Research on the development of derivatives' market in Asia

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Abstract. Due to developing economies and companies looking for ways to hedge their risks with profitable investments or insurance policies against loss, Asian countries trade a substantial volume of unregulated derivatives. More market stability may allow stricter controls on this developing industry, which would subsequently strengthen local economies. This paper conducts academic research on derivatives in Asia. Compared with previous literature, this study covers a wide variety of issues. It classifies these issues in light of the widely acknowledged functions that derivative markets provide and limit the evaluation to the most prestigious financial publications as well as those that focus on emerging markets or derivatives. The finding of this paper should help the futures traders, specifically in the Asia hedging market, to explore the possibilities in the market and mitigate the risk.

Keywords: Derivatives, Forwards, Swaps, Interest rates, Futures.

1. Introduction

Since the Asian crisis, Asian bond markets have expanded significantly, but derivative product creation hasn't always followed behind. Before the middle of 2003, the markets that emerged due to the recapitalization of the banking industry had minimal exposure to negative bond market activity. This could have made people at the time less aware of the importance of hedging goods. Liquid hedging instruments are seen as crucial to a bond market's long-term health, even if they might not be technically required for its expansion [1]. Asia's derivatives industry is still modest but expanding. The Bank for International Settlements (BIS) estimates that Asian nations trade derivatives worth $200 billion annually. Comparatively, North America trades derivatives for around $1 trillion per year. However, as Asia's economy expands and businesses look for ways to manage their risks and make profitable investments, this number is anticipated to rise [1]. To regulate the derivatives market and guarantee fair play among all parties participating in these arrangements, many Asian nations have established regulatory agencies. Additionally, several nations have outlawed particular unregulated derivative products, including binary options and virtual currencies. As a result, speculative investment is hence less probable, and public safety is raised. As central banks of Asia strives to promote the expansion of fixed income markets, assistance in the development of derivatives market is crucial. Thus, this paper strives to provide investors with an overview and analysis of the Asian Derivative market.

2. Development of Asian Derivatives market

2.1 overall development of Asian Derivatives' market

First off, compared to those in the US or Europe, Asian financial markets are less established. Because of this, a hedge fund's ability to employ a wide range of assets and instruments within the context of an investment strategy is limited. For instance, the limited availability of borrowing in the China A-share market prevents many CEOs from making use of a powerful opportunity set and risk management tool [2]. The Asian derivatives market is still tiny but expanding. The greatest derivatives trading location in Asia, however, is uncontrolled. The World Bank has suggested standardizing contracts for all derivatives in order to tighten market regulation. All parties concerned would benefit from a more stable market as a result. Despite the fact that this type of exposure may be obtained elsewhere, the regulatory structure in the A-share market effectively restricts the amount of AUM that China-focused L/S managers may operate in this market at an adequate level (for example, through H-shares, US-listed ADRs) [2]. In comparison to Europe and US, where corporate bonds and loans are all readily and totally available, the Asian credit markets are comparably less developed. In general, the lack of a comparable extensive selection of basic components in Asian markets as equivalents in the US and Europe limits the range of hedge fund strategies that may be undertaken at large magnitude (over $2bn).

2.2 Derivative market development in some Asian Regions.

2.2.1 Hong Kong

The Hong Kong Exchange is situated right in the middle of Hong Kong, one of the world's principal financial centers. Soon after the British Empire acquired control of the island, securities trading began, resulting in the establishment of many stock exchanges that eventually merged to create the modern Hong Kong Exchange's regulatory structure. As one of the largest stock markets in the world, the Hong Kong Exchange acts as a financial bridge between mainland China and international capital markets [3].

Due to its two trading boards, the Hong Kong marketplace is home to both established and emerging companies. The market, one of the most popular venues for IPOs, currently has 2,572 distinct businesses listed. Due to the wide range of requests from enterprises, the Hong Kong Exchange provides two independent trading boards. The main market is the Main Board, which is home to, among other things, large, well-established businesses with past financial records and greater than minimal public ownership. On the other hand, the listing requirements on the Growth Enterprise Market (GEM) are less strict to provide enterprises more access to financing. Because of this, investing in stocks on the GEM is much riskier than investing in Main Board companies.

The only two that are paid by physical delivery are the 10-year TWD contract and the three-year HKD bond futures. The Exchange Fund Notes (EFNs) issued by the HKMA serves as the contract's reference instruments. The Hong Kong Futures Exchange offers trading in two-month Hibor futures, two-month Hibor futures, and two-year EFN futures. Due to the already robust OTC derivatives market liquidity and the relatively modest degree of international participation, the liquidity in each of these contracts has recently dropped and fallen short of expectations.

