Citibank Case Study

Lue Shen, Qing Zeng, Jihua Lu, Jiawei Song
Aug 16th, 2017, Wed

Contents

- Introduction
- Disadvantages
- Advantages
- Summary
- What happened in reality?
- CDS Pricing Model

Introduction

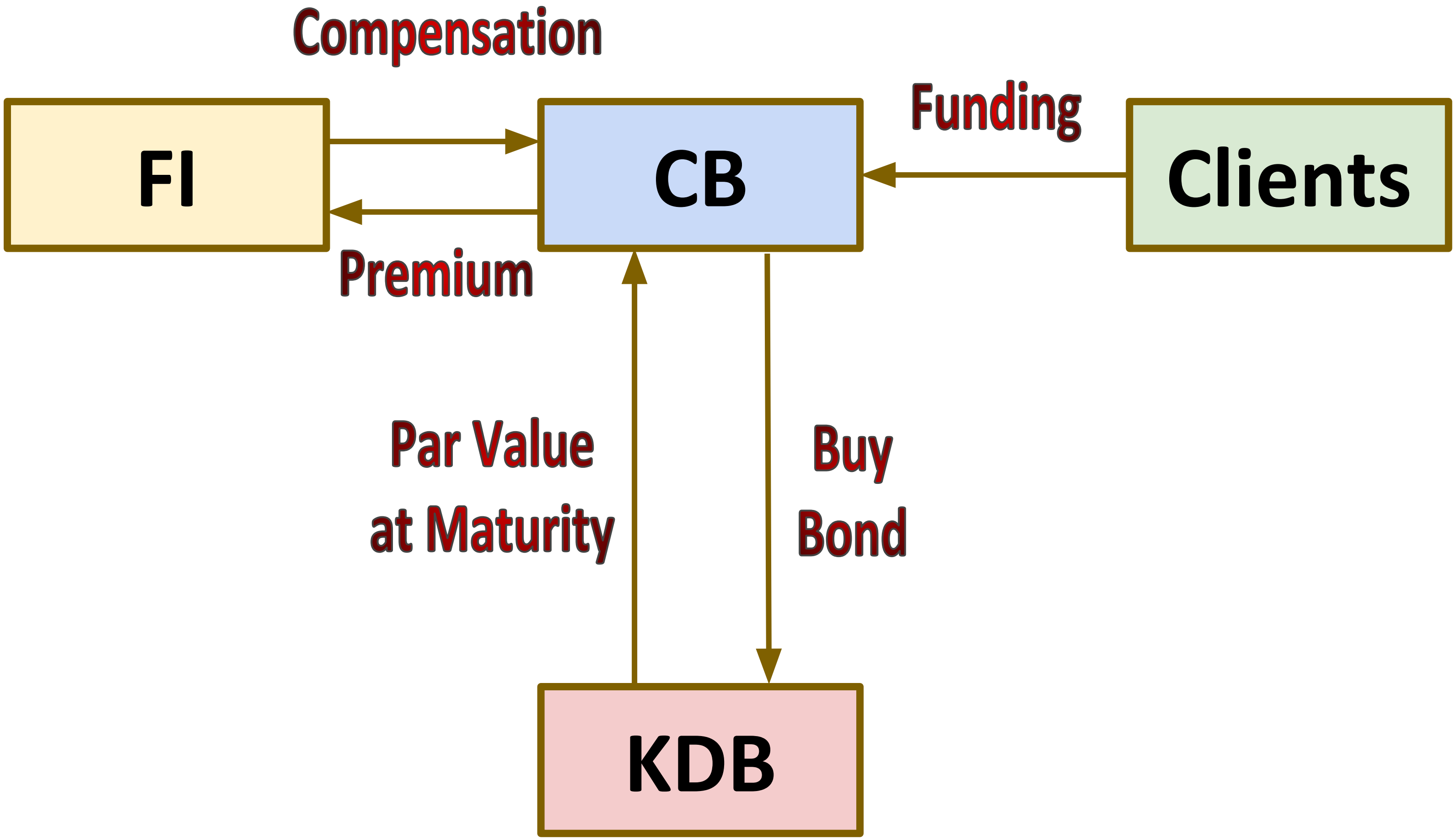
Information:

- Participates: Financial Institution (FI), Citibank HK (CB), Korean Development Bank (KDB), Clients of Citibank HK (Clients)
- FI funding cost: T+40bps
- CB funding cost: T+5bps
- KDB yield: T+60bps
- Derivative: Credit Default Swap (CDS)

For FI, there are two ways to invest:

1. Invest directly in KDB, 20bps pick-up, insufficient in ROE basis
2. Issue CDS with CB, make profit by premiums from CB

Introduction



Introduction

Credit Derivative Unit in Citibank HK provides risk analysis……

As an executive, what should we do in this case, act or not?

Disadvantages

1. There are potential risks that will cause loss in this transaction.
    a. FI may refuse to pay par value if the bond defaults.
    b. KDB fails to pay par value at maturity.
    c. Risk free rate & credit spread will fluctuate in the future.

Disadvantages

2. Many potential challenges need to be handled appropriately
    a. No clear model available to value this transaction.
    b. No proper guidelines for the risk management.
    c. Educating their back-up staff is tough and may cost a lot.
    d. Meet the required ROE and make sure capital was placed against the transaction in the event of losses from it.
    e. ……

Advantages

1. In 1998, CDS market is an emerging market with many potential profitable opportunities (First-mover advantages)

2. Citibank provides its clients an off-balance sheet instrument which would make for “capital arbitrage”.

3. The price spread of T+60bps and T+5bps creates a big enough revenue to meet the required rate-of-return on equity with the guarantee of insurance.

Summary: (1) Risk is an opportunity

Pros	Risk (Opportunity)	Cons
First-mover advantages	CDS market is an emerging market	No clear model available to value this transaction. No proper guidelines for the risk management.
An off-balance sheet instrument which would make for "capital arbitrage"	High risk and high income	FI may refuse to pay par value if the bond defaults. KDB fails to pay par value at maturity. ……

Summary: (2) Appropriate participation

- Comprehensive operation of banking divisions must establish an effective risk isolation.
- The merge and expansion of commercial banks must be compatible with the ability of management and control.
- Reasonable control of derivative positions based on macroeconomic conditions: when macroeconomic overheating, they need to reduce derivative positions appropriately. On the other hand, in a smooth economic environment, they can increase derivative positions.

What happened in reality?

- Suffering at nearly **$18 billion of subprime mortgage related assets**, Citigroup met the loss of more than $20 billion in 2008. which was the biggest loss throughout history.

- In November 24th, 2008, the U.S. government, the Federal Reserve and the U.S. Federal Insurance Co. issued a joint statement to implement a package of bailout for Citigroup once again, which was on the brink of bankruptcy.

- Finally, they reached a new round of aid programs, transferring 40% shares of Citigroup to U.S. government, to receive new government funding,

References

- White, R. (2013). The Pricing and Risk Management of Credit Default Swaps, with a Focus on the ISDA Model. *OpenGamma Quantitative Research*.