Einstein in Finance

We will discuss here philosophical context of Einstein theory and see if we can learn something useful which can guide us in social studies.

Theory of relativity states that a world /Reference body can be defined by certain measures such as distance ,time ,speed etc. Further each of these measures are unique to reference body but natural law that govern these measures should not be unique to reference body. Natural law should be stated such a way that they can be tested against our experience. If they failed to predict the outcome we should reject the laws.

Newton mechanics is a limiting case of theory of relativity. It could well predict with negligible error the physical phenomenon when velocity is negligible compared to speed of light. This way we look to always move in direction of generality and special cases could be derived as limiting case from general case.

Let's talk about Finance

We could take Reference body as one particular person and attach to him a system of coordinates which measure wealth and time/frequency. Every point on this coordinate system will have a unique wealth and time Measurement. We are interested in to see rate of change of wealth with respect to time. In simple words we are seeking to see how our wealth grows over time. Suppose this man manages his wealth by trading system S which consist of rules of trading. We could now inspect if system S can be applied to any reference body. We can take every stock as a body of reference. We are therefore interested how our rules manifest when they jump from one reference to another.

These rules can be Mechanical or Manual. First we will discuss on Mechanical system.

Consider that we treat a stock as separate body of Reference. Trading this stock will alter our wealth over time. We trying to find some laws which states the relationship between wealth and time and at the same time they must be not unique to body of reference.

To test this system in laboratory we must define initial conditions and thereafter apply rules to measure the output. Unfortunately in trading and social studies we are not sure that we have always same Initial conditions. Therefore we cannot test the system in laboratory as we do in science.

But nevertheless we can test the system outside laboratory. We certainly can discover certain rules that have passed the test of time. Though these rules has to take their input as everchanging scenarios but this uncertainty has not in least daunted their value. Such one general rule is cut your losses short.

In short we learn by our experience and ancient wisdom and from certain rules and we expect them to guide us through different body of universe. Its intuitive that these rules will keep on evolving as market evolves but some rules of greatest generality might have some predictable power.

When we apply a mechanical system to one body of reference and see that it works . But same system will not give same results on same body of reference at some other time. This is because each time when we run system on script there is different economic and social conditions. It means our general trading rules are restricted by time. We can divide out trading time in three parts: up trend, sideways, downtrend. I guess we can therefore have a system that is though unique to time but not to stocks.

One such mechanical system you can see in our paper on mechanical system and its scope.

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When we say that our rules are particular to time it implies that you should have system to predict time. If we ensure that time is right we can easily assume that rules particular to this time will be applicable. Further if we have a system S which is unique to T means that T must be predictable in order to exploit its domain specific rules.

Our question now reduces to :can we predict trends?

I guess now its time to dive deep in the meaning of prediction. Problem of prediction only comes when we are not sure that for given initial conditions and input always the same output will be obtained. Further if there is small error in output then also the system is out of the domain of prediction because we know for sure the limits of our output. It means the once the general laws are discovered the problem of prediction vanishes and certainty takes the place.

Earlier we have seen that we are not able to form any natural law between wealth and time. But we learned that any such law if exist should be unique to time. Now we can assume that time is uptrend when FII INFLOWS pass a certain thresh hold limit. It means again we are trying to relate time to some uniqueness. I suggest this uniqueness can never be eliminated from social science.

How to deal with unique/individual

We have learned that we cannot have a rigid natural law which can guide us to how to behave with each unique individual/body of reference. In physical science we do not know personally electron and proton. We discover their characteristics and then we rely on them in future. It means we know them by experiment. As they are non-organic once their behaviour is determined do not change with time.

In social science we know things by our experience. Like I very well know that you are very stubborn. It does not necessarily means that you are always stubborn but nevertheless it is good representation of your behaviour. Further I can say I learn characteristics of individual or can know uniqueness when I directly interview them. Results of such interviews are consistently passed on us by ancients.

When we employ scientific rule we expect certainty but when we employ social rules we can only expect to minimise our exposure in case our guess is wrong. I know that you are stubborn but if I bet on your behaviour I must admit that I can be wrong. My guess about you could be wrong because either you have evolved or particular to this scenario your stubbornness is not unique. It again stress that I can never know all your uniqueness but I can learn more and more with time about you.

We can therefore conclude that we can have certain thumb rules which we learn by our experience and time tested wisdom. As these rules are not same as scientific law we can expect a considerable degree of variance. We therefore only care about variance that can hurt us and given that we do this all time then we are free to speculate/guess about future of individuals/stocks.

Take example from law and medicine. They are implemented in such a way that harm could be minimise. Though in modern medicine due to monopoly of large corporations we are taking medicine even when harm could be self-healed.

Back to finance

With our experience we can jot down some thumb rules that are unique to time.But make sure the your cost of going wrong is always bearable. After this discussion we should not have any doubt about how to navigate issues/markets.

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We should also consider how many thumb rules we should form in so lessen the error of prediction?. I guess this question is not framed properly. Error can only be defined when we have a fair idea about the absolute .Whatever I realise as output is an real event and it cannot be undone again. So we should not think in terns of error but think in term of harm caused by our limited knowledge about the events.

Back to you

 If I falsely guess that your stubbornness in particular scenario and instead of stubborn you are very calm, this is not error. This manifest a real event and it increase my knowledge about you. I learned something new. But if I consider it as error then it adds nothing to our knowledge

Ask the question Again?

My question then becomes how many thumb rules I should have in order to make my act of guess favourable to me? Obviously we can rely here on less is more. Because more rules we make, more we are entering into world of uniqueness. As the degree of uniqueness increase we are at increasing risk of going wrong. Uniqueness hates laws. Try to get a fair degree between general and uniqueness.

Give a thought process. When you learn by experience about unique events you form a thumb rule so as to deal with that uniqueness if it repeated. So as of this moment we have turn this uniqueness in general by making rules. We know that next time when we apply rules we would not get our desired result but a variance from it. This variance is because of uniqueness of this real event. So this is endless loop with no benefit. Instead we should be humble that we can only know uniqueness to a certain degree and addition of more rules would only make our prediction more far from reality.

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Back to Mechanical system

We were talking about how to predict time. I suggested that we can have some thumb rules to predict time and then we can hope to implement our hard rules that are unique to the particular time.