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Supervision of Derivatives Market after the Global Financial Crisis

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I. Overview

1. Global Derivatives Market Overview

✓ Changes after Global Financial Crisis

- Implementing **OTC derivatives market reforms** that G-20 leaders agreed in Pittsburgh (September 2009)
- Moving towards **central clearing** to help mitigate systemic risk in the OTC derivatives markets

✓ Trading Volume Trends

- **Global futures and options volume bounced back after 2012**

(In millions of contracts)

	Jan-Dec 2010	Jan-Dec 2011	Jan-Dec 2012	Jan-Dec 2013	Jan-Dec 2014
Global Futures/Options Volume	22,425	24,982	21,190	21,551	21,867
YOY % change	26.4	11.4	-15.2	1.7	1.5

* Source: FIA (Futures Industry Association)

✓ Noteworthy Features

- **Explosive growth of China-related** market(CSI300 futures, FTSE China A50, etc)

2. Derivatives Market in Korea (1/4)

OTC

- **The oldest and most vital derivatives market**, banks being main participant
- Securities firms' contracts on the rise because of surge in structured notes issuance, but still insignificant

Exchange Traded

- Launched stock index futures in 1996
- **Primarily equity-focused**, in spite of the exchange's effort to diversify its offerings

Structured Notes

- Rapid growth in new investment methods since beginning of 2003
- A niche market compared to OTC and exchange traded, but significant because **heavily marketed to retail investors**

2. Derivatives Market in Korea (2/4)

(1) OTC Derivatives in Korea

- No significant changes in notional amount of OTC for the last 5 years
- Total nominal amount: **KRW 7,373** trillion in 2014, **up 8.5% YOY**

(In trillions of won)

	2010	2011	2012	2013	2014
OTC derivatives (nominal amount)	6,932	6,903	6,782	6,820	7,373
Interest rate swaps	4,326	4,332	4,429	4,497	4,662
FX forwards	1,341	1,344	1,204	1,204	1,476
Others	1,265	1,227	1,149	1,119	1,235

2. Derivatives Market in Korea (3/4)

(2) Exchange-traded Derivatives in Korea

- **Falling turnover** of exchange-traded derivatives has since 2012
 - Turnover declining because of falling KOSPI200 index volatility
- Trades based on **equity index** comprising **a large proportion** of total exchange trades
 - Portion of equity-related trades(Jan-Dec, 2014): Korea 83.4%, Global 56.4%

(In trillions of won)

	Jan-Dec 2010	Jan-Dec 2011	Jan-Dec 2012	Jan-Dec 2013	Jan-Dec 2014
Exchange-traded derivatives (turnover)	52,807	70,011	48,420	40,124	32,874
Equity options	40,338	54,923	36,435	28,466	25,444
Stock index futures	6,737	8,141	4,390	3,925	1,985
Interest rate futures	4,577	5,960	6,784	6,944	4,816
Others	1,155	987	811	789	629

2. Derivatives Market in Korea (4/4)

(3) Structured Notes in Korea

- Total outstanding notional: **KRW 85.2 trillion in 2014, up 35.0% YOY**
- Due to the low interest rates environment , the demand is ever increasing

(In trillions of won)

		2010	2011	2012	2013	2014
Underlying Equity	Issuance	24.3	32.9	42.9	45.9	71.8
	Redemption	24.6	20.1	35.6	40.0	54.9
	Outstanding balance	16.9	28.5	34.8	40.3	57.7
Underlying Non-Equity	Issuance	5.6	12.3	21.4	20.8	23.7
	Redemption	2.8	7.5	15.0	11.6	19.6
	Outstanding balance	3.6	4.9	13.6	22.8	27.5
Total outstanding balance		20.5	33.4	48.4	63.1	85.2

3. Key Features of Derivatives Market in Korea

- ✓ **Trade volume of exchange-traded derivatives still too large compared to real economy and cash equity market**
 - Options turnover/GDP (2013): Korea 57 times, USA 2.5 times, HK 7.4 times
 - Options turnover/cash equity turnover (2013) : Korea 50 times, USA 1 time, HK 1.4 times

