



Role of Capital Market Infrastructure, In Growth of Korean Economy

Korea Exchange
Sang Hwan An

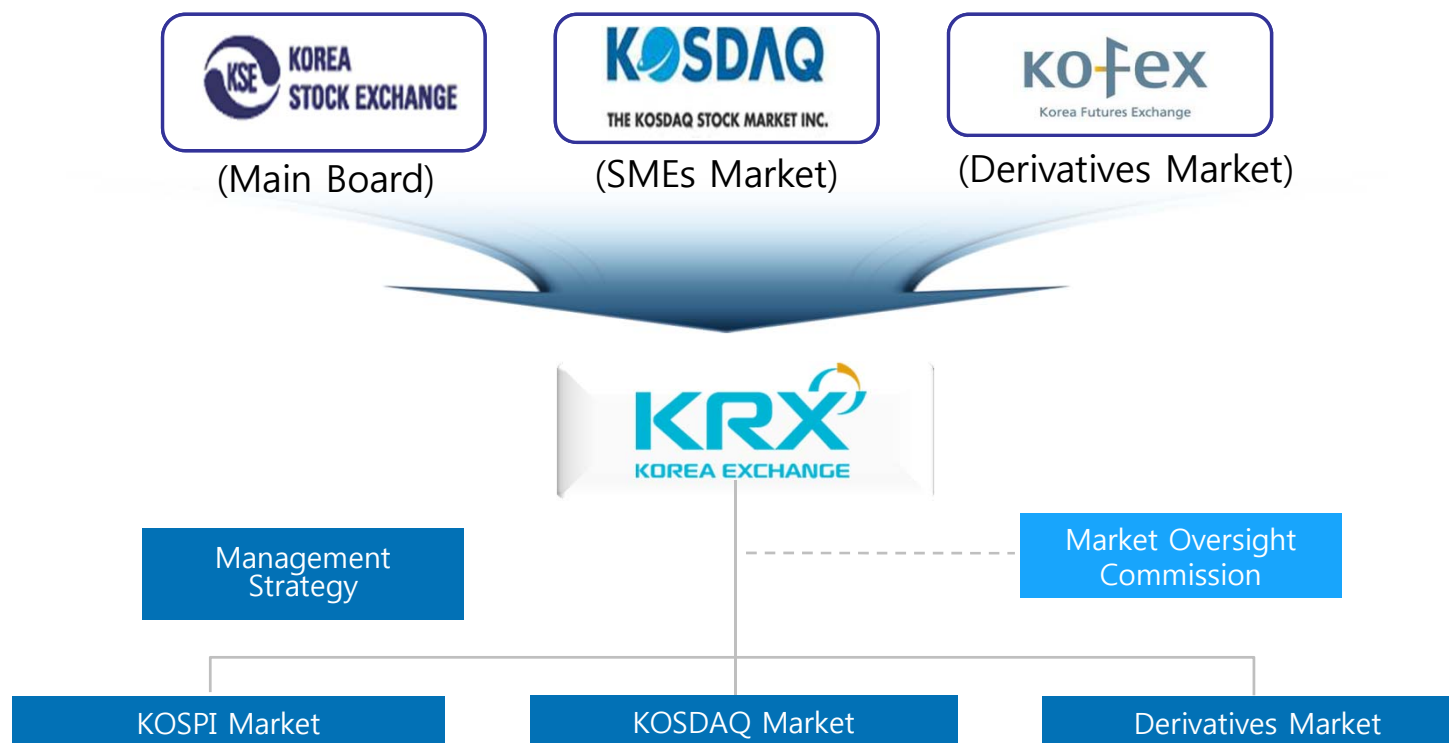


- || I . Present Situation of Korea Capital Market Infra
- || II. New Environment of Korea Capital Market
- || III. Plan to Develop Capital Market Infra