Table 1. Futures Interest Rate (HKD)

	A month Hibor futures	**Hibor futures (2 months)**	**Hibor futures (2 years)**
End-2019	850	69940	486
End-2020	30	14907	0
15 May 2021	65	7283	400

Source: Xie (2022) [3].

2.2.2 Singapore

The FX derivatives market has been deregulated with the assistance of the Singapore Financial Authority (MAS). For example, the MAS updated Notice 857 in 2020 to permit non-residents to trade SGD FX options freely without having to present a reason for each transaction. A few fundamental restrictions are nonetheless in place to protect the currencies from speculation. For instance, banks are not permitted to lend any non-resident financial firm more than SGD 6 million. Interest rate swaps are also more liquid in Singapore than bonds offered by governments. The float in an IRS contract is represented by the swap offer rate (SOR), which is made public by the Association of Banks in Singapore. It is an expected FX rate that is fixed in the usual G7 transaction. Due to the absence of a robust money market, some Asian nations are using this strategy to create their own interest rate swap market [3]. The great majority of swap market hedgers are corporations, while opportunistic and significance investing are frequently practiced by hedge funds.

According to the MAS, hedge funds, as opposed to more traditional funds, may provide diversity and can help Singapore develop into a prominent global financial center. As a result of this recognition, the MAS enacted laws allowing the selling of retail hedge funds to the local market. In general, swap spreads have closely tracked changes in the market, especially for long-dated tenors. To put it another way, swap spreads commonly rise and fall with interest rates. Additionally, there is a marketplace for instant swaps of interest rates (OIS), with the first transaction taking place in April 2019 [4]. In 2020, the government relaxed its restrictions on the cross-currency swaps market. Before, the completion of the relevant economic transaction was necessary for currency swaps.

2.2.3 Korea

The majority of Korea's FX market regulations were eliminated in 2019, albeit some of this deregulation has since been pulled back. All forward FX transactions were required to be approved as current account transaction hedges before to 2019. Making a physical delivery requires supporting documentation even if the onshore forward market has a year's worth of acceptable liquidity. Korea still retains an NDF system whereby overseas entities are allowed to connect with other banks or enterprises, unlike Hong Kong or Singapore. NDF transactions don't need reports or authorizations. The regulatory environment suddenly intensified in January 2020 in an effort to lessen the speculative desire for KRW from clients in other countries. According to their positions as of January 14, 2019, and January 16, 2020, respectively, local financial institutions were initially prohibited from raising net long dollar holdings through NDF transactions by more than 10% or lowering net short positions by more than 12%. In the end, the restriction on holding net dollar shorts was lifted. If the upfront premium for FX options exceeds 21% of the option's notional value, prior clearance from the Bank of Korea (BoK) is necessary [5]. The underlying trade documentation must adhere to the underwriting standards for forward transactions if there will be a physical delivery at option maturity. The daily trading volume for currency options on the non-deliverable options (NDO) market is around USD 361 million.

The fully resolved 3-year periods of Korean Treasury bond (KTB) futures contract stands out as a potential winner among exchange-traded futures markets. Two-year bond futures may be so well-liked in Korea in part due to the lack of transparency in the financial markets and the absence of other hedging options. The World Bank asserts that the futures market has expanded greatly over time as a result of greater bond market liquidity and significant worldwide demand. The two main market participants are banks and ITCs, which collectively own 52-65% of the market. Even though just about 13% of total commerce is conducted by foreigners, they appear to be a significant contributor to the market's growth. Given that they are often seen as being brighter than domestic athletes, they actively watch their behavior. Foreigners may find that trading futures is simpler than trading cash bonds since they are less concerned about taxes, leverage, and liquidity. The claim would be supported by the fact that foreigners only own 7% of cash bonds but up to 35% of the market's net open interest. Foreign net open interest generally makes up between 0.7 and 5.0% of the market for government bonds [5].

On the Korea Futures Exchange (KOFEX), latest one-year MSB futures, two-month CD futures, and six-year KTB futures are accessible; however, none of these are currently trading.

Table 2. Two-year bond futures in Korean Foreign participation

Net open interest from foreigners	average market open interest	**the amount of net open interest that foreigners own**	**the outstanding cash bond**
11-32%	**70,000 contracts**	**KRW 0.6-3.0trn**	**KRW 97trn**

Source: Jong and Fabozzi (2022) [5].

