

# Research of derivatives markets development of China

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**Abstract-** The derivatives markets have been interested widely. After the financial crisis, the topics about derivatives markets have been discussed warmly. Chinese derivatives markets developed late, there is a big gap between it and developed derivatives markets. The paper analyzed the situations of foreign and Chinese derivatives markets, investigated the problems of Chinese derivatives markets and provided relevant recommendations.

**Keywords-** China; derivatives markets; development; research

## 1. Introduction

Rapid development of the derivatives market before the financial crisis in a relaxed environment, the derivatives market in 2007 reached its highest level contract notional principal amount of outstanding, according to the statistics of the Bank for International Settlements (BIS) in 2007 venue derivatives market futures class contracts outstanding notional principal amount of \$ 28.051 trillion, including the top three interest rate futures varieties are classes, currency classes and stock index class.

Over-the-counter derivatives market scale than the Exchange derivatives market, according to the BIS statistics 2011 global OTC derivatives notional outstanding totaled \$ 707, 568, 900, 000, 000, over the same period the venue derivatives notional outstanding total (\$ 54, 511, 200, 000, 000) 13 times.

China's derivatives market is still in an early stage of development, in the context of economic globalization,

China must vigorously develop and perfect the derivatives markets, draw on the the foreign derivatives market development experience to help promote the development of China's derivatives market.

## 2. Derivatives market development in China

### 2.1. Initial stage

In 1980s, the futures market of the late country with relevant departments to study abroad, and actively preparing for China's futures market. October 12, 1990 approved by the State Council, China Zhengzhou Grain Wholesale Market introduction of futures trading mechanisms based spot trading, marking the formal establishment of a commodity futures market. The lack of unified management, established around 1993, futures trading over 50. Because of the lack of adequate understanding of the futures market, as well as regulatory lag varieties repeated, illegal trading, market

manipulation and other issues, China's futures market in disarray.

## 2.2. Regulation stage

The State Council in 1993 on the futures market twice rectification from more than 50 transactions after the rectification reduced to three, respectively, the Shanghai Futures Exchange, Dalian Commodity Exchange and the Zhengzhou Commodity Exchange, the abolition of foreign exchange futures stock warrants, bond futures and index futures, futures varieties from 35 down to 12. Handling violations, standardize market operations to clean up the futures brokerage firm, strengthen supervision and improve the regulations.

## 2.3. Development stage

December 29, 2000, the China Futures Association was established, marking the Chinese futures market, industry self-regulatory organization to establish. March 2001 steadily develop the futures market "write" the Tenth Five-Year Plan "signs to straighten out the end of China's futures market. Since then, a series of regulations have been put forward to regulate the futures market. In 2002, the China Securities Regulatory Commission issued a new "futures practitioners management approach", "futures brokerage firm senior management qualifications management approach Futures Exchange Management Measures", "futures brokerage firm management approach for the development of the futures market has laid foundation. In January 2004, the State Council promulgated the "State Council on promoting the reform and opening up of the capital markets and stable development of a number of opinions" systematic plan for the development of China's futures market. In February 2007, the State Council amended the relevant provisions of the Exchange Management Regulations "to further improve the futures trading. Enter the specification stage of development as the futures market, futures trading volume and transaction volume growing steadily onto the market, some of the new varieties of futures.

## 3. Development status of Chinese derivatives market

### 3.1. Exchange and venue derivatives trading varieties

The existing 4 Derivatives Exchange, the Shanghai Futures Exchange, Zhengzhou Commodity Exchange, Dalian Commodity Exchange and China Financial Futures Exchange, of which the first three engaged in commodity futures trading, the last one in stock index futures. So far China has not the options market, the venue 28 derivatives trading varieties are futures products (27 commodities futures and financial futures) including: 14 kinds of agricultural futures, precious metals futures, six kinds of other financial futures two kinds of energy futures, four kinds of chemical products futures and financial futures. Shanghai Futures Exchange, Zhengzhou Commodity Exchange and the Dalian Commodity Exchange were nine trading products, China Financial Futures Exchange trading CSI 300 stock index. According to the U.S. Futures Industry Association ranked according to the number of trading contracts global derivatives exchange in 2011, the Zhengzhou Commodity Exchange 406, 390, 664 contract row 11, the Shanghai Futures So 308, 239, 140 contracts row 14, the Dalian Commodity Exchange 289, 047, 000 contracts row 15.