I . Present Situation of Korea Capital Market Infra

■ Existing Capital Market Infrastructure

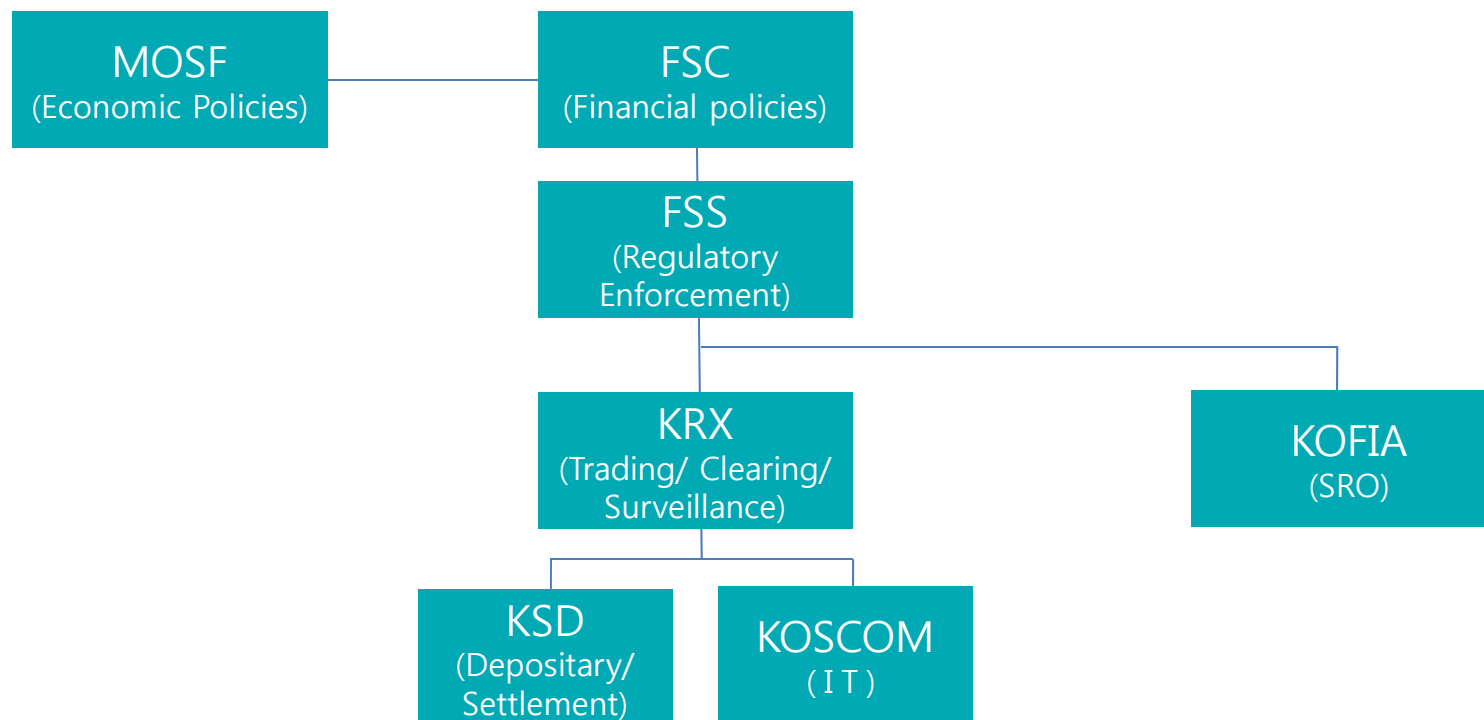
- 3 Exchanges operated independently was consolidated under a single exchange, i.e., Korea Exchange("KRX"), in 2005
 - ← **To improve the efficiency of capital market, the government led the consolidation**



I . Present Situation of Korea Capital Market Infra



Regulatory Framework & Related Organizations



MOSF : Ministry of Strategy and Finance
FSC : Financial Services Commission
FSS : Financial Supervisory Service

KOFIA : Korea Financial Investment Association
KSD : Korea Securities Depository
KOSCOM : Korea Securities Computer

I . Present Situation of Korea Capital Market Infra



■ Global standing of KRX

Equities Market(KOSPI + KOSDAQ, As of the end of July 2013)

Market Capitalization (USD Bil.)			Trading Value (USD Bil.)			No. of Listed Companies		
1	NYSE Euronext(US)	16,510	1	NYSE Euronext(US)	8,028	1	Bombay SE	5,429
2	NASDAQ OMX	5,460	2	NASDAQ OMX	5,530	2	TMX Group	3,944
3	Japan Exchange Group	4,218	3	Japan Exchange Group	3,974	3	Japan Exchange Group	3,411
4	London SE Group	3,890	4	Shanghai SE	2,061	4	BME Spanish Exchange	3,232
5	NYSE Euronext(EU)	3,177	5	Shenzhen SE	2,017	5	London SE Group	2,741
6	Hong Kong Exchanges	2,773	6	London SE Group	1,314	6	NASDAQ OMX	2,579
7	Shanghai SE	2,302	7	NYSE Euronext(EU)	971	7	NYSE Euronext(US)	2,342
8	TMX Group	2,002	8	TMX Goup	857	8	Australian SE	2,048
	...		9	Deutsche Borse	788			
14	Korea Exchange	1,105	10	Korea Exchange	783	9	Korea Exchange	1,779

I . Present Situation of Korea Capital Market Infra



■ Global standing of KRX

Derivatives Market(first half of 2013, Trading Value)

Total			Index Futures			Index Options		
Contracts(USD Mil)			Contracts(0.1 USD Mil)			Contracts(0.1 USD Mil)		
1	CME Group (including CBOT, NYMEX)	1,667	1	E-mini S&P 500	2,465	1	S&P CNX Nifty	4,304
2	NSE(India)	1,214	2	RTS	1,496	2	KOSPI200	2,995
3	Eurex(including ISE)	1,203	3	Euro Stoxx 50	1,462	3	Euro Stoxx50	1,205
4	NYSE Euronext	1,083	4	Nikkei 225 Mini	1,395	4	S&P 500	1,060
5	BM&FBovespa(Brazil)	900	5	CSI300	895	5	CBOE Volatility	730
6	Moscow Exchange	618	6	S&P CNX Nifty	352	6	BSE100	642
7	Nasdaq OMXGroup	605	7	E-mini Nasdaq 100	299	7	TAIEX	584
8	CBOE(including CFE, C2)	579	8	KOSPI200	270	8	Sensex	360
9	MCX(India)	552	9	Bovespa Mini	245	9	Nikkei 225	353
10	ICE	445	10	Nikkei 225	237	10	E-mini S&P 500	275
11	Korea Exchange	429						

I . Present Situation of Korea Capital Market Infra



■ Recent development in Korea capital market

Equity Market

- Due to the prolonged global economic slump, the trading value of KRX and number of IPOs dwindled

(Unit : Tril.)

