

## **Derivatives Market In China**

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## **Abstract**

*The liberalization of the Chinese planned economy to a market economy has been cautious (Lin, 2012; Chow 2011). The risk management objective for the transition has been proceduralized in the form of regulation (Black 2000). China need financial reform and regulation for derivatives (World Bank, 2012) but the risk of derivatives is real. The objective of permitting financial institutions to engage in derivatives is for risk management and not speculation. This discussion paper gives a brief overview of the short history of derivatives in China, the present derivatives available and discusses the pros and cons of derivatives. The conclusion is China need derivatives but it has to be firmly regulated.*

**Keywords:** Derivatives, China, Risk Management, Price Discovery, Regulation

## **I. INTRODUCTION**

Derivatives play an important role for managing systematic risk<sup>1</sup> in the market place. Developed economies have utilized commodity futures for more than a hundred years to transfer the price-change risk (basis risk) to parties who are willing to bear these risks for a fee (Swan, 2000). What are derivatives?

“A derivative is a financial instrument whose value is based on one or more underlying assets. In practice, it is a contract between two parties that specifies conditions (especially the dates, resulting values of the underlying variables, and notional amounts) under which payments are to be made between the parties (Rubinstein, 1999; Hull, 2006)”.

Examples of derivatives are: forwards, futures, options, and swaps which are financial instruments meaning they are contracts to trade on the underlying assets and the common underlying assets include: commodities, stocks, bonds, interest rates and currencies.

Even though derivatives have come under criticism from various market participants, the financial instruments are beneficial and important to the functioning of the financial system (Livingston, 2012). The derivatives market has seen the highest growth of all financial market segments in recent years. It has become a central contributor to the stability of the financial system and an important factor in the functioning of the real economy.

According to Dr. Paul Wilmott, an internationally renowned as a leading expert on quantitative finance, the world derivatives market is worth \$1.2 quadrillion worldwide which about 20 times the world combined GDP.

While derivative main purpose is for risk management mainly through hedging, it can also be used for speculation. One of the great advantages that derivatives provide is leverage. You can control a large holding in an asset for a small amount of money. Since you participate in the gain from the price movement of the underlying asset for a fraction of the cost of the asset, you can significantly increase your rate of return. In contrast you also incurred huge amount of risk so while you magnify the profits, you also magnify the losses.

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<sup>1</sup> The risks inherent to the entire market or entire market segment which is also known as "un-diversifiable risk" or "market risk." (Investopedia)

Since China introduced its financial reform in 1980's, spot and futures markets have been developed alongside its financial market. By 1992 China's securities market offers seven types of financial instruments: A shares, B shares, Treasury bonds, Treasury bond repurchases, corporate bonds, convertible bonds and securities investment funds. Initially the two stock exchanges traded bond futures in very high volumes. Unfortunately, risk management procedures were not very adequate – margins were as little as one per cent of contract price in early 1995. One of largest securities firms incurred huge losses when its short-selling strategy went disastrously wrong, to the point of threatening the stability of the entire financial system. Shortly thereafter, the government shut down the bond futures markets and scaled back trading in commodity futures. No financial derivatives have been permitted until lately, with the financial reform some derivative had been allowed to trade again.

China like the rest of the world faces a great dilemma. Derivatives are generally good risk management tools because they are flexible and can easily be engineered to suit the required specific need of any company. Risk in this case generally refers to the possibility that an investment's actual return will not be as expected. Derivative instruments can provide global diversification in financial instruments and currencies, help hedge against inflation and deflation, and generate returns that are not correlated with more traditional investments. The two most widely recognized benefits attributed to derivative instruments are price discovery and risk management. Besides that derivatives also improve market efficiency for the underlying asset and help reduce transaction costs.

For example a company can use swaps<sup>2</sup> to reduce risk by matching its assets and liabilities. For instance, a company with short-term liabilities linked to changing interest rates but long term fixed rate assets could use interest rate swaps to achieve a better matched position. Another example of the use of derivatives is when companies are often faced with the decision to source for funds to boost their operational capacity. In most cases that money has to come from debt, thus it is imperative that the debt stays lucrative to investors while remaining cheap to service for the company. Swaps are able to allow this to happen as they enable a company to borrow in the form that offers the lowest financial cost to them by swapping a whole stream of cash flows.

The problem with derivatives trading is in the difficulty of regulating it. Since most derivatives contracts are over the counter's (OTC), which are a private contract between two parties, the size and nature of risk is unknown until it is too late as witness during the 2008 financial crisis. The huge leverage it provides also is a temptation for investors to use it for speculation instead of genuine need for hedging.

