)

Wal-Mart

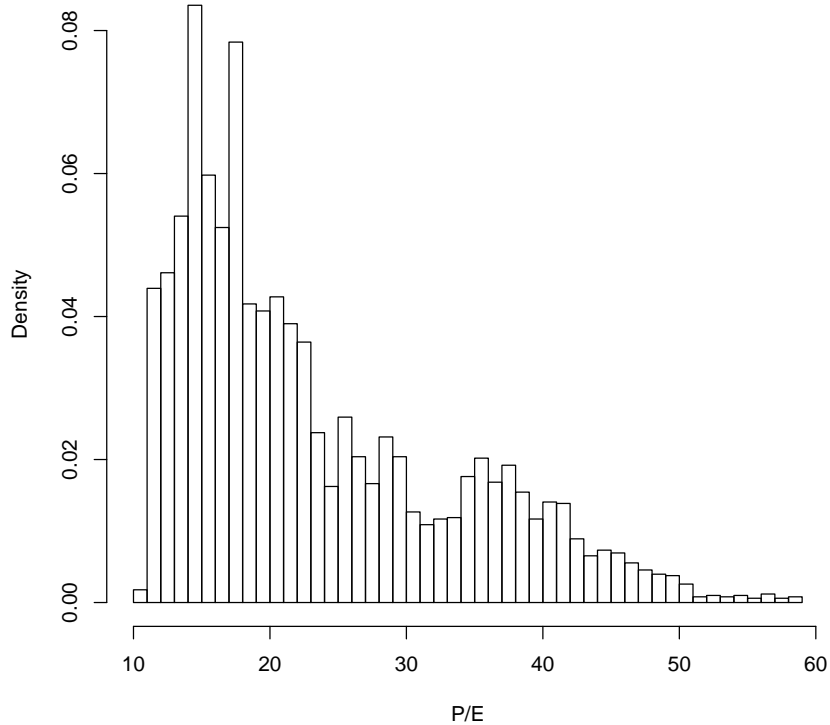


Wal-Mart (1994-2014)

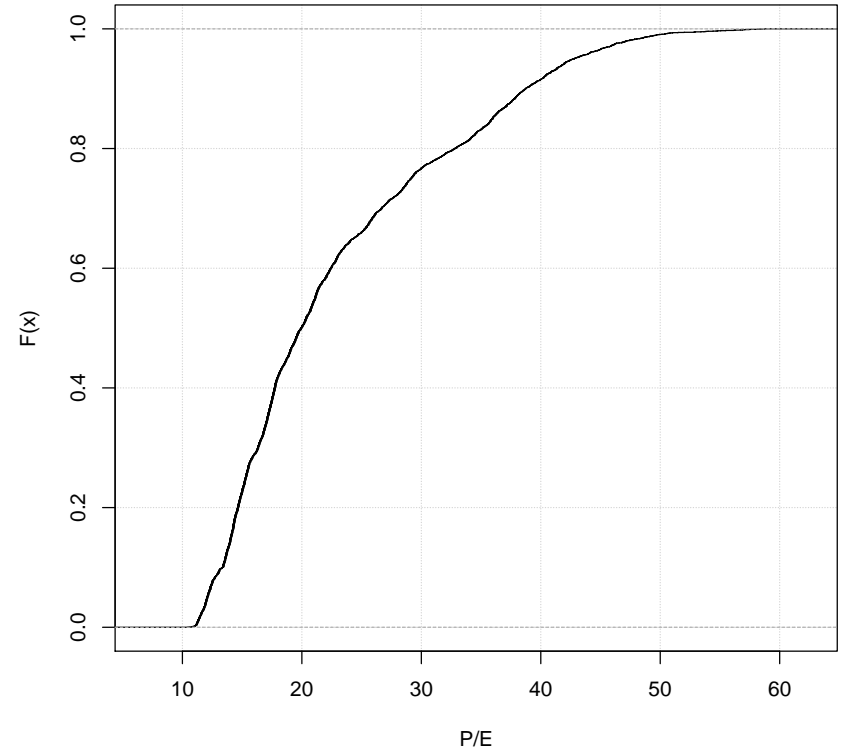


Wal-Mart (P/E Statistics)