		'10Yr	'11Yr	'12Yr	'13Yr*
KOSPI	Market Capitalization	1,141.90	1,042.00	1,154.30	1,128.2
	Number of Listed Companies	776	789	781	771.0
	Trading Value(Daily average)	5.6	6.9	4.8	4.0
KOSDAQ	Market Capitalization	98	106	109.1	120.1
	Number of Listed Companies	1,029	1,031	1,005	991.0
	Trading Value(Daily average)	1.9	2.3	2.1	2.0

* As of the end of August

I . Present Situation of Korea Capital Market Infra



■ Recent development in Korea capital market

Derivatives Market

- Due to ongoing effort of government in tightening of market regulations, the trading volume plunged

▶ Since 2011, the government has intensifies its regulation of capital market to reduce the risks associated with derivatives

(Unit : Contracts Mil)

		'10Yr	'11Yr	'12Yr	2Q '13Yr
Total		3,752	3,928	1,836	429
Representative Products	KOSPI200 Options	3,526	3,672	1,575	299
	KOSPI200 Futures	87	87	62	27

Decline of KRX's global standing : Trading volume ranked the World first in 2010 dropped to the 11th in 2013

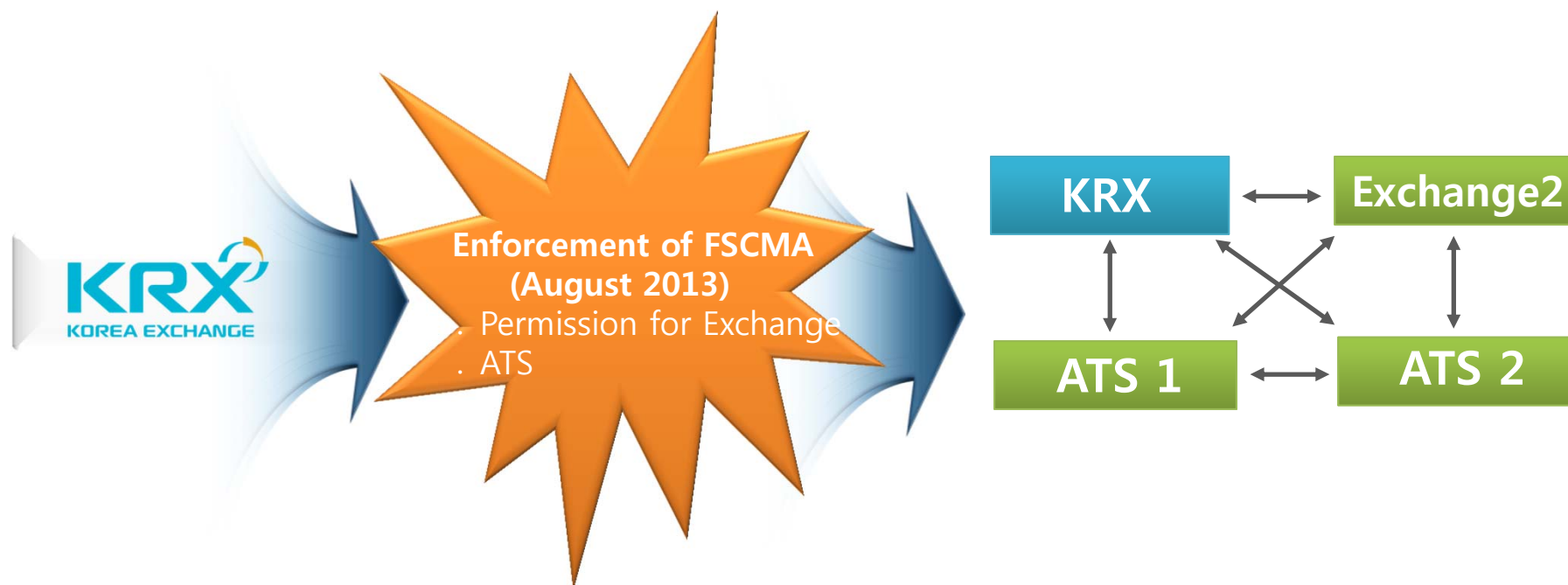


- || I . Present Situation of Korea Capital Market Infra
- || II. New Environment of Korea Capital Market
- || III. Plan to Develop Capital Market Infra

II. New Environment of Korea Capital Market

■ Era of competition

The Financial Investment Services and Capital Market Act("CMA") was revised in March 2013(effective in August 2013) to introduce the licensing system for exchange and allow the operation of alternative trading system("ATS")