### 3.2. Derivatives trading conditions in Exchange

China lacks the options market, the venue of the derivatives market is the futures market, and led to commodity futures. Chinese futures market entry after 2000 specification development period, increasing trading volume and transaction volume. 1999 National Futures market total annual trading volume of 73,970,300 hand, total annual transaction volume 2.234144 trillion yuan, from 2001 to 2006, China's futures market showing a balance of growth, trading volume and transaction volume is relatively small fluctuations, mainly One reason is that the Chinese futures market trading varieties of this period is relatively small, the three futures exchanges in 2006 only 14 exchange-traded varieties are the Shanghai Futures Exchange copper, aluminum, natural rubber, fuel oil, Zhengzhou Commodity Exchange on the 1st of cotton, wheat, common wheat and sugar and PTA new year, the

Dalian Commodity Exchange soybean, No. 2 soybean, corn, soybean meal, and then the new soybean oil in 2006, the National Futures market total annual trading volume of 449, 474, 102 hand, total annual transaction volume 21.004632 trillion yuan. The futures market in 2007 total annual trading volume of 728,426,794 hand, year-on-year growth of 62.06%, total annual transaction volume 40.972243 trillion yuan, an increase of 95.06 percent year-on-year, the Shanghai Futures Exchange launched a new trading varieties of zinc, the Zhengzhou Commodity Exchange PTA full 9921650 hand Nianjiaoyiliang year-on-year increase of 2866.65% annual transaction volume of 387.159 billion yuan, an increase of 2484.68%. 2008 Shanghai Futures new gold futures, the Dalian Commodity Exchange's futures LLDPE annual cumulative trading volume of 26,505,964 hand, an increase of 3370.86%, total annual transaction volume of 1.194174 trillion yuan, an increase of 2287.06%, another listed varieties of palm oil total annual trading volume of 12,604,956 hand, an increase of 1758.18% total annual transaction volume of 866.412 billion yuan, an increase of 1363.04%. In 2009, the Shanghai Futures Exchange added two new varieties of rebar and wire rod, launched early indica rice futures in Zhengzhou Commodity Exchange, Dalian Commodity Exchange to launch PVC futures. Chinese derivatives market in 2010 a landmark event in April of that year, the China Financial Futures Exchange launched the Shanghai and Shenzhen 300 stock index futures, this is the first time straighten out the end of the last century the Chinese futures market to canceled Treasury futures and other financial futures traded financial futures varieties, declared the Chinese futures market is only the end of the era of commodity futures. Listed on the Shanghai and Shenzhen 300 stock index futures for two years to market transactions steady growth, according to the statistics of the China Futures Association, the China Financial Futures Exchange, the Shanghai and Shenzhen 300 stock index futures 2010 annual accumulative total the unilateral trading volume 45,873,295 hand, the annual total unilateral 41.069877 trillion yuan transaction volume in 2011 were 50,411,860 hand (up 9.89%) and 43.765855 trillion yuan (up 6.56%), 2012 3 months cumulative the unilateral trading volume 20,477,024 hand, an increase of 73.69% cumulative single the side transactions of \$ 15.583709 trillion yuan, a year-on-year

growth of 38.72%. Some empirical studies also show that the positive role of the Shanghai and Shenzhen 300 stock index futures to stabilize the stock market. Chinese futures market volatility in 2010 listed species is the Zhengzhou Commodity Exchange, early indica rice, 2010, total annual trading volume of 53,704,480 hand, an increase of 1276.98%, total annual transaction volume of 1.266275 trillion yuan, an increase of 1457.59% one of the main concerns of early rice production cuts in southwest China in the spring of 2010, a severe drought market. 2011 there are three new futures varieties listed transaction that the Shanghai Futures Exchange launched the lead futures launch of methanol futures in Zhengzhou Commodity Exchange, Dalian Commodity Exchange to launch coke futures. 2011 Chinese futures market total annual trading volume of 1,054,088,664 hand, down 32.72%, total annual transaction volume 137513425000000 yuan, down 11.03%. 2012 first three months of the National Futures market cumulative trading volume of 198,981,246 hand, cumulative transaction volume 31707682000000 yuan.