Wal-Mart (1994-2014)



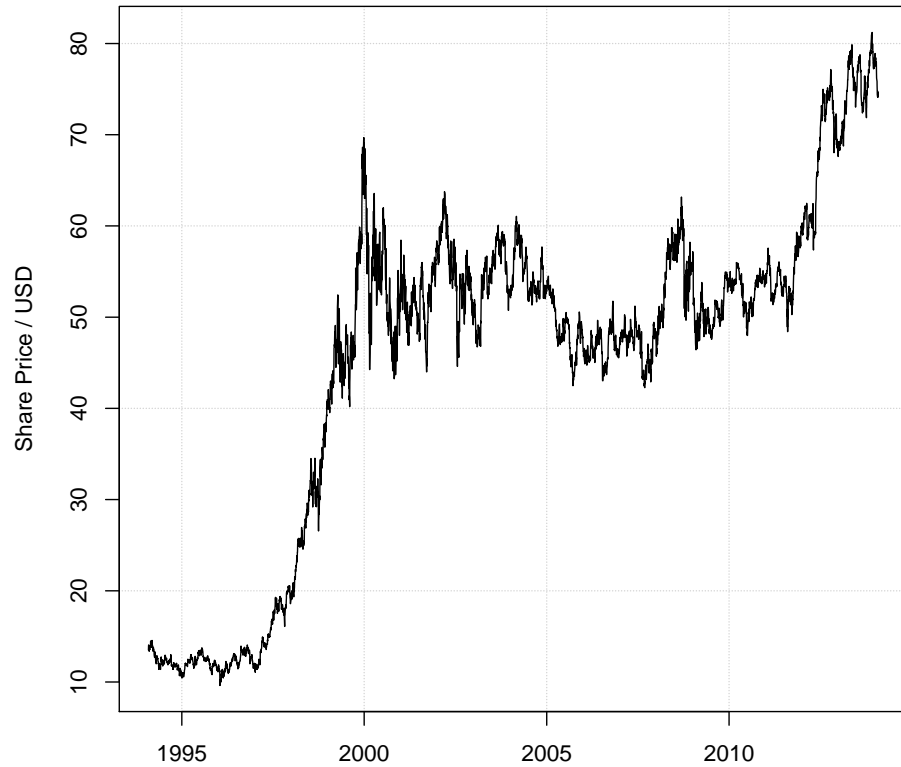
Wal-Mart (1994-2014)



P/E
Mean: 23.2
Stdev: 10.0
Min: 10.5
Max: 58.7

Wal-Mart (Earnings Yield)

