Java application for hedging using futures

Programme: Computing for financial markets
Name: Shuijing Zhao
Student Number: 2212570

General Information

A hedge is an investment position intended to offset potential losses/gains that may be incurred by a companion investment. In simple language, a hedge is used to reduce any substantial losses/gains suffered by an individual or an organization.

The minimum variance hedge ratio depends on the relationship between changes in the spot price and changes in the futures price.

Design reason

By my research, hedging does't be used for most of the investors. Because hedging need many conditions.

Use conditions:

1. Collect the past data to calculate the market volatility
2. Simultaneity concerns spot market and futures market
3. Calculate correlation between spot market and futures market by the past data.

For most of the investors, they are not able to cope with these conditons. If the software can collect and calculate to replace manual process, the investment will be efficient and profitable.

Software function

1.Management function:edit, add, search,delete,store,print

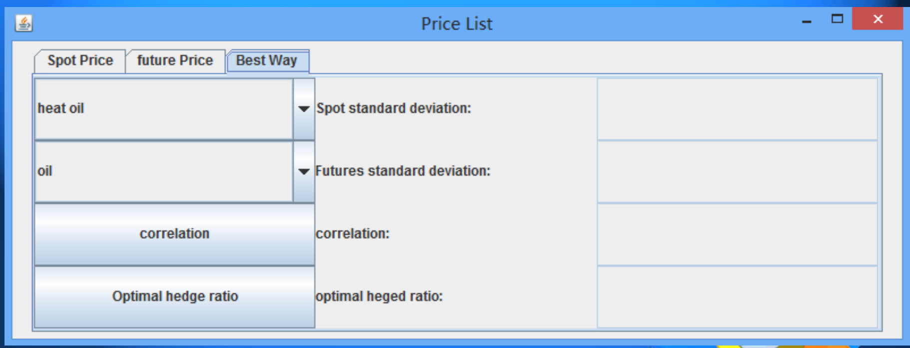
Price List

Spot Price | future Price | Best Way

Delete	Store	Modify	unmodify	add	print	heat oil
Stock Number:	1	Jan:	0.021	Feb:	0.035	Mar:
-0.046	Apr:	0.001	May:	0.044	June:	-0.029
July:	0.048	Aug:	-0.006	Sept:	-0.036	Oct:
-0.011	Nov:	0.019	Dec:	-0.027		

Software function

2. Calculate function: calculate standard deviation, correlation, optimanl hedge ration



counting process

- 1.In bestway panel, using combox to select different stocks or futures. Then the software will calculate the standard deviation of stock or futures. The clients will know the votility of these stock and choose approciate stock.
- 2.When clients make a decision to investment a stock. Choose another kind of asset. Click correlation and optimal hedge ratio. Correlation shows the relationship between the stock and the futures. Optimal hedge ratio tells clients the rates between stock and futures.

Test

- Choose the example from "Option,Futures, And Other Derivatives" p59 example 3.3
- Input the data and calculate it.
- Output is the same.

Advantages/Disadvantages

- Advantages:
- 1.Multifile are conducted as the same time.
- 2.replace excel and financial calculator
- 3.easy to use and make an appreciate choice.

Disadvantages:

1.need to update data every months.

2.Software interface layout need improvement.

Conclusion

- To sum up, this software can solve most hedging problems. Clients can reduce risk and keep profit. This software also can be treated as a investment guide. Client can manage stock and futures information and make investment to be as close to perfect as possible.

- Thank you!