### 3.3. OTC derivatives trading position

China's over-the-counter derivatives market is mainly in the inter-bank market, the OTC derivatives financial derivatives, foreign exchange and interest rate. The inter-bank market transactions through the trading platform of the China Foreign Exchange Trading Center & National Interbank Funding Center. According to the China Foreign Exchange Trading Center statistics to members of the inter-bank market by the end of 2011 the composition of the foreign exchange market, with a membership of 318, including 207 commercial banks, three policy banks, 81 agricultural Associated Press, 25 financial companies, and two other units; local currency market Total members 3948 Jia, including 345 commercial banks, three policy banks, 583 farmers associated community, 102 insurance companies, 106 securities companies, 804 investment funds, 61 fund management companies, 79 home finance companies and 1,865 other units.

RMB foreign exchange forward foreign exchange derivatives of the China Foreign Exchange Trading Center, RMB and foreign exchange swaps, the renminbi foreign currency swaps and RMB foreign exchange

options, these types of financial derivatives transactions are bilateral Inquiry ", but a variety of products market access conditions vary: RMB market conditions of the foreign exchange forward market is permitted to the China Foreign Exchange Trading Center application filed by the State Administration of Foreign Exchange, financial institutions and non-financial enterprises; RMB foreign exchange swap market conditions is obtained the State Administration of Foreign Exchange forward transactions for the record qualified financial institutions and non-financial enterprises in more than six months; RMB and foreign exchange currency swap market has RMB inter-bank foreign exchange forward market membership filed by the State Administration of Foreign Exchange to carry out currency swaps of domestic institutions. RMB foreign exchange options the subject of the offer, including the USD / CNY, HKD / CNY, JPY / CNY, EUR / CNY, GBP / CNY, CNY / MYR, CNY / RUB other currencies, 25 Delta Call, ATM, 25 Delta Put corresponding hidden with volatility. Bond forward interest rate derivatives, forward rate agreements, interest rate swaps (three kinds of products are used Inquiry transaction and click-wrap "transactions), the CRM certificate (credit risk mitigation certificates), which uses the Inquiry transactions, signed the "China's inter-bank market in financial derivatives trading Master Agreement (certificate Special Edition)" institutional users are eligible transactions.

The interbank foreign exchange market is the main body of China's foreign exchange derivatives market. The 2007 inter-bank foreign exchange forward market total turnover of 2945 total turnover of 22.382 billion U.S. dollars. RMB foreign exchange swap transactions active since its launch in April 2006, in 2007 the total trading volume of 15,896 pen, with a total turnover of \$ 314.614 billion RMB and foreign exchange currency swap transactions listed in the December 10, 2007, the total annual turnover of 4 pen , with a total turnover of \$ 080 million. Market expectation of RMB appreciation in 2008 weakened RMB foreign exchange forward transactions total turnover of \$ 17.37 billion, a decrease of 22.4% compared to 2007, RMB foreign exchange swap transactions are active, with a total turnover of \$ 440.3 billion, a year-on-year growth of 39.6%, RMB foreign exchange The small amount of currency swap transactions, with a total turnover of \$ 010 million. The

