Thesis Structure

Chapter 1 : Introduction

* Address the topic
* Commodity Market

Chapter 2 : Framework and Theorems

* Probability measure
* Risk neutral measure
* Ito’s process, Ito’s Lemma
* Martingale (Discrete, Continuous)
* No-arbitrage argument
* Filtration
* Probability space
* Wiener process
* Fokker-Planck Equation
* Feynman-Kac

Chapter 3: Modelling Commodity Future Prices

* Delivery method
* Modelling spot price
* Calibration of future prices

Chapter 4: Models Capture the Smile

* Local Volatility Models
* Stochastic Volatility Models
* Stochastic Local Volatility Models

Chapter 5: Simulating Commodity Option Price

* Parameter choices
* Simulation results

Chapter 6: Calibration of the Proposed Model with Simulation

* Parameter estimation
* Results

Chapter 7: Application to Market Data

Chapter 8: Conclusion and Future Work