- ✓ **Underlying assets of OTC derivatives concentrated in FX**
 - Global : interest rate 80.2%, FX 12.0% (nominal amount, 2014)
 - Korea : interest rate 65.2%, FX 32.3% (nominal amount, 2014)
interest rate 21.6%, FX 75.8% (turnover, 2014)

- ✓ **Derivatives becoming commoditized**
 - Outstanding public issuances: KRW 19 trillion (2012) → KRW 37 trillion (2014)
 - Due to the difficulty in differentiating, financial firms' profitability is falling

II. Issues in Derivatives Market

1. The 2007~2008 Global Financial Crisis

- **Lack of market transparency**

- Regulator **unable to foresee** amount and type of **risk embedded in the OTC derivatives** market because of a lack of transparency

- **Increased systemic risk**

- The **excessive securitization** of assets and the over issuance of related derivatives resulted in the increased systemic risk

- **Concentration of OTC derivatives trading**

- A few global banks traded most of OTC derivatives as a key dealer
- “Too Big To Fail”, “Too Interconnected To Fail”

2. Measures to reform Global Derivatives Market (1/3)

- **G-20 Leaders' Statement the Pittsburgh Summit ('09.9.24~25)**
 - All **standardized OTC derivative** contracts to be traded on exchanges or electronic trading platforms, where appropriate, and **cleared through central counterparties** by end-2012 at the latest. OTC derivative contracts required to be **reported to trade repositories**.
- ✓ **CCP (Central Clearing Party or Central CounterParty)**
 - Moving towards central clearing of standardized OTC derivatives
 - Reduction in counterparty credit risk
 - Build infrastructure equivalent to that of the exchange-traded market
- ✓ **TR (Trade Repository)**
 - A centralized registry that maintains all OTC derivatives transaction records
 - Improve market transparency for better systemic risk assessment

2. Measures to reform Global Derivatives Market (2/3)

(1) CCP in Korea

- Legislative amendments and a regulatory approval to a CCP
 - Layout detailed regulation on mandatory trading and clearing requirements (July, 2013)
 - **KRX obtained license** to operate as a **CCP** in Korea (September, 2013)

- Implementation of the clearing for interest rate swap contracts
 - Commenced voluntary clearing services (March 3~ June 27, 2014)
 - Commenced mandatory clearing for **plain vanilla KRW denominated IRS** in July 2014

- Efforts to obtain certification as a globally qualified CCP
 - Obtaining certification as a globally qualified CCP with global financial supervisory authorities in progress

2. Measures to reform Global Derivatives Market (3/3)

(2) TR in Korea

- Introduction of TR in progress
 - Holding working level meetings with financial firms and the related institutions (2H, 2014)
 - Establishing the implementation plan through analysis of global cases
 - **KRX was nominated as a TR** , instead of KSD (August, 2015)

- Main goal in creating TR
 - Meet global standards for OTC derivatives market transparency
 - Improve quantitative and qualitative level of the centralized data
 - Reduce reporting companies' reporting burden and cost
 - Effective use of data to **enhance market surveillance**

3. Recent Major Debacles in Global Derivatives Market

✓ **Libor Rigging**

- Cartel operated by 12 global major banks (UBS, RBS, Citi, etc) when setting LIBOR between 2006 and 2010
- **Combined penalties** paid by the banks so far **more than USD 10 billion**
- One trader sentenced 14 years in prison

✓ **JP Morgan's loss in CDS index**

- About **USD 6 billion loss** due to transactions involving CDS index in July 2012
- Trades done by CIO were reported to be “hedging”, rather than “speculating”

✓ **Goldman Sachs Profit from Greece Debt Crisis**

- GS helped Greece to **conceal their debt by derivatives**, for them to join eurozone
- Initially the debt EUR 2.8 billion, restructured to EUR 5.1 billion by Mario Draghi in 2005, who was back then the Managing Director of GS

4. Major Debacles in Korea's Derivatives Market (1/4)

✓ **KIKO**

- Large losses of Korean export companies on knock-in, knock-out FX forward to hedge against their foreign exchange risk

✓ **ELS fixing price manipulation**

- Securities firms and foreign IBs accused of selling massive amounts of equities, which was underlying asset of equity-linked securities on the last trading day, to intentionally manipulate

✓ **Bankruptcy of HanMag securities**

- HanMag bankruptcy after failing to settle its critical algorithm trading mistake on index options transactions