2009 RMB foreign exchange forward transactions continued to shrink, with a total turnover of \$ 9.767 billion, a decrease of 43.8% year-on-year, substantial growth in RMB and foreign exchange swap transactions, with a total turnover of 801.802 billion U.S. dollars, a year-on-year growth of 82.1%. November 2010, "the bank receipt and payment system positions balance the implementation of the lower limit management measures introduced to stimulate volume growth of RMB foreign exchange forward transactions, the total annual turnover of \$ 32.67 billion, a year-on-year growth of 234.5%, RMB foreign exchange swap transactions continue to grow, with a total turnover of \$ 1.28346 trillion, a year-on-year growth of 61.4%. Larger growth of RMB foreign exchange forward transactions in 2011, the interbank foreign exchange forward market total turnover of 214.6 billion U.S. dollars, an increase of 556.87%, \$ 387.1 billion of the total turnover of the bank customer market, the interbank foreign exchange and currency swap market total turnover of \$ 1.771 trillion, an increase of 37.99 percent year-on-year, \$ 14.2 billion of the total turnover of the bank customer foreign exchange and currency swap market. April 1, 2011, foreign exchange options listed for trading, with a total turnover of \$ 1.88 billion, including \$ 1.01 billion of the total turnover of the inter-bank foreign exchange options market, the total turnover of the foreign exchange options market bank customers of \$ 870 million. According to the statistics of the China Foreign Exchange Trading Center, the RMB foreign exchange forward market in March 2012 the month a total turnover of \$ 23.865 billion RMB and foreign exchange swaps the month a total turnover of \$ 207.959 billion.

RMB interest rate swap transactions in interest rate derivatives market more active, while the bond forward transactions and forward rate agreements are relatively light. Notional principal amount of 412.15 billion yuan RMB interest rate swap market in 2008 than in 2007 on behalf of the principal amount of 218.69 billion yuan increased by 88.46% and transaction slight increase in 2009, the transaction volume growth in 2010, the notional principal amount of 1.50034 trillion yuan, compared with 2009 growth 225% of 2011 transactions continue the growth momentum, the notional principal amount of 2.67596 trillion yuan, a year-on-year growth of 78.36%. The bond forward 2009 years ago, the

volume of transactions is growing year by year, the transaction value of 500.55 billion yuan in 2008 than 2007, an increase of 98.78%, turnover reached 655.64 billion yuan in 2009, the volume of transactions in 2010 plunged to 318.34 billion yuan, down 51.45 percent year-on-year decline in transaction volume in 2011 to 103.01 billion yuan, a year-on-year decline of 67.64%. Small compared with interest rate swaps and bond forwards market forward rate agreement market size continued to shrink and, after 2008 transactions.

## **4. Problem of Chinese derivatives market**

### **4.1. Base product markets are underdeveloped**

The derivatives market is an extension of the basic product market, derivatives market and the basis of the product market is affected by the same economic environment, there is a strong linkage between developed infrastructure products market is the basis for the development of the derivatives market prosperity. The basic products market is a commodity market, stock market, bond market, foreign exchange market. Follow the development of the derivatives market after the basis of the product development of the market to a certain extent, the derivatives market development broadly experienced commodity derivatives markets to the process of the development of the financial derivatives market. The main reason for that is the basis of the product market of the 1990s, China's futures market chaos is relatively weak, some basic products market is still in its fledgling stage, such as the stock market, in this case, the rush to the development of the derivatives market will inevitably lead to undesirable consequences confusion, and derivatives markets would also disrupt the normal development of the underlying product market. At this stage, the relatively developed markets in terms of the basic products market in China is still relatively weak, less variety of market transactions, trading smaller, restricting the development of the derivatives market.

### **4.2. Few varieties of derivatives trading, the lack of pricing power**

Exchange derivatives market trading varieties are now only 28 species, of which only one financial

derivatives, that is just listed two years of CSI 300 stock index futures. Fewer varieties of derivatives trading, transaction size small no pricing power in the international market. Chicago Mercantile Exchange Group (CME Group) is the world's largest futures and options market, which provides the world's major agricultural commodity futures trading, corn, soybeans, soybean oil, wheat prices on the international market are determined by the CME Group markets; CME the Group's energy futures commodity trading many products in the market price of global pointers status; CME Group, together with the London metal Exchange to become the world's most important metal futures market; CME Group is the world's major stock index futures and options trading market, including standard the main index of the S & P 500, the Nasdaq 100 index, the Nikkei 225 index futures; It also offers 54 kinds of currency futures in more than 20 countries and 31 options trading. CME Group to become the world's largest futures and options markets are a main reason is that it has a wealth of trading products, the huge trading volume. China derivatives market is a lack of independent research and design of products, many products are directly imported from abroad, so there is no pricing power. So far, the venue derivatives market also only the futures market no options markets, futures markets, hedging and options market for spot and futures market hedging function for the spot market, derivatives market options market is incomplete insufficiency, which is not conducive to the development of the Chinese derivatives market also affect China's economic security.

