The Relativity of Security Prices

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02-Mar-2003

Newton's Theory of Relativity

Technical Analysis is not atomic physics. Relativity is the stuff that Sir Isaac Newton (1643 – 1727) pondered on in his brilliant lifetime as he took the world out of the Dark Ages of the Renaissance and Inquisitions into the Light Ages or reasoning without religious persecution.

Just like euphemism loaded Fairy Stories that we tell our children to 'explain easily' things that are life and death situations to give them soft mental landings, I well remember hearing the story about Isaac sitting under the apple tree and having an apple fall from the tree.

As I recall the story, it either hit him on the head or landed with a thud, and he then postulated Newtonian physics! Nice Fairy Story, but it obviously was not at all that straightforward.

Apart from Isaac being a brilliant scholar, and being admitted to the University of Cambridge[1] where the prime learning was the Bible and its surrounding teachings, but his pet like was the mechanics of windmills, alchemy, optics, and celestial dynamics.

These pet likes of Isaac led to drawing tangents onto curves and in due course he created and developed differential calculus and integral calculus. So in 1666 he was only 24 years old, but he had written three papers that astounded the then acknowledged masters. (None of these three papers were on calculus!)

When he applied this new-found branch of Calculus mathematics to mechanics, it threw open the doors to the physics that we know and use in our everyday life when playing sport, pushing a shopping trolley, lifting a child, throwing a stone and thousands of normal activities.

It was only after Isaac read "Dialogue Concerning the Two Chief World Systems" by Galileo, and that he was very aware of Kepler's work on how planets circle the sun that after some time that he came to his findings of this 'Law of Universal Gravitation'.

He was then still a young man and had a lifetime of following achievements beyond there, solving the mysteries of light physics, developing the reflective telescope, documenting the properties of a huge range of metal alloys, becoming the reference for weights and measures and extremely innovative in advancing technologies used in the Royal Mint.

So, yes! The Fairy Story of being in the apple orchid may have been a euphemism for several years study that he did before he postulated the three basic laws of relative physics, and no, the relative physics that I am talking about is not the Einstein theory of Relativity.

[1] http://www.cam.ac.uk/

The Newton Physical Laws

1. "Every body persists in it state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed on it".
2. "The acceleration of a body is directly proportional to the force applied to that body and inversely proportional to the mass of that body."
3. "To every action there is opposed and equal reaction; or, the mutual action of two bodies upon each other are always equal, and directed to contrary parts."

While these three little statements seem like everyday statements to us, it must be realised that these physical laws upturned the (Christian) religious domination of learning in Europe and set the course of our present lifestyles – all within Newtons lifetime!

Newton Relativity

Newton's laws of physics apply in our world, and we measure time in a linear fashion, as we distance, and hence velocity (speed in a specified direction).

Most people who have played any form of ball sport realize that it is common when passing a ball to somebody else, to direct that ball above the target receiver, and that the force of gravity in the time of the flight of the ball, will pull the ball down to the receivers' target area.

Most players also know to pass the ball into an open space in front of where a player will be, so that when the ball reaches the moving player, it is a simple catch. Relative to the player catching the ball, the ball is being thrown to them, and not behind them. This is all Newton physics involving relative motion and gravity.

Here is another quirk of relative motion. When as a passenger in a car being driven in the country, we can see a grain silo and well behind that we may see some trees. Relative to us, the grain silo may appear still, and the trees appear to be moving forwards behind the grain silo.

Actually we are moving forwards, and we are moving past the trees and the building at the same velocity, but because of the relative distance between us, the building and the trees, the landscape appears to move, and we see it from a very different point of view.

And now we are getting close to the Einstein theory of relativity, where mass and speed become inter-related but we are not going there – yet!

Share Price Relativity

To date we have almost always looked at share prices on a linear scale, and very occasionally on a semi-logarithmic scale. We have also always looked at share prices and considered the moving average in relation to the price.

If we were to look at share prices in relation to a moving average – such that the moving average is considered the reference and the price moves around that moving average, then we can see a very different picture! Further, if the share price is set as a ratio of the moving average price, then this ratio can be plotted on a common graph with semi-logarithmic scales.

Scared? Think about it! We now have a graph that is totally detached from share prices, and is in the same visual ratios for all stocks, so the graph axis and ordinates

remain the same for all stocks, and the visual representation is common irrespective of the physical trade prices.

I threw this picture up because we have all become comfortable using the time honoured methods, when in fact if they are looked at from another angles or points of view, some things that looked relevant before have little relevance and other aspects become highly relevant. In these views, trading and investing become one of a larger picture that all have the common goal of providing for our support as we age.