2.2.4 China

The People's Bank of China (PBOC) establishes and controls China's foreign exchange policy, which is carried out by the State Administration for Foreign Exchange (SAFE). Despite becoming a major player in global commerce, the Chinese economy nonetheless faces a number of limitations. However, due to persistent international pressure on its currency, China's monetary system will probably grow more adaptable in the long run [6]. The administration has made it plain that they also aim to liberalize the investment portfolio in order to construct a competent finance system and separate monetary policy, even though China favors gradual reform. Currently, only a few domestic companies and reputable foreign institutions have access to the FX spot market. While current account transactions require the required documentation for transactions totaling more than USD $1 million, capital account transactions require prior clearance from the regional SAFE. The Bank of China is the sole provider of CNY deliverable forwards with a tenor out to 6M. CNY NDFs have a large market even if onshore corporates are not allowed to participate [6]. Despite being allowed to participate in offshore non-deliverable CCS trading, the key challenge facing the local Chinese market is the growth of the underlying bond market. There isn't yet a market for onshore IRS or CCS.

2.2.5 Thailand

In January 2019, the Thailand central bank loosened a number of rules in an effort to stop currency speculation. For instance, the onshore and offshore spot THB FX markets were combined by allowing local financial institutions to undertake spot THB transactions with non-residents [6]. However, loan facilities offered by each banking institution to non-residents where there is no supportive economy or industry in Thailand are restricted to a maximum outstanding amount of THB 50 million per counterparty in order to avoid speculation on the foreign exchange market. However, there are no restrictions on the size of short THB forward positions. The Thailand Bank has advocated tighter regulations in an effort to reduce speculative capital inflows.

Onshore banks were not allowed to borrow more than THB 60 million from a single non-resident from September 12, 2020, unless the underlying transactions lasted more than two months. This prohibition applied to borrowing-like operations including purchasing foreign exchange futures and selling foreign exchange swaps. To avoid THB speculation, more safeguards were put in place on October 14, 2020. There were two key modifications: (i) The foreigners THB account balance per account must not exceed 410 million THB; and (ii) Foreigners' THB accounts were to be locked in for at least five months without interest.

2.2.6 Taiwan

To safeguard Taiwan's and China's financial stability, the Central Bank of China (CBC) has made preventing currency market speculation a top priority (hereinafter referred to as Taiwan). The administration's top priority is keeping export competitiveness versus nations like Japan and Korea. It manages the currency by direct engagement and capital restrictions, which are strengthened by the sizeable foreign exchange reserves of the CBC. Explicit regulatory authority authorization is required to trade onshore FX futures, options, and spot [7]. Since the onshore deliverable market is only open to non-residents, arbitrage transactions in the interest rate and foreign exchange markets are not permitted. The NDF market is quite liquid. However, onshore banks are not permitted to execute an NDF transaction with inland businesses.

Although they haven't yet gained much popularity, government bond contracts were first introduced by the Taiwan Financial Futures Exchange at the beginning of 2019. The rationale may be because investment banks choose to hold bonds until maturity stage, there are high transaction costs, on-the-run and off-the-run bonds have very different accessibility and liquidity characteristics, or for other reasons. Liquidity hasn't been improved by reducing the maturity range for deliverable securities or getting rid of the cash settlement penalty. The futures contract based on 30-day certificates of deposit has also failed at the low end of the maturity spectrum. Choosing a 29-day paper in this instance rather than an 89-day paper now appears unsatisfactory. For instance, interest rate swaps' floating part is based on 89-day rates. In January 2019, the Taiwan Futures Exchange

(TAIFEX) introduced 13-year bond futures. The contract is repaid by the final delivery of bonds with maturities ranging from seven to eleven years, just as the phenomenally popular 10-year Japanese Government Bond Futures Contract. To avoid short squeezes on the cheapest bonds and to issue bonds close to the final settlement date, TAIFEX simultaneously opened a Bond Lending Center. With the launch of bond futures, TAIFEX hoped to attract more foreign capital to the Taiwan bond market by providing effective hedging tools [8]. Even if the initial price movement wasn't fully favorable, this may ultimately occur. There are still more than 2,000 contracts to be added.

3. Main products in Asian derivatives market

As a result of improved market infrastructure and development, robust regulatory frameworks, and a growing awareness of the advantages futures and options can provide among institutions and sophisticated retail investors, the volume of derivatives trading in Asia has been increasing significantly in recent years.