### **4.3. Derivatives market regulatory system is imperfect**

China's derivatives market regulatory body "line 3 will easily lead to supervisory duties is not clear. Derivatives market regulatory inadequate laws and regulations, and the lack of a more refined, clear derivatives market regulations. Speaking about the reasons for the financial crisis, many people are accused of lax financial regulation in the United States. U.S. derivatives market is highly developed, and its legal system is relatively sound, but it is undeniable unregulated responsible for the outbreak of the financial crisis. Derivatives market is both a free market and the

market of a legal system, freedom and the rule of law are not contradictory, both capable of symbiotic, not legal norms of the market is bound to fall into disorder and chaos, the only freely traded market in a sound legal norms to healthy and orderly development.

#### **4.4. Derivatives market to the lack of senior talent**

China lacks senior personnel derivative product development. Wall Street reason why the central position in the global financial markets, one of the main reasons is the gathering of the world's best financial talent. Lack of self-development of the talents of the derivative products, derivatives trading varieties less, but can not grasp the pricing of the product.

### **5. Recommendations of the derivatives market development in China**

#### **5.1. Speed up the development of basic products market**

The basis of the product market is the cornerstone of the development of the derivatives market, and therefore must vigorously promote the development of basic products market. China's stock market, bond market, foreign exchange market, the degree of development is still relatively low, should take active measures to promote the development of these markets, strengthening policy guidance at the same time reduce the blindness of the market.

#### **5.2. Actively develop derivative products**

Active derivatives market has a rich variety of transactions, and our country to strengthen the financial derivatives market, product development and launch, while the consolidation of commodity derivatives markets. Financial derivatives market have occupied a dominant position in the global derivatives market, are first in the global derivatives trading in financial derivatives, and accelerate the development of China's financial derivatives urgent. Further promote the interest rates, market-oriented exchange rate, and improve the stock market, to provide space for the launch of the

Interest rate, currency, stock class, futures, options, and futures and options products. To strengthen the development of the credit derivatives market, and credit risk reduction.

#### **5.3. Improve derivatives market supervision system**

Further clarify the regulatory body of the derivatives market, to clarify their respective responsibilities, establish and improve laws and regulations. Strengthen the derivatives market specifically, refining the formulation of regulations and implementation of strict derivatives market margin system and settlement system. Vigorously publicize relevant laws and regulations of the derivatives market, regulation, legal awareness of the derivatives market participants to strengthen the derivatives market of industry self-regulation organization building, the joint government and industry self-regulatory organization under the supervision of the orderly operation of the derivatives market.

#### **5.4. Train senior talents**

Talent must rely on the train can not rely on the introduction of the University should actively carry out the derivatives development programs to strengthen cooperation and exchanges, futures companies, so that students learn better when they participate in practice, the relevant departments to promote domestic universities and foreign universities and derivative goods market institutions, exchanges and cooperation, through multiple channels to speed up the cultivation of the senior personnel of the derivatives market.

### **6. Conclusions**

Derivatives market plays an increasingly important role in economic development; the relatively short history of the development of China's derivatives market also encountered a lot of problems in development. The derivatives market and the basis of product market has a strong linkage between these two markets are an important part of the modern market system, and neither is dispensable. China is not only a lot of products, producing countries and consuming countries, and

promote the development of the derivatives market allows China has mastered the more pricing power, and improve the construction of a modern market system in China, enhancing economic security, to ensure sound and rapid economic development .

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