II. New Environment of Korea Capital Market

■ Extended period of sluggish trading

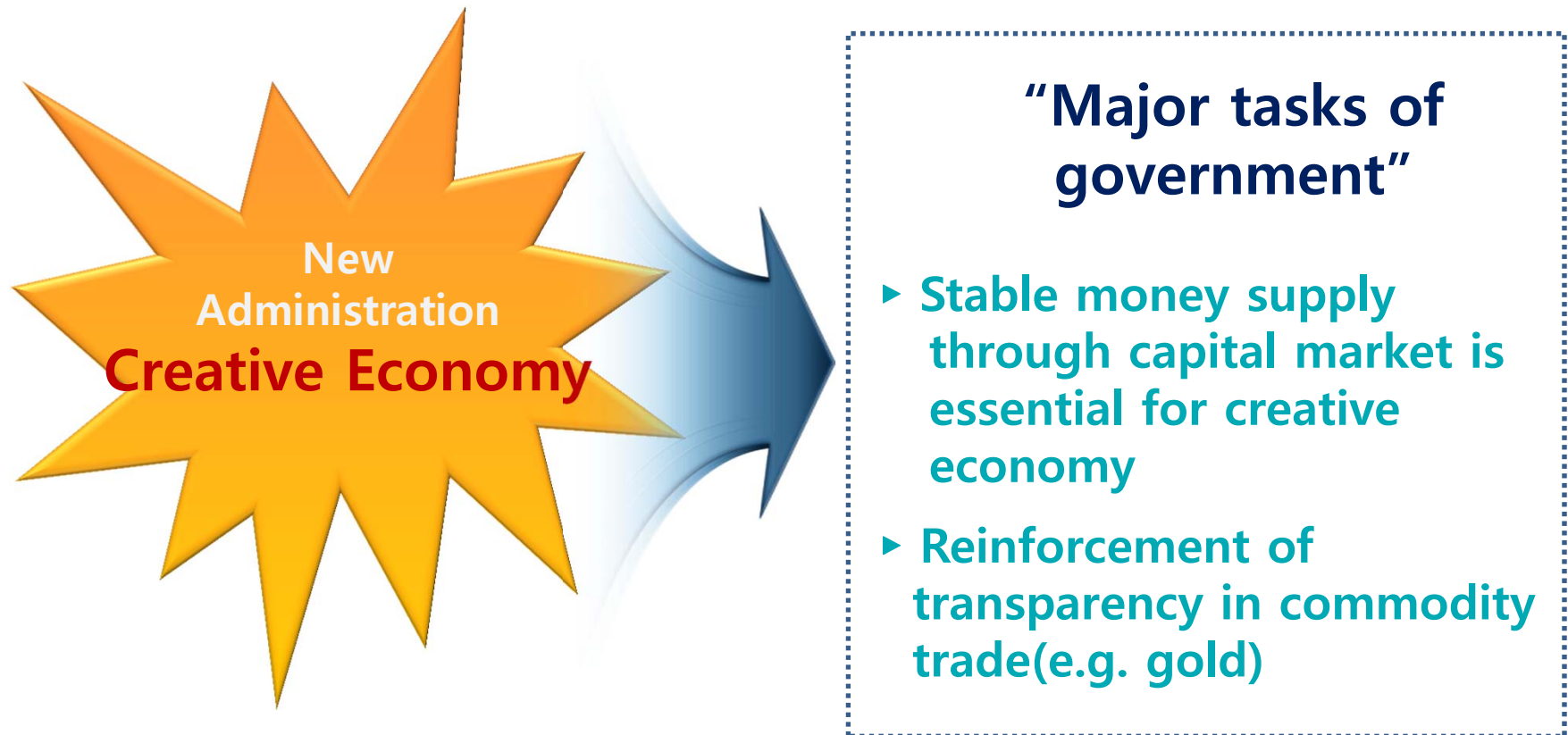
As the global economic slump continues, the trading dwindles considerably



II. New Environment of Korea Capital Market

■ Policy of incumbent government – Creative economy

Giving an importance to the function of capital market in supporting the real sector economy



II. New Environment of Korea Capital Market

■ Need for globalization

More M&As and expansion of size among the world exchanges

- ▶ It is difficult to become internationally competitive while operating as a local or national market.

1) Exchanges in advanced economies increase their market shares control through diversification and expansion

Expansion	<ul style="list-style-type: none">▶ Establishment of 24-hour trading platform ; realization of economy of size	<ul style="list-style-type: none">• NYSE + Euronext• LSE + Borsa Italiana• NASDAQ + OMX
Diversification	<ul style="list-style-type: none">▶ Acquisition of commodity exchanges, ATSs, and etc.	<ul style="list-style-type: none">• HKEx + LME* * London Metal Exchange• CME + NYMEX* * New York Mercantile Exchange• LSE + Turquoise* * ATS(Alternative Trading System)

II. New Environment of Korea Capital Market



■ Need for Globalization

2) Growing number of equity strategic alliance between the exchanges in advance economies and exchanges in Asia

▶ Threat of status of Korea capital market in Asia

- [NYSE Euronext] taking over 5% shares of NSE('07.1), MCX('08.6) in India
- [CME] taking over 5% shares of Bursa Malaysia('09), etc

▶ Exchanges in China, India :

Since 2007, the market capitalizations of exchanges in China and India are higher than that of KRX

Ranking of market capitalization(June, 2013):

