Editorial

Decision making

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This editorial is about decision making. It may be thought that the investors in our world face incomplete information in utilising expected utility by not knowing all the probabilities associated with outcomes of risky assets. Indeed, there is a considerable literature involving this problem. A typical approach is to assume a true model for returns for an investor with a known utility function, but the investor can only observe returns but not states of the world in the future and needs to construct some sort of filter to take this absence of information into account.

A second version is where it is assumed that there is ambiguity about the probabilities of future events, for example, the urn problem of Ellsberg. This is resolved by an array of non-expected utility models that are broadly designated second order probability models where there is a random variable for returns and a second random variable that captures the ambiguity in probability(risk). Most of these models do not offer empirical counterparts that can be empirically estimated, although we note some recent work in which there is ambiguity over mortality risk, which, interestingly, neither assumes ambiguity aversion nor affection. Most of us, to my mind, would exhibit ambiguity affection over our life and death outcomes.

However, the question as to whether there is incomplete information hinges upon what we believe about investor's utility and what we believe about the returns of risky assets. Here we give a set of assumptions that will at least define the problem more clearly. Our investors have mean variance preferences that is supported by functional magnetic

resonance imaging studies of brain activity. Furthermore, we could assume the distribution of R is location-scale. If investors know the location-scale distribution, then ambiguity reduces to ambiguity about mean future returns and the scale of future returns

If the investor knows that returns are location-scale but not which particular family it belongs to, he needs to consider alternative non-parametric measurements for the distribution from which he may be able to recover some information about scale and reconstruct expected utility via mean variance. The old-fashioned picture that shows a spread of future returns that the client will enjoy if he invests in our product may not be entirely inappropriate.

Finally, what does this ambiguity do to the investor? There is a large body of literature that points to the same qualitative outcome. High ambiguity in risky returns coupled with high ambiguity aversion in the prospective investor leads to a zero position in the risky asset. This rather pervasive result can be seen in many facets of financial markets. As one example consider the UK government's help-to-buy mortgage guarantee. This is to induce lenders to lend mortgages by changing the pattern of returns, especially with respect to counter-party risk. Such a scheme, and our understanding of ambiguity aversion, also explain some of the success of retail products with explicit built-in options. Retail investors who bought such products would not previously have had positions in derivative markets.

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