3.1 Forwards and Futures

Forward and future contracts have a wide range of applications and are essential in Asian markets since they may produce revenue. Because forward contracts have shorter delivery terms than futures contracts, which have longer ones, advance contract prices are frequently cheaper than future contract prices. Forward and future contracts are widely used by companies like importers that need raw materials at current prices today but will pay later when they receive the goods from China through a forward or direct importation method. By adopting netting procedures, forwards or futures serve as a tool for banks to control the movement of money inside the confines of their organization. They are used by banks to control the liquidity between different financial institutions.

3.2 Options

Asian options market is expanding quickly. Asia saw the fastest growth rate in terms of volume and value of transactions between 2017 and 2020, according to investment banking firm Euro monitor International (EBI). The largest contribution to this rise came from Hong Kong, where institutionalized trade expanded by 29% yearly between 2018 and 2020. Large corporations and financial businesses trade for their clients in order to hedging or speculate on markets are referred to as institutionalized trading. Investor appetite for investment possibilities in Asia is the primary driver of the options market's rapid expansion in this area. Over the past several years, the region's economies have seen tremendous expansion, generating profitable investment possibilities for those with strong judgment and an understanding of current market trends.

3.3 Swaps

Because spot trading is so common in Asian markets, the value of the swap markets in Asia is lower than on other continents. Spot trading is when a business sells or buys an item at its present value or right away following a price increase or decrease. Due to the fact that futures contracts offer higher profits compared to spot trading tactics, Asian businesses choose to trade them over derivatives. However, due to the expanding need for finance from their booming economies, Asian businesses are increasingly resorting to derivative trading. As a result, the Asian swap market is evolving quickly as more businesses turn their attention to this lucrative area of trade.

Asia provides a range of services to the global derivatives market, including clearing houses where contracts are settled after they expire. When contract terms state that payment deadlines must naturally occur or contingently over a period via interest charges gathered through outstanding interest rates on treasury securities issued by their respective country's central banks throughout Europe and Asia, clearing houses to make sure that all parties involved receive their due payments (e.g., Treasury Bills). Some big banks have their own proprietary clearing houses for a number of reasons, including risk management. These companies can behave like hedge funds as they usually handle numerous investments at once and have the ability to make their own investments as opposed to only managing others' money as an investment bank would.

3.4 CDS

The most recent British Bankers Association (BBA) credit derivatives report 2020/2021,13 predicts that at the end of 2020, there would be USD 1.17 trillion in total notional outstanding for credit derivative instruments. The total notional outstanding is anticipated to reach USD 6.9 trillion by the end of 2021. With around 59% and 48%, respectively, of the industry's buyers and suppliers of insurance, banks dominate both segments [9]. With a 54% market share in 2020, single name credit default swaps (CDSs) remained the most common instrument among a range of alternatives. The most frequently traded credit derivative in emerging nations is sovereign single-name CDSs [10, 11]. For Asian sovereign CDSs, there is an active broker market. Between one and ten years out, two-way pricing is frequently available for the most liquid sovereign names. Dealers frequently trade $7 million in fictitious transactions. By 2025, the Asian derivatives industry is expected to overtake all others, according to Markets and Markets' report titled "Asia-Pacific Predominant Derivatives Industry: Trends & Forecasts to 2025" [11]. This number illustrates how profitable Asia's unregulated markets are as a result of the regions expanding firms trying to use derivatives contracts to manage their risk. Due to growing public safety concerns over these contracts, certain Asian nations have established tougher market controls than other parts of the world. Since 2012, India has outlawed binary options, a derivative that enables users to forecast future prices. Other countries with stringent regulatory bodies include China and Singapore. While these bodies discourage unregulated business practices, they encourage their citizens to invest prudently through hedging strategies with derivatives contracts.

4. Conclusion

The research reviews the data from Asia’s option market during 2017 to 2020. Based on the evaluation of the large market and high profit in Asian market, we conclude that the Asian market is indispensable and highly profitable. However, the structure of the Asian market is largely different from other regional market, which makes the development of the Asian market become much challenging than western nations. Especially, the spot trading model provides even much high revenue during a successful trade, but it may violate the traditional trading model in Asia. In the meantime, standardized regulating institutes, such as clearing houses, should also be developed so that all payment can be received on time. Thereby, the research shows strong confidence on the Asian market, but the current immature status will require a lot of work to be done before stable and safety revenue can be made while not interrupted the native financial ecology in Asian fiancé market.

While this paper explores the Asian hedging market and has different focuses on different countries and regions, it still has some limitations. It should inspire other researchers to keep investigate in the Asian trading markets which have a bright potential yet to be exploit.

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