Is the Rational Investor Dead?

Behavioral Finance vs. Portfolio Theory

Discussion Paper for The Hague Executive Campus Seminar Presentation 2013

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Abstract: Is the Rational Investor Dead? Behavioral Finance vs. Portfolio Theory

Quite a heated debate has been raging in Finance Theory since the early 1990's regarding the relevance of Modern Portfolio Theory. Yet both adversaries are overlooking something very fundamental that could in fact bring them much closer. My working paper on the Market Indifference Curve (Dayala (2013) provides this missing link: it allows for the integration of what investors refer to as 'sentiment' in the efficient pricing of risk by *rational investors*.

Specifically, it demonstrates that (even) in the context of rational investors, the fair price of total risk at any time t reflects the aggregate – not absolute or unanimous! – risk aversion among investors at that time. If only anecdotic, intuitively such interpretation corresponds closely to what we observe when monitoring spread risk: the continuous consensual pricing of the risk premium by investors. When next, as Behavioral Finance proscribes, 'non-rational' behavior such as excessive optimism and excessive pessimism enters the equation, periods of substantial consensual mispricing of risk (herd behavior) may occur indeed, yet still based on the same premise: the efficient market reflects the consensus price of risk.

In sum, the rational investor is alive and kicking and in principle at any time t the market efficiently provides the fair consensual price of risk. However, irrespective of whether investors are rational or not, this fair price of risk – a time sensitive consensual phenomenon by default – should be distinguished from the (incorrect) notion of an unanimous or absolute price of risk.

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Quite a heated debate has been raging in Finance Theory since the 1990's, regarding the relevance of the now 'classic' Modern Portfolio Theory (MPT) and its assumptions of efficient markets and rational investors. Rather, proponents of Behavioral Finance advocating psychological influences and non-rational investors, have been gaining ground and clearly the recent financial crises must have proven beyond any doubt that markets are not efficient and investors not rational. Not least, wasn't it I myself (Dayala (2012)) who gave the final stab by illustrating that the pinnacle of MPT, the Capital Asset Pricing Model is fundamentally flawed even within its own exact narrow assumption set?

Still, it would be wrong to put me in the Behavioral camp by default. Let's face it, academics use simplifying assumptions to better understand reality. To subsequently conclude the simplifications (e.g. rational investors) don't stand up to reality is hardly an innovative insight, is it? Besides, while Behavioral Finance is very successful in identifying and explaining market imperfections it fails to provide an equilibrium theory for the pricing of risk itself. Not least, skeptics argue the debate can anyway not be settled, since clearly in practice not all investors, if even any one single investor, can be considered fully rational, hence mispricings in the market may be the 'fault' of incompetent investors, rather than a reflection of an invalid or irrelevant theory. It appears a stalemate ensues.

However, that is not the end of it. In my opinion both adversaries are overlooking something very fundamental that in fact could bring them much closer. First and foremost it is absolute nonsense to think that financial crises are inconsistent with MPT, with efficient markets or with rational investors for that matter. On the contrary, such events are useful reminders that higher risks require higher discount rates, exactly because the 'expected returns' are not guaranteed, they are at risk! Yet the blind spot is something else: MPT fails to incorporate what investors refer to as 'sentiment', while both adversaries fail to acknowledge that changing sentiment based on changing expectations isn't irrational per se. In fact, a core assumption of MPT is varying risk appetite among investors (read: heterogeneous utility preferences) in spite of so-called homogeneous expectations.

My working paper on the Market Indifference Curve (Dayala (2013)) provides this missing link to integrate both theories after all: a core premise of Modern Portfolio Theory is that investors utilize two parameters for their decision making process only, expected value and standard deviation. Ergo - if only to determine the fair expected return for the Market Portfolio itself - a fair price of total risk exists. Based on individual mean-variance indifference curves, supply and demand dynamics for pricing risk are then explained by investors trading relative (personal perceptions of) utilities. Subsequently, at any time t the equilibrium price of total risk is normally a (community) mean-variance indifference curve originating in the risk free rate, reflecting market implied risk-return equivalence for any amount of total risk vs. the risk free rate.

To put this in layman's terms, my working paper demonstrates that even in the context of rational investors, the fair price of risk at any time t reflects the aggregate – not absolute or unanimous! – risk aversion among investors at that time. If only anecdotic, intuitively such

interpretation corresponds closely to what we observe when monitoring spread risk: the continuous consensual pricing of the risk premium by investors. When next, as Behavioral Finance proscribes, ‘non-rational’ behavior such as excessive optimism and excessive pessimism enters the equation, periods of substantial consensual mispricing of risk may occur indeed (herd behavior), yet still based on the same premise: the efficient market reflects the consensus price of risk.

In sum, the rational investor is alive and kicking and in principle at any time t the market efficiently provides the fair consensual price of risk. However, irrespective of whether investors are rational or not, this fair price of risk – a time sensitive consensual phenomenon by default – should be distinguished from the (incorrect) notion of an unanimous or absolute price of risk.

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