

Guzman Homework Assignment Four

November 17, 2020

Assignment4 Learn products of Futures

1. assume Product 1 has no liquidation in the market and we are holding the physical power (same settlement as Product 1), how to use Product 2 3 to hedge our exposure to physical power (again, same settlement as Product 1)?

Since the product 1 has no liquidation, we can do cointegration for these three products to replicate the product 1 with a linear combination of product 2 and product 3 to achieve hedging.

2. create Excel file model with weekly rebalance of your positions (only rebalance Product 2) to try to achieve hedging. within the Excel file, use parameter to decide your rebalance and summarize the efficiency of hedging.

Assuming we have 100 MW physical power in our portfolio and we can only use product 2, I need to replicate the product 1 by linear combination of product 2. Contract size of product one is 1 MW. If we can use product 1, we are supposed to short 100 contract to hedge our price risk.

By regression on weekly rolling window to get the coefficient, we can get how much we should short for product 2 to replicate the price movement of product 1.

Calculate the PNL using product 2 to compare with the PNL using product 2.