4. Major Debacles in Korea's Derivatives Market (2/4)

(1) KIKO

- **Knock-In, Knock-Out FX forward**

- “Knock-in, Knock-out” features was added in order to **enhance the selling rate**, because the prevailing spot and forward rates were **far below many corporation's break-even FX rate**

- **Large losses at SMEs in 2008, that traded in KIKO**

- 519 companies, contract amount worth USD10.1 billion, 345 related trials
- Supreme Court's ruling:

“KIKO is a normal product to hedge against currency risks. Therefore, corporation should take responsibility if banks explained the product sufficiently” (September 2013)

- **Getting wide attention about mis-selling of derivatives**

- **Overhedge**, neither KO nor leverage, was the **main culprit**; banks now have the responsibility to check whether or not

4. Major Debacles in Korea's Derivatives Market (3/4)

(2) ELS manipulation

- **Complaint about manipulation of ELS fixing price from retail investors**
 - Financial firms claimed to perform “neutral” delta hedging, i.e., unintentional
 - Many civil lawsuits and criminal charges ensued (ongoing 13 civil suits and 11 criminal suits)
- **Imposing new guideline to prevent manipulation of individual equity**
 - Change of fixing methodology from one day's single price to at least 3 days average
 - Prohibit trading seems like manipulation during the period of underlying asset prices to be determined
 - Supreme Court ruling in civil suit:
 - “The fact that financial firms do delta hedging mechanically does not exempt them from the responsibility of avoiding any actions that give rise to a conflict of interests with their customers” (May 2015)

4. Major Debacles in Korea's Derivatives Market (4/4)

(3) Bankruptcy of HanMag Securities

- **HanMag's bankruptcy due to large losses from algorithm trading**
 - Employee at HanMag wrongly placed orders to buy and sell KOSPI200 index options on December 12, 2013
 - 3.6 million orders only for 143 seconds brought about KRW 46 billion losses and the firm's bankruptcy
- **“Algo” can threaten the stability of exchange-traded market**
 - Contributions from other member firms were used for the first time since KRX establishment to pay back due to insufficient amount of HanMag's margin and contributions
 - Improved supervisory regime by presenting “The measures of improvement the derivatives market stability” (January 2014)

III. Key Supervision Objectives

1. Three Principles of Complex Finance Supervision

Simplicity

- Complexity in financial products not be used as a tool to avoid regulation or generate additional revenue for their own interests
- Encourage product simplification and standardization through stricter accountability and internal controls

Transparency

- Improve product understandability and disclosure on key risk considerations
- Enhanced disclosure on product characteristics and the underlying assets' risk considerations to help investors make informed investment decisions

Consistency

- The liabilities of a product be maintained even after it is embedded into a complex financial product
- Investor protection and other relevant regulations be applied on the basis of the economic substance of complex financial products

2. Derivatives Supervision (1/3)

(1) Enhanced Supervision in an Ever-Changing Market Environment

OTC derivatives market under global standards

- Legislative amendments and selecting a institution to operate as TR
 - Maximize the use of trade information prior to the introduction of Trade Repository
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- Support for Central Counterparty
 - Improve infrastructure of clearing process and requirements

2. Derivatives Supervision (2/3)

(2) Improve Supervisory Regime for Derivatives

Risk disclosure for Structured Notes

- Investor protection with effective disclosure of investment risks and rate of return on structured notes
 - Extension of information offering about underlying assets, mandatory reporting a level of investment risk, etc

Monitor Qualified Retail Investor Scheme

- Assess the qualified retail investor scheme (June 2014) for exchange-traded derivatives trading for any follow-up measures needed

2. Derivatives Supervision (3/3)

(3) Risk Identification and Response

Risk analysis for derivatives trading

- Identify potential risk through analysis of derivatives trading and respond effectively

Monitor issuance of Structured Notes

- Enhanced monitoring through regularly analysis of the structured notes issuances
- Analysis of selling structured notes to domestic individual investors and vulnerable social group

Research Topics about Derivatives Market

- ✓ HFT and ATS

- ✓ Systemic Risks and interconnectedness
 - Financial Soundness of CCP

- ✓ Risk Identification

- ✓ Risk versus Return for the derivatives related instruments

Thank You!