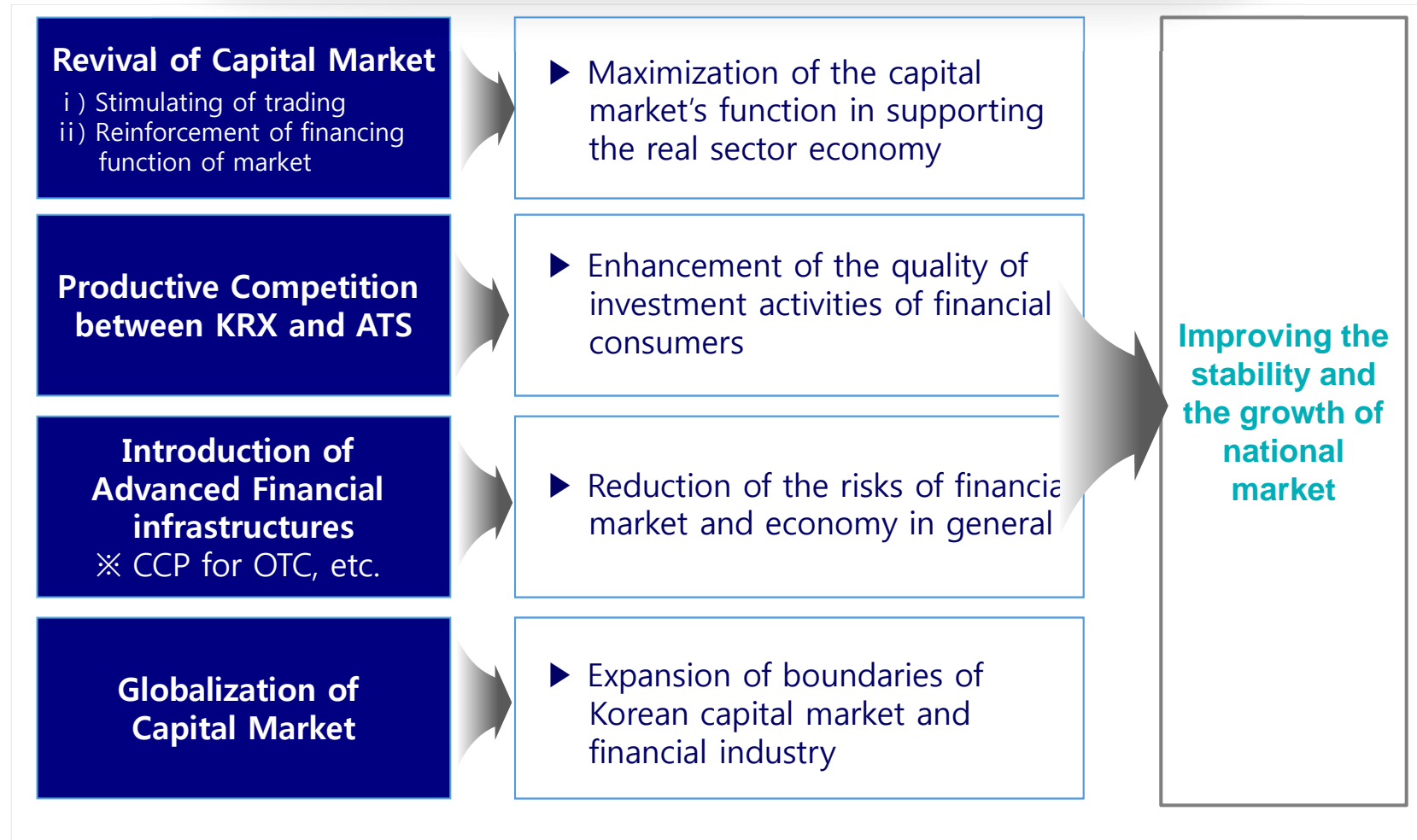
- SSE(No.7)>SZSE(No.12)>BSE(No.13)>NSE(No.14)>KRX(No.15)



- || I . Present Situation of Korea Capital Market Infra
- || II. New Environment of Korea Capital Market
- || III. Plan to Develop Capital Market Infra

Ⅲ. Plan to Develop Capital Market Infra

Basic Plan



Ⅲ. Plan to Develop Capital Market Infra

1. Revival of Capital Market

1-1. Stimulation of trading

■ Upgrading of trading regulations

- ✓ Introduction of Volatility Interruption(VI) per issue for stable price discovery in market
- ✓ Consideration for abolition or expansion of Daily Price Limit according to condition of market after introduction of VI
- ✓ Consideration given to relaxation of market regulations to stimulate trading in Derivatives Market

Ⅲ. Plan to Develop Capital Market Infra

Introduction of VI

Concept

- Temporary trading suspension(about 5 minutes) of concerned issue if the price of an issue fluctuates beyond the specified range
- Resumption of trading by way of Periodic call auction

Expected Effectiveness

- To protect the investors from drastic change of price
→ Securing stable investment demand
- To prevent the market shock caused by such incidences as and error in order submitted for algorithmic trading

Ⅲ. Plan to Develop Capital Market Infra

Tool for price stabilization of major exchanges in overseas

		VI	Daily Price Limits
Asia	Korea(KRX)	X	closing price of previous day $\pm 15\%$
	Japan(TSE)	O	fixed price(average 22%)
	Tiwan(TSEC)	O	closing price of previous day $\pm 7\%$
	China(SSE, SZSE)	X	closing price of previous day $\pm 10\%$
	Thailand(SET)	X	closing price of previous day $\pm 30\%$
	Malaysia(Bursa Malaysia)	X	closing price of previous day $\pm 30\%$
	Indonesia(JSX)	X	each price $\pm 20 \sim \pm 50\%$
	Philippines(PSE)	X	closing price of previous day $-40 \sim +50\%$
North America	U.S.(NYSE)	O	X
	Canada(TSX)	X	X
Europe	Euronext	O	X
	Spain(BME)	O	X
	German(Deutsche Börse)	O	X
	U.K.(LSE)	O	X

Ⅲ. Plan to Develop Capital Market Infra

Consideration for abolition or expansion of Daily Price Limits

Problem

- Prohibition of trading at price higher than the preset price and restriction of price movement
→ **Delay in speedy incorporation of market news and discovery of balanced price**
- Possibility of using the daily price limit for unfair trading, including accumulation of fake orders at upper/lower limit price

Next Step

- If the market volatility is stabilized after the introduction of VI per issue, the abolition or expansion of daily price limit will be considered in the medium or long term
- ※ **Several overseas exchanges has replaced the daily price limit with VI**

Ⅲ. Plan to Develop Capital Market Infra

Relaxation of regulations of Derivatives Market

Background

- As the suspicion about unfair trading of ELWs was raised in 2011, the regulations of Derivatives Market were tightened up or revised to curtail the speculative trading
 - ▶ Imposing basic deposit(KRW 15mil.) when trading ELW and options
 - ▶ Increasing tick size of KOSPO200 Options (KRW 0.1mil→0.5mil)