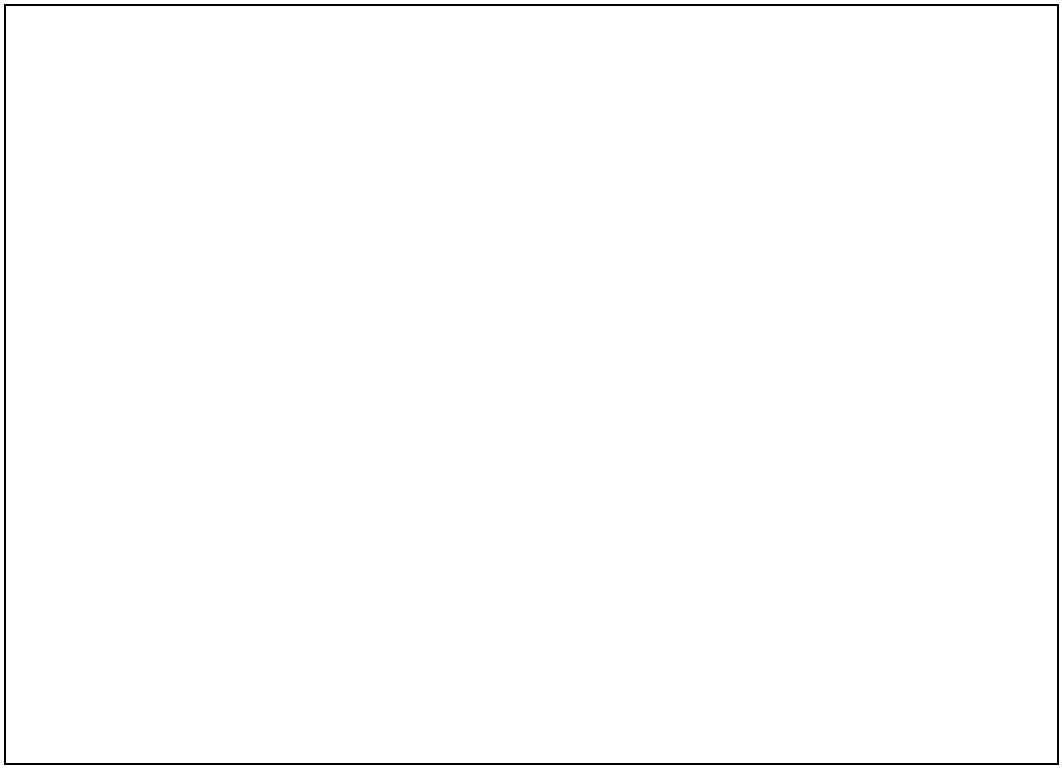
Candlesticks and Bar Graphs are interesting because they tell you the general trend of a security, and the mere fact that they show more than one price at any particular timeslot should be powerful evidence that that the sampling rate is much too slow but the visual image shows colours and that seems to be even more powerful evidence that the stock may be moving price with time!

Now here is the dilemma: The longer the candlesticks and/or their whiskers/wicks, the more obvious that the candlesticks are undersampling.

Let's face it, we are not going to get rid of a system that is visually appealing, and has been proven to be effective for some centuries, so at this stage we had better work with it and be more aware of their limitations!

Metastock

As I already had the MetaStock database[2] the transfer to using MetaStock was no big deal. This program is also a brilliant piece of engineering but for other reasons as follows: The graphing compared to OmniTrader is another generation above and there is almost nothing that you can't do with MetaStock graphs.



MetaStock also has a complete analysis sub-program inbuilt and this can be initiated by the field glasses icon. With this facility you can develop your technical Indicator

[2] http://www.equis.com/

range till the cows come home, make your own and test to your hearts content! It can also use these indicators as stock filters, and you can very easily come up with a limited range of shares to consider being in a portfolio.

Here is a screen from MetaStock (Version 7.01) and the standard screen has been significantly modified by me! For a start the prices are on a semi-logarithmic scale - so the ratios are showing more significantly than the prices, and further there are three moving averages on the candlestick chart EMA12, EMA20 and EMA109 and to me these have a little significance, but not much as it can be seen that almost any two moving averages will cross over with significant changes in values.

While the lowest display is the volume with a slow moving average on that; the two displays above that should be very interesting! The lower one is a slow MACD (Green) with a brown moving average of the MACD as the 'trigger' and the display above is a much faster MACD with a similar trigger arrangement on that. When the MACD is greater than the trigger the bar graph sticks its fingers up to say "Buy", or if you have bought then to "Hold"!

In other words this MetaStock graph shows the traits of different trading personalities, and you can visually see the historic pattern of trading. This is good learning curve.

It should be no surprise that the moving averages and the MACDs are using the same time constants (days or periods) so the correlation between these should be fairly obvious.

Try and flick through stocks and you will very quickly find out that MetaStock is not made to do that, and it is like trying to run a sprint race in mud, when the others have a race track and running sprigs!

Many people swear by this program, and I found it rather useful, but it really doesn't like having too many displays open at once!

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Comments and Corrections are welcome