Noise and Value

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Value and Noise

- Investors tend to assume that a stock price “should” be equal to its value and that if it isn’t something is wrong.
    - P = V
- There is another view that sees things differently, that “noise” is a permanent part of th market (See References)
    - P = V + N
- This explains why what many see as undervaluation persists forever; they fail to recognize the permanence of Noise.
- On the other hand, it can be worthwhile to recognize the Noise as a normal market phenomenon, and evaluate its level for a stock relative to historical trends and/or peers, and to consider factors that may cause the level of Noise to rise of shrink in the future.

Quantify an Estimate of Noise

- Deconstruct a stock's market cap (MC) into two components
  - Value based strictly on present business operation (VPO)
    - This is a very conservative bond-like valuation which assumes the income component never rises
    - We might call it a "stand-still valuation"
  - Value based on future growth prospects (FGV)
- Therefore . . .
    - MC = VPO + FGV

Calculating VPO and FGV

- VPO = NOPAT / CC
  - Where
    - NOPAT = Net Operating Profit After Tax
    - CC = Cost of Capital
- NOPAT = Operating profit * (1 – tax rate)
  - For this purpose, Operating Profit = EBIT
  - We see many abnormal tax rates in the real world
    - You can simply eliminate such stocks, or just assume all tax rates are normal; i.e. NOPAT = Oper Prof * .65
- CC, as we know, can be a pain in the neck
  - For details, see the Appendix
  - If you just want to plug in a number, that's OK
- Therefore, VPO = (OpProf *.79) / CC
- Now, FGV falls into place
  - FGV = Market Cap – VPO, or
  - FGV = Market Cap – ((OperProf *.79) /CC)

The Destination: Value and Noise

- V% = VPO / MktCap
- N% = FGV / MktCap
  - Where
    - V% is the percent of a stock's market cap attributable to Value
    - N% is the percent of a stock's market cap attributable to Noise
- A simple back-of-the-envelope formula for the percent of noise in market cap (or stock price)
- N = (Mkt Cap – ((OperProf *.79) / CC))/MktCap
  - Recall that OperProf, for this purpose, is the same as EBIT

A Bit of Cheating

- We assumed that FGV = Noise, based on an assumed "standstill valuation"
  - NOPAT/CC is analogous to a fixed income instrument, for which value is INTEREST/PREVAILING RATE
  - This computation assumes the company's income stands still, as is the case with fixed income
- In truth, we know that FGV = RG + NG + PN
  - Where
    - RG = realistic growth expectations
    - NG = noise-based growth expectations
    - PN = pure noise
- To go forward, we'll have to assume that RG is always zero
  - We'll live with that
    - Value gurus often talk about a margin of safety; here it is
  - Unlike with DDM, DCF, etc. etc. etc., we're not going to pretend to be more precise than we can actually be
  - Our estimate of Noise is likely to be a bit overstated, but as long as we understand that and refrain from getting carried away with specifics, we can live with this, and even use it for screening and analysis

Some Well Known Stocks

Ticker	Name	WACC %	Est. % of Mkt Cap	
			Noise	Value
AMZN	Amazon	7.76	95	5
ANF	Abercrombie & Fitch Co.	9.86	72	28
BBBY	Bed Bath & Beyond Inc.	9.07	-106	206
BBY	Best Buy Co Inc	9.47	32	68
CAT	Caterpillar Inc	7.24	24	76
EBAY	eBay Inc.	8.06	55	45
ED	Consolidated Edison Inc.	8.24	12	88
EMR	Emerson Electric Co.	8.85	52	48
FB	Facebook Inc	10.83	74	26
GIS	General Mills Inc.	7.53	10	90
GOOGL	Alphabet Inc	10.7	75	25
INTC	Intel Corp	9.41	45	55
KO	Coca-Cola Co (The)	7.15	52	48
MMM	3M Co	8.09	54	46
MSFT	Microsoft Corp	8.17	67	33
NKE	Nike Inc	9.52	72	28
QCOM	QUALCOMM Inc.	8.39	51	49
SBUX	Starbucks Corp	8.53	62	38
UTX	United Technologies Corp	8.42	36	64
WMT	Walmart Inc	8.96	42	58

Data from Compustat, Compuitations from Portfolio123

as of 3/25/18

- Note: It is possible for the contribution of noise to be negative, to drive the to a level that's below "standstill value"

References

Robert J. Shiller, *Stock Prices and Social Dynamics*, 1984 Brookings Institution Paper, http://www.econ.yale.edu/~shiller/pubs/p0616.pdf

Charles M.C. Lee, *Market Efficiency and Accounting Research*, 31 Journal of Accounting and Economics, 233-53 (2001)

Fischer Black, *Noise*, Papers and Proceedings of the Forty-Fourth Annual Meeting of the America Finance Association, New York, New York, December 20-30, 1985, Journal of Finance, Vol. 41, Issue 3 (July 1986), p. 529-543 at 531 (emphasis supplied) *citing* Jean-Jacques Laffont, *On Welfare Analysis of Rational Expectations Equilibria with Asymmetric Information*, Econometrics, Vol. 53 (January 1985) pp.1-29.

Appendix

Start with WACC (weighted average cost of capital): The Are Many Times When We'll Need This

- The basic formulation: Capital Asset Pricing Model
  - R = RF + B (RM-RF)
    - RF = risk free rate; 10-year treasury is as good as anything
    - RM-RF = Market Return – Risk free Return (Equity Risk Premium)
      - Nobody knows what it is; a standard 4%-5% assumption is generally acceptable
  - B = Beta; a statistical measure of the stock's volatility relative to the S&P 500
    - **DON'T EVEN THINK OF USING THIS!!!!!!!!!!!!!!!!**
      - Beta is unstable over time and bears no relation to any company characteristics
      - If you try to use it, you'll see way too many oddities including speculative stocks with very low or negative betas that produce capital costs *below* the risk-free rate

A Very Usable Spit-and-Chewing Gum Approach to WACC

- The Components
  - CD = Cost of debt = Risk free rate + 3%
  - CP = CD + 1%
  - CE = CD + 5%
- The Formula
  - WACC = (WtDebt*CD) + (WtPfd*CP) + (WtEq*CE)
- What the $%&@; that's awfully simplistic.
  - Yes it is, but "I'd rather be vaguely right than exactly wrong."
    - Carveth Read, British philosopher and logician (quote popularly but erroneously attributed to John Maynard Keynes)