Impact

- Overheated trading of ELWs, etc. alleviated
- But, overall trading in the Derivatives Market became depressed
 - ▶ Trading volume : 3,752 Mil. contracts(2010) → 858 mil contracts (2013, prediction)* * trading volume in the first half of year × 2

Next Step

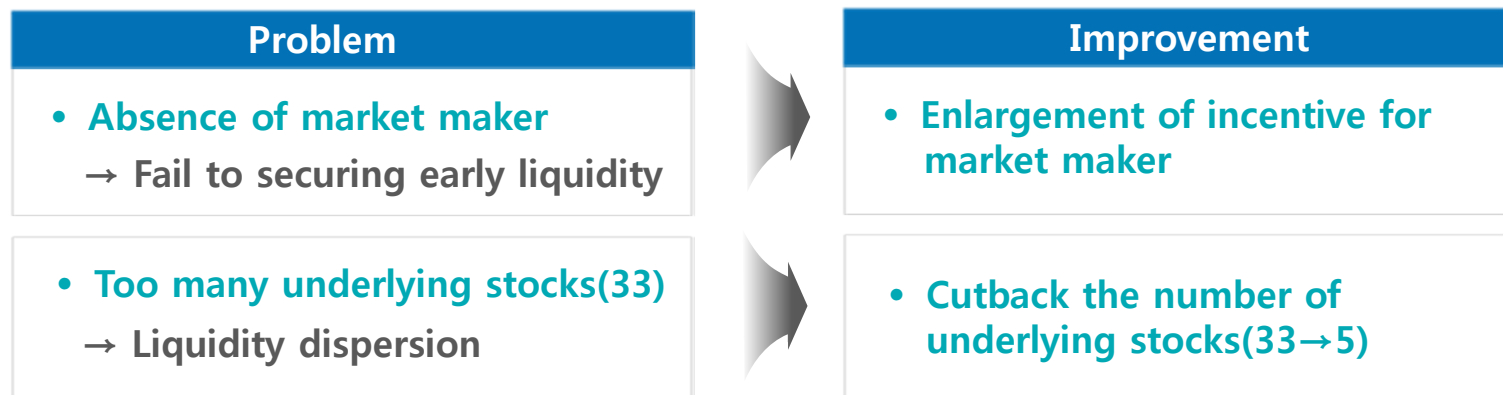
- It is necessary to recover the liquidity in Derivatives Market, by gradually easing the market regulation

Ⅲ. Plan to Develop Capital Market Infra

■ Timely development and introduction of new products

- ✓ Identification of existing products needing an improvement
→ Remodeling (creation of new demand)
- ✓ Identification of unavailable products for which there is market demand
→ Developing new products (satisfying demands)

Remodeling existing products(ex : Equity Options)



Ⅲ. Plan to Develop Capital Market Infra

New products development(ex : volatility Index Futures)

Product outline

- **Future using VKOSPI200 as underlying asset**
 - ▶ Risk management tool for Volatility

Cases in overseas

(Unit : Contracts)

Exchange	CFE(US)	EUREX(Ger)	HKEx(HK)	OSE(Jp)
Daily Trading Volume	95,000	15,000	below 100	

Market demands

- **Issuers derivatives linked securities(e.g., ELS) want products that can be used to hedge the market volatility**
 - ← In the past several years, the derivatives linked securities grew rapidly

III. Plan to Develop Capital Market Infra

■ Improvement of trading infrastructure (in medium & long term)

- ✓ **Consideration for introduction of trading infrastructure most suitable for new trading techniques such as HFT**

Existing policy

- **Focus on fairness in investors**
→ using only existing trading infra

Future development direction

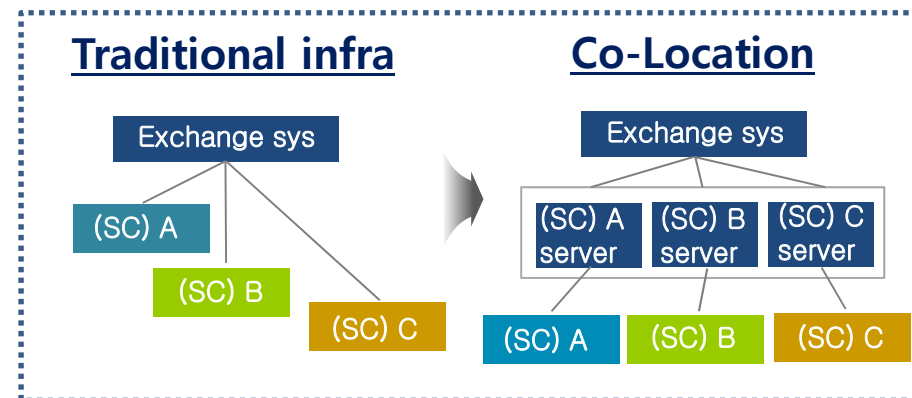
- **Satisfying diverse trading demands**
→ adopting DMA*, Co-Location
* Direct Market Access

※ Portion of HFT(estimated)

(US) over 40%, (EU) over 30%, (KR) within 3%(equities market), over 50%(derivatives)

Usefulness of Co-Location

- Improving latency drastically
By locating securities company
Server in the area nearby
exchange
→ Useful for algorithmic trading,
HFT, etc.