The recent bankruptcy filing by MF Global Holdings Ltd served as another reminder of the huge risks that financial derivatives pose to institutional investors, broker-dealers, and global financial markets. Derivatives used for speculative purposes can be disastrous for a firm's balance sheet and liquidity, as was the case with Long-Term Capital Management (LTCM) LP in 1998, American International Group Inc. in 2008, and MF Global in 2011.

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<sup>2</sup> A swap is an agreement to exchange one stream of cash flows with another according to a formula agreed upon. Currency swaps can prove to be of use to exporting firms since they allow an exchange of a series of payments in one currency for a series of payments in another

The purpose of this paper is to investigate and discuss on the development of derivatives in China at this time. What kind of regulation can be implemented to ensure market soundness? The role derivative could contribute to the Chinese financial system and yet the danger of allowing derivatives trading is real.

## **II. COST-BENEFIT ANALYSIS OF DERIVATIVES**

The benefits of derivatives are risk management, price discovery and enhancement of liquidity. On the other hand the problem associated with derivatives trading is the lack of transparency within the system, a potential lack of liquidity if they wish to liquidate their position and counterparty risk.

## **III. TYPES OF DERIVATIVES**

### *A. Exchanged traded derivatives*

Exchanged traded derivatives are standardized (or quasi standardized) instruments that are marked to market where clearing and settlement is done by a clearing corporation. Though over the years there were some hic ups mainly due to attempts to corner the market, the exchanges managed to deal with them and improve the system. By and large, this arrangement has operated smoothly since the inception of derivatives trading (1848), no clearing corporation ever went bankrupt. Nowadays, clearing corporations are large and some clear for several exchanges (Acharia and Richardson , 2009).

### *B. Over-the-counter (OTC)*

Over-the-counter (OTC) derivatives are private contracts made between counterparties. They circumvent clearinghouse collateral and margin requirements—or may be negotiated and incorporated into contract terms. OTC derivatives can be tailored in agreement between both parties so long as the requirements of a binding contract under the Uniform Commercial Code are met, and provide greater flexibility, and risk, than exchange-traded derivatives. Three examples of OTC derivatives are interest rate swaps, forward contracts, and repurchase (repo) agreements.

### *C. The Problem*

Nearly 80% of derivatives are traded over the counter. The advantage of OTC contracts is that they are tailor made which are important to entities who want to be perfectly hedged. That is, they can trade a big size without having a market impact, and they can have full anonymity. Unfortunately, this feature also describes the main problems, namely that these parties face (i) a potential lack of liquidity if they wish to liquidate their position, and (ii) counterparty risk.

The lack of transparency within the system means unlike exchange traded derivatives where there is a central clearing house, no one knows precisely what the total exposure is, where it is concentrated, what are the values of such contracts? When the amount is small the risk is containable however, when the sizes become large, and combined commitments are many times larger than the underlying, the lack of transparency makes the system prone to a systemic failure.

For example was the collapse of LTCM. LTCM had derivative positions with a notional outstanding value of over \$1.25 trillion including swaps, futures and options. In contrast, only six banks had derivative positions greater than \$1 trillion. And, in the current crisis, who could have known that AIG had written \$400 billion worth of CDSs on AAA-tranched CDOs of

mortgages, loans and bonds?

#### **IV. THE RISK OF DERIVATIVES IN CHINA**

Prior to 2001, China banks had accumulated large amounts of non-performing loans, due to the lack of competition in the socialist market, plus the fact that no adequate securities or collaterals had been taken. More importantly, it was attributed to the socialist structure that those banks were de facto policy banks giving out loans to the local government and state-owned companies without worrying about the counterparty credit risk because the central government would be responsible for the nonperforming loans, not directly to those borrowers but to the state-owned banks.

In this transitional period, China has already experienced this credit issue twice. Hence lending without adequate securities over the loan was not a major concern to banks. The availability of the derivatives means that sooner or later, banks would not have to worry about credit risks of the borrowers because financial institutions could hedge the credit risk of borrowers by entering derivatives transactions with other financial entities, as well as repackaging the credit risk into debenture offerings, through securitization, to the market.

History will repeat itself and irresponsible lending behavior will return, such as inadequate security or collaterals and due diligence. The value of the repackaged debenture will not have been properly represented to the investors at large. This tendency leads to a vicious circle. The regulation of risk management may turn out to have exactly the opposite effect.

