Instead of using those futures directly, we want to come up with a price dynamics that consistently price all the futures at the same time. It is very important, because otherwise, even it is only one commodity, buying it via different ways are different on average. Let me give you an example. Say I buy a unit natural gas from a one year future today, which means it will be delivered one year later. It is on average different from I buy it from spot price one year later. It is also different from I buy a half year future half year later. It is a very complex problem. However, if there exists a consistent spot price, the ways of buying doesn’t matter. It comes back to a one commodity case.

What will happen when there is discount? If there is discount, instead of thinking whether the price will increase or not on average, we think whether it increase faster than the bond. If it is faster, we buy. Otherwise, we sell.

I need to use some equations to show this. First, the optimal strategy should be a bang-bang strategy which means if sell, all will be sold. If buy, a full capacity of commodity will be bought. Therefore, it becomes a one dimensional problem.