* (SC) = Securities Company

III. Plan to Develop Capital Market Infra

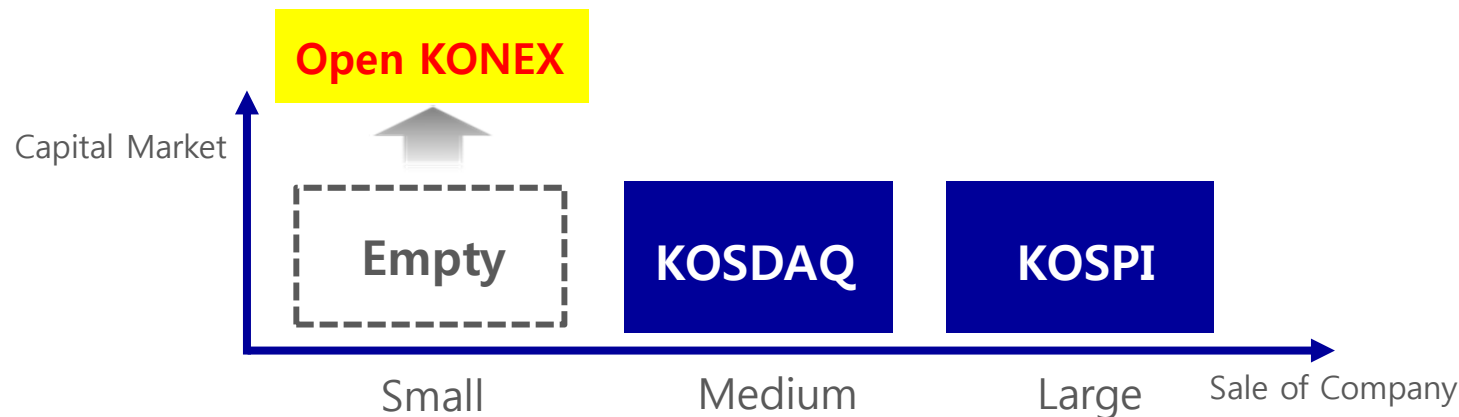
1-2. Improvement of financing function of market

■ Successful launching of KONEX Market

Background of opening KONEX market (July '13)

To meet the need for capital market that acts as a financing channel for start-up small and medium enterprises("SME")

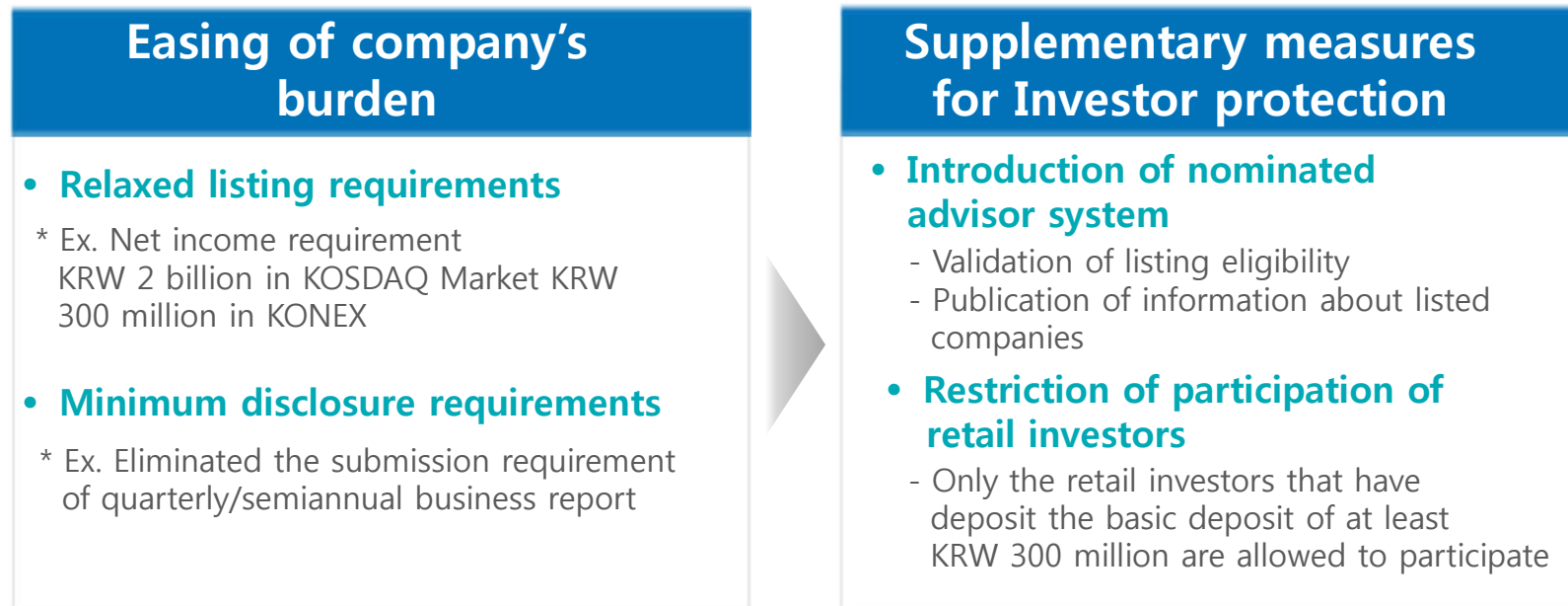
→ The start-up SMEs find it difficult to meet the listing requirements of KOSDAQ Market



※ As one of core projects of creative economy(key economic strategy of incumbent government), the government and public are very much interested in KONEX

III. Plan to Develop Capital Market Infra

Features of KONEX



Future Challenge

Identification and listing of eligible companies

* (start) 21 companies listed → (end of 2013) 50 companies will be listed

Ⅲ. Plan to Develop Capital Market Infra

■ Invigoration of IPO

Avoidance of IPO

- Companies eligible for listing shun IPO as the global economic slump continues

→ Financing through IPO has dropped drastically in the recent years

Amount raised through IPO

(Unit : KRW 0.1Bil.)