The danger of being out of control is real in China, especially in provinces that are away from Beijing and the central government. As it is now, China accounting has been very chaotic and plagued with secrecy. Add that to the lack of transparency of derivative trading through OTC and the temptation of making fast and large amounts of money through speculation; it would be simply a formula for disaster.

#### **V. FINANCIAL DERIVATIVES MARKET IN CHINA**

Although derivatives especially commodity derivatives had existed before the formation of new China in 1950's, the modern form of derivative has been a very new product in China. The very first swap on RMB based on the pilot scheme started in 2009. Currently there are several RMB denominated derivative types in use in China.

##### *A. Commodity-based financial derivatives*

Commodity futures are the oldest form of derivative. The first commodities futures market in China, the China Zhengzhou Grain Wholesale Market, opened on 12 October 1990. Subsequently, the Shanghai Futures Exchange and Dalian Commodity Exchange have also started operations.



*Figure 1*

### *B. Exchange rate derivatives*

Because of China's growing contribution to the global economy, the RMB exchange rate has attracted an increasing amount of attention worldwide. Meanwhile, demand for derivatives, especially those related to risk management, has increased steadily from financial institutions and even from non-financial companies and individual investors.

#### *i. RMB forwards*

In 1994, the China Foreign Exchange Trade System introduced a spot foreign exchange trading system for financial institutions. Preparatory studies for RMB forward transactions started one year later and, in January 1997, the People's Bank of China (PBC) formally established its "Interim Management Rules for RMB Forward Exchange Settlement and Sales" as a framework for the development of this business. In April 1997, the Bank of China started its RMB forward exchange settlement and sales business, as the first bank authorized to do so, marking an important milestone in the development of the Chinese derivatives market.

#### *ii. RMB foreign exchange swaps*

RMB exchange swap transactions were introduced in April 2006. The National Import and Export Bank of China and the Bank of China were the first to execute a deal in the nascent Chinese interbank foreign exchange market.

#### *iii. RMB futures*

In August 2006, the Chicago Mercantile Exchange (CME) launched futures and option contracts on the CNY against the US dollar, euro and Japanese yen. This brought into being the first RMB derivative market outside China.

#### *iv. RMB non-deliverable forwards and options*

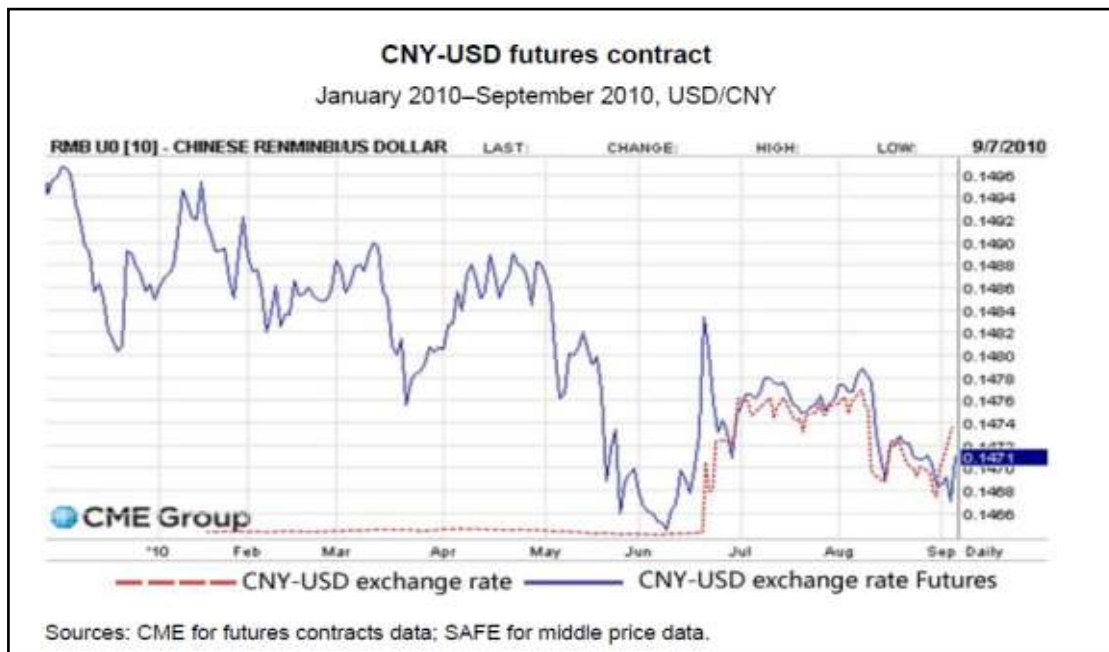
The two most commonly used OTC and off-shore exchange rate derivatives are non-deliverable forwards (NDF) and options (NDO).

