

Proposition for the dissertation

1. The idiosyncratic jump intensity and idiosyncratic diffusive variance contribute more than their systematic counterparts to the total jump intensity and diffusive variance of the stock return. (Chapter 2)
2. The portion of the systematic risks in the individual stock returns exhibits increasing trend over the past 50 years. (Chapter 2)
3. The risk neutral distribution of the underlying asset return can be backed out using traded option prices by the maximum entropy principle. (Chapter 3)
4. When the underlying distribution is negatively skewed, or if the number of tradable options is small, the maximum entropy method performs better than Black-Scholes or model free method in extracting distribution information from option prices. (Chapter 3)
5. The delta-hedged equity option return is closely related to the variance risk premium of the underlying stock, which is negatively related to firm's leverage and volatility. (Chapter 4)
6. Equity premium represents the first-order risk premium of the underlying stock. Option return contains information of higher order risk premium, such as the variance and jump risk premium.
7. If jump risk or variance risk is priced, the delta-hedged equity option return is related to the underlying firm characteristics in a capital structure or investment-based asset pricing model.
8. Ironically, after estimating the dynamic variance and jump intensity model, we cannot tell whether a jump happened or not. What we can say is the probability that a jump happened at that time.
9. Theory helps us to understand empirical evidence better and guides us to discover new patterns.
10. "Financial markets are inefficiently efficient. They are inefficient enough that fund managers can be compensated for their costs and efficient enough that the profits after costs do not encourage additional active investing."---Lasse Pedersen
11. "Living at risk is jumping off the cliff and building your wings on the way down." - Ray Bradbury