Wal-Mart



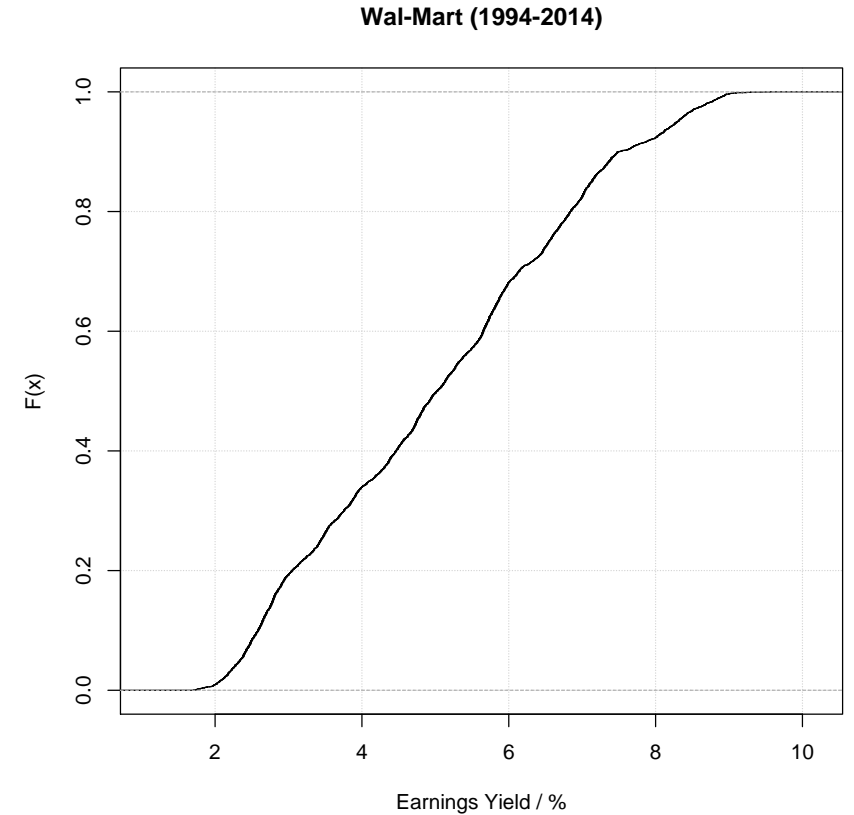
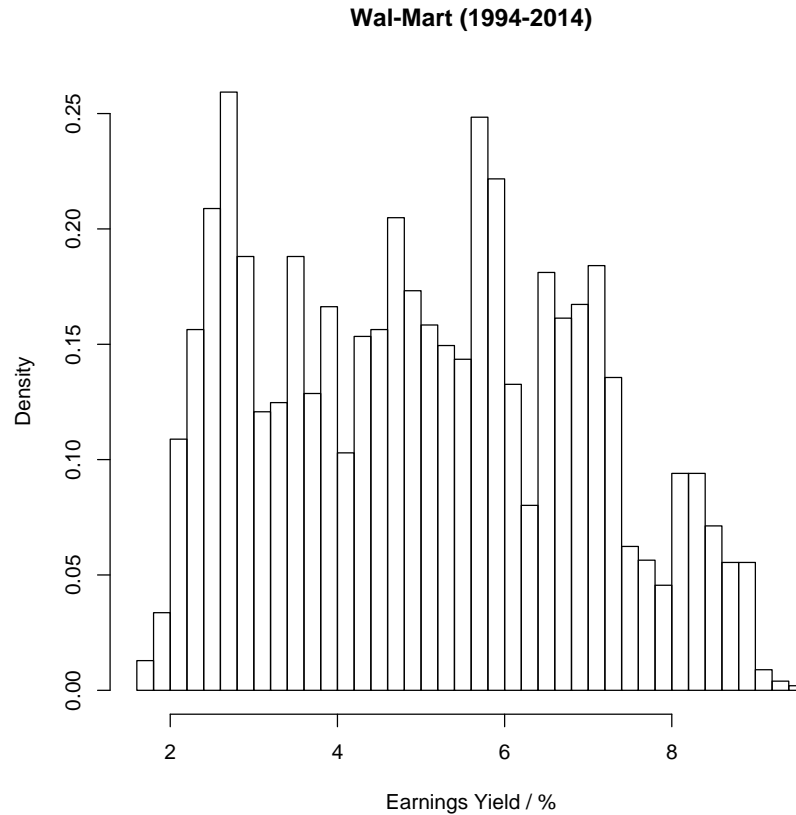
Wal-Mart (1994-2014)



Wal-Mart (Earnings Yield Statistics)

Earnings Yield

Mean: 5.1%
Stdev: 1.9%
Min: 1.7%
Max: 9.6%



Conclusion

- P/E and Earnings Yield are not constant and rarely equal their mean.
- Even stable companies have volatile P/E and Earnings Yield.
- Future P/E and Earnings Yield are not easy to predict.

Further Reading

Plots are taken from the paper:

- [Portfolio Optimization and Monte Carlo Simulation](#)

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Available on the internet:

www.Hvass-Labs.Org