### *C. Interest rate derivatives*

RMB interest rate derivatives can help financial institutions to smooth out fluctuations in these key economic indicators.

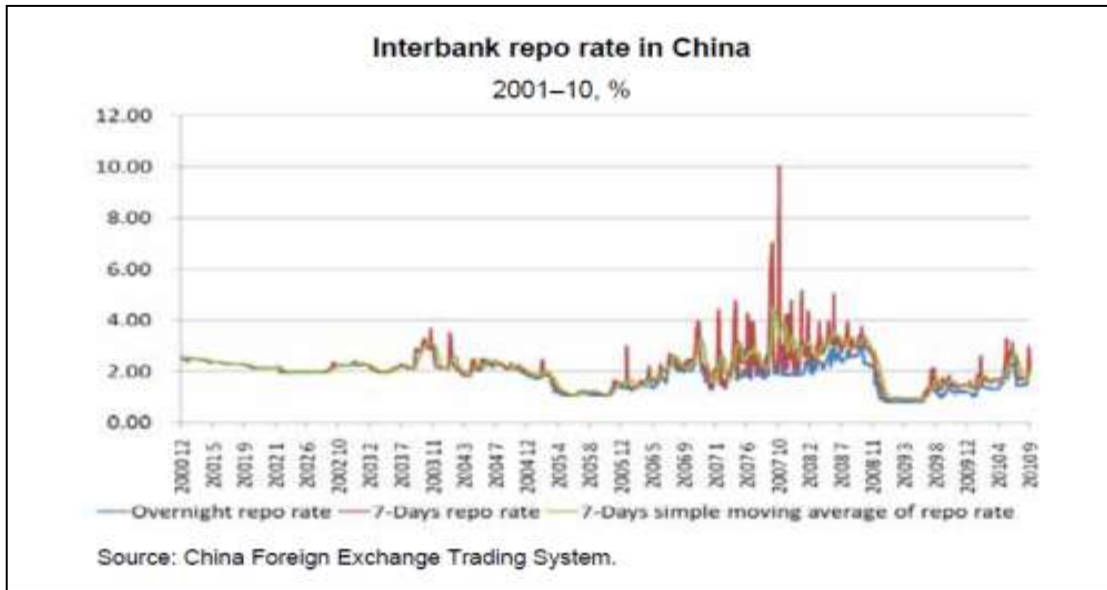
#### *i. RMB bond futures*

A pilot scheme for government bond futures was introduced in December 1992 but was later suspended. Futures trading restarted in June 2005 in the interbank lending market.



*Figure 2*





*Figure 3*

*ii. RMB interest rate swaps*

In February 2006, the PBC announced a pilot scheme for RMB interest rate swap transactions, which greatly promoted the development of this instrument in China.

*iii. RMB exchange rate swaps*

In August 2007, the PBC announced guidelines for foreign exchange swaps, which opened the way for the Chinese Yuan to be swapped against the US dollar, the euro, the Japanese yen, the Hong Kong dollar and sterling in the Chinese interbank foreign exchange market. Such exchange rate swaps are widely used in the interbank market.

*iv. RMB forward rate agreements*

In October 2007, the PBC further authorized SHIBOR-based RMB forward rate agreements.

*D. Equity derivatives*

In February 2010, the China Securities Regulatory Commission officially approved the HuShen300 stock index futures contracts and business rules on the China Financial Futures Exchange, and HuShen300 stock index futures contracts were first traded on 16 April.



