INTUITION
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The Mechanics of the Market - Understanding Volatility

Duke University has an amazing tradition. Students camp for six weeks in the Autumn cool to be eligible for a lottery draw to buy a ticket to the annual Duke-North Carolina basketball game. Tents hold a maximum of twelve and must have a minimum of 4 people in them at all times, should a line monitor make a random check. Fail two random checks and your tent is ejected for another group of students. Should your name be drawn at the end you are eligible to buy a $30, $50, or $100 ticket. This group of students provided the perfect group for psychologists to test the endowment effect, a phenomenon that measures the increased value placed on something through ownership. Students surveyed who had camped the full six weeks and who had not won the opportunity to buy a ticket were prepared to cough up between $155 and $160 to attend the game, while those who did have tickets would only sell them for between $2,500 and $2,700. (Based on a research paper published by Dan Airley, behavioural psychologist).

Robin Gibson

The layman has a hard time understanding how market movements occur. To most, it is some amorphous enigma that is a complete mystery. However, like most things, breaking it down into some simplistic components and principles can be useful to foster a deeper understanding.

The first thing to understand is that the stock market is nothing more than a live auction. Historically there was the trading floor and representatives of buyers and sellers called out bids or offers for shares in chaotic scenes we may have witnessed on television. This has been replaced by electronic trading that can now occur at your desk in real-time (or from your smartphone in the dentist's waiting room!) The chaotic floor has largely been relegated to the memories of senior members of the profession.

Access to a trading screen provides sight of two columns. A list of sellers, with their asking price and the number of shares available at each price. These are ranked from the lowest price to the highest price. The other column represents a list of buyers, with their bid price and the number of shares they want. These are ranked from the highest bid price to the lowest. A sale happens when either the seller drops his price or the buyer ups his and a match is 'made'. This transaction then determines the 'Ruling Price' which now becomes the value for every single owner of

SPEED READ

- **Investors seldom realize that market price movement is determined by what investors are prepared to pay for a share today compared to what another investor was prepared to pay yesterday. The two can change very quickly.**
- **There are large groups of investors such as traders, index or ETF (exchange-traded fund) managers, or a large group of smartphone users who do very little analysis on the companies they buy. Their action is determined rather by market movement, index weight, or the latest hot tip.**
- **As the Duke experiment illustrates, you can ask whatever price you want for something you own, but the actual value will be determined by what the buyer is prepared to part with to own it, and that figure is determined by his perception of value.**
- **Professional asset managers use analysis of future earnings to determine the price they are prepared to pay for a stock. The formula they use to derive a base idea of value requires several assumptions that are subject to change at short notice, which can result in a big move in share prices.**

that share, until the next trade happens. This means a share you bought 5 years ago will have a value determined by a trade done today.

We are aware of 4 main categories of buyers on the market who can set prices:

1. Traders – these individuals have little interest in the underlying value or metrics of a company. They are driven largely by price action and will buy if the price chart crosses key lines drawn as part of a discipline known as technical analysis.
2. ETFs or Index Funds – these are buyers who replicate an index to produce a similar return to the index (based on the idea that passive investing is cheaper and that active management seldom exceeds the index return). The primary concern of these investors is to ensure that their fund replicates the index. Absolutely no fundamental research on companies is undertaken.
3. Retail investors – these investors buy shares based on their limited criteria: - a hot tip, a gut feeling, and a liking for the product but seldom from any form of analysis. This is usually done through platforms like Easy Equities or RobinHood to name two.
4. Professional asset managers – shares are bought around a well-designed investment process that evaluates the relative worth of a share and its prospects into the future.

Many don't understand that a share price never takes a languid move to a lower level. It doesn't move through every number allowing an orderly exit in the event of a crisis. What invariably happens is that bad news breaks overnight and then all the higher bids from yesterday are removed. Only a very low bid remains, sometimes 5%, 10%, or 20% below the previous level. It then only takes one seller to accept that price for the share to drop to the lower level and that then becomes the figure used by every investor who owns that share to determine their market value.

We have looked at the 4 key demographic users of the stock market, so how does a share price suddenly plummet? Well largely, professional users have done calculations on a share's intrinsic value. While a lot goes into their calculation, most professional users use some form of the following formula:

$$\textbf{Value} = \frac{\textbf{Expected next Dividend or Profit}}{\textbf{r – g}}$$

Where:
r = the cost of capital (this is determined by interest rates), and
g = the expected rate of growth of the profits/dividend. These are both expressed as percentages.

The table below gives a good indication of how a change in the assumption of either denominator metric can have a significant impact on the perceived value of a share. This is why, when events that create uncertainty occur (think 9/11, Covid, Ukraine War), all the buyers retreat and only speculators with very low bids remain. Consequently, share prices plummet. Of course, this is only until some better or different assumptions can be made and the buyers return. Do bear in mind, however, that if you can buy something for 20% below what you think it's worth you aren't going to make the higher bid immediately. You will quite happily buy it at the discount. This is why shares don't usually recover overnight.

Valuation Matrix					
Starting Dividend:			**2,500 cents**		
			r		
		6%	**7%**	**8%**	**9%**
	3%	75,000	56,250	45,000	37,500
g	4%	112,500	75,000	56,250	45,000
	5%	225,000	112,500	75,000	56,250

This table plots an estimated valuation for a company based on an expected next dividend and for a range of assumed interest rates (r) and rate of growth in the dividend (g). In this simple example, the value of this share could vary by up to R1,875 per share, depending on your assumptions around growth and interest rates.

The table illustrates why Harvard House is so insistent on an income-based philosophy since income can still be escalating when share prices are declining. Consider the table again. If I assume the base dividend of 2,250 cents and that interest rates are at 7% and I expect my dividend to grow by 5% per year going forward, then I arrive at a share value of 112,500 cents (share prices are always quoted in cents on the market). However, if I merely assume a change in interest rates to 8%, an increase of 1% (but the same expected dividend growth), my share valuation calculation adjusts to 75,000 or 33% lower. Now obviously this is a very simplistic calculation, but it demonstrates very well where volatility in the market emanates from and that the price change does not necessarily imply the end of income.

It is worth repeating: capital volatility is dependent on a lot of assumptions from those looking to buy a share. Those assumptions are driven by sentimental factors. Dividends are driven by profits, which generally are far more stable for well-run and adequately capitalized companies. Our refrain continues to echo – live on income produced, not capital change!

Our next Insight seminar will take place in June and provide an update on what has driven markets over the first six months of the year, and what might lie ahead for the balance of the year. We are very excited to be expanding our seminar program to Cape Town.

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Topic:	Mid Year Market Update
Natal Midlands	
Date:	Thursday, 22nd June 2023
Venue:	Oasis Conference Centre, 72 Main Road, Howick
Morning Time:	10am for 10.30am
Evening Time:	5.30pm for 6pm
Johannesburg	
Date:	Tuesday, 13th of June
Venue:	Rosebank Union Church, Cnr William Nichol and St Andrews Road, Hurlingham
Time:	7am for 7.30am
Cape Town	
Date:	Wednesday, 14th of June
Venue:	To Be Confirmed
Time:	To Be Confirmed

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