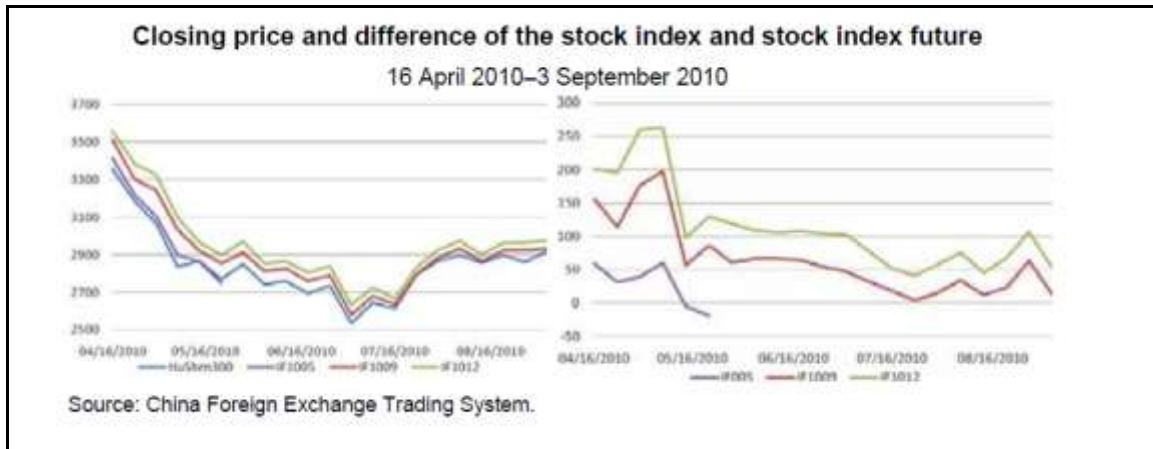


Figure 4

## VI. ISSUES FACING DERIVATIVES IN CHINA

The China company law at the moment is unable to categorize credit risk (Hsiao, 2012). In finance, a credit derivative refers to any one of "various instruments and techniques designed to separate and then transfer the credit risk" of the underlying loan (Richard &, Rama, 2006). It is a securitized derivative whereby the credit risk is transferred to an entity other than the lender (Satyajit, 2005).

It has inherent risk, being categorized as an insurance contract but China law do not encouraged speculation which is under gambling. Since a credit derivative and most derivatives can be used for both how do the regulators draw the line between illegal and permissible?

## VII. CONCLUSION

Cautionary use of derivatives is necessary for the Chinese financial market as suggested by (World Bank, 2012) on the need for China financial reform. Criticism and fears regarding the lack of regulation and the amount of risk taken by users of derivatives throughout the world is real and there is a need to study it carefully before full embrace of derivatives can be encouraged. The reform of China's financial system has been gradual and cautious (Chow, 2011; Lin 2012) and therefore the development of derivative market in China will also be in the same manner.

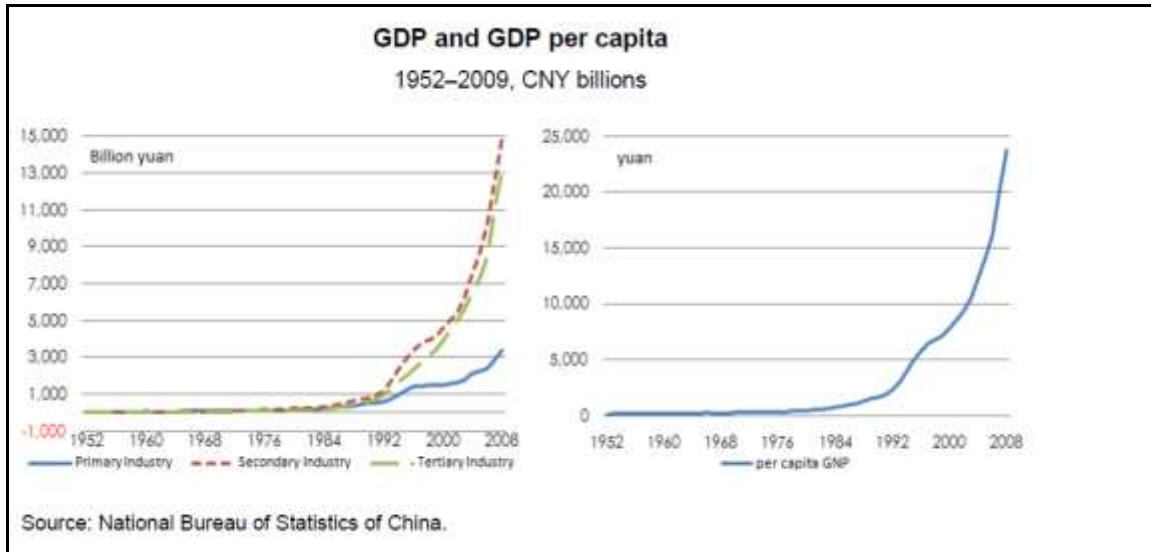
In summary the danger of derivatives are: 1. Derivative transactions are complicated, 2. High leverage encourages excessive speculation and 3. There is a lack of transparency especially in OTC derivatives.

In conclusion derivatives are inevitable, and will certainly see much greater development in the future. China has made great improvement in its corporate law pertaining to derivatives

trading (Clarke & Dawson, 2011).

Despite of the need for more disclosure, derivatives have been widely used in China in line with the reforms. New products and application are introduced but at a slow and steady pace surely not at the speed it has taken off as in the USA.

## VIII. TABLES AND FIGURES



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