	'10	'11	'12	Half, '13
KOSPI	29,386	13,589	2,059	160
KOSDAQ	13,653	10,796	2,605	2,102
Total	43,039	24,385	4,664	2,262

Strategies for IPO Promotion

- To promote the KONEX-listed companies to transfer their listing to KOSDAQ Market
- To organize a listing promotion activity targeting unlisted blue chip companies
- To review and identify the reasons why the companies are reluctant to go public from scratch

→ Under operating T/F for improvement of regulation by FSC presidentially

Ⅲ. Plan to Develop Capital Market Infra

2. Development of securities trading infrastructure through practical competition between KRX and ATS

< Outline of ATS >

Concept

- Securities trading system that performs some of the functions of regulated exchanges, including order matching
- **ATS does not perform functions of SRO and clearing & settlement organization, including listing and market surveillance**

Progress Of Introduction

- To upgrade the infrastructure of Korean capital market, the discussion on the need for revision of the CMA began in February 2011
- In August 2013, the amended CMA, which include the provisions on introduction of exchange licensing system and ATS, was put into effect
- As a result, the monopolistic position of KRX ended and KRX must now compete with other trading systems such as ATS

III. Plan to Develop Capital Market Infra

Key point of revised CMA related to ATS

Limit of ownership	15% per shareholder * possible to exceed limitation in case of permission by FSC
Products allowed to trade	Listed stocks and DRs
Method of price decision	Competitive bidding or Closing price of exchange
Conversion into regulated exchange	If the trading volume of ATS exceeds the predetermined level, the concerned ATS must convert into a regulated exchange to protect the investors, etc • Conversion criteria : In case where ATS trading volume exceeds 5% of trading volume of existing exchange (over 10% per individual stock)
Clearing & Surveillance	The designated exchange(i.e., KRX) takes the responsibility for clearing and market surveillance ; the Korea Security Depository takes the responsibility for settlement
Best Execution Rule	All financial investment companies must comply with the best execution rule • The best execution rule requires the financial investment company to forward the investor's order to the market where the order will be treated most favorably

Ⅲ. Plan to Develop Capital Market Infra

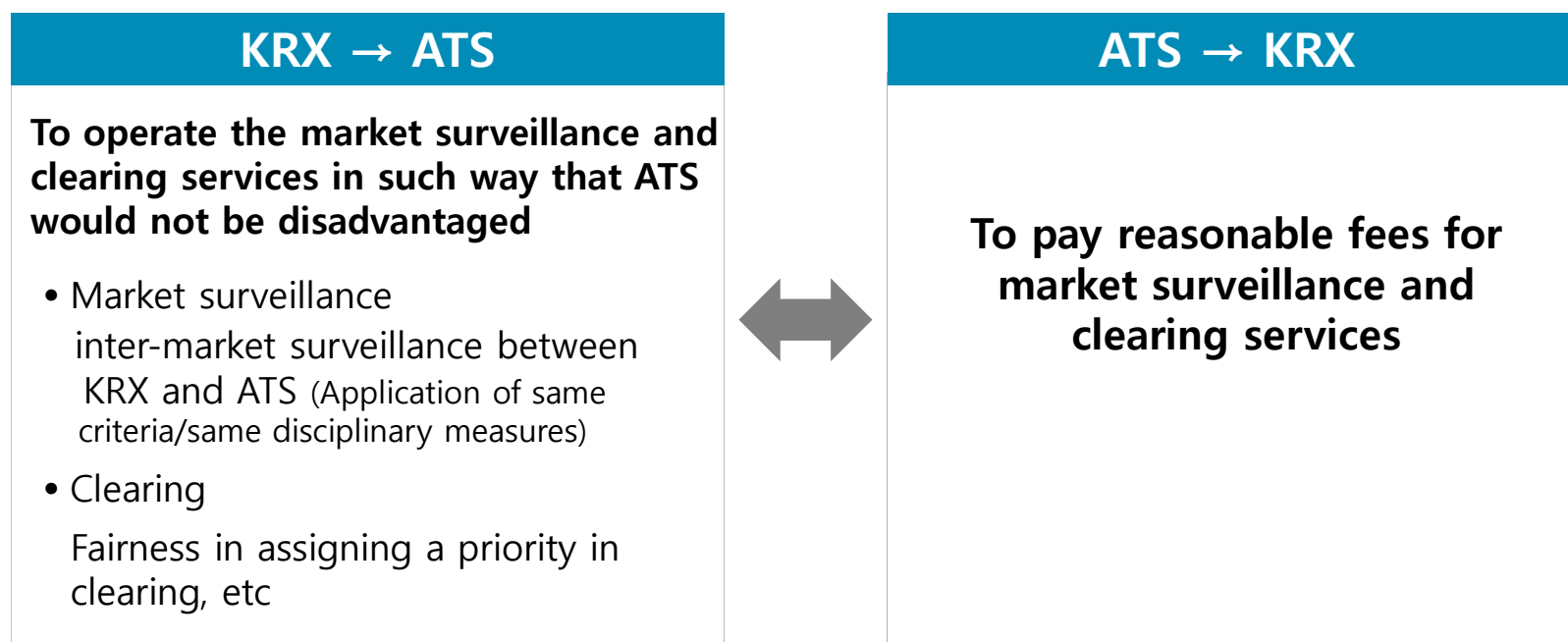
ATS in overseas

Location	Name	Establishment	Market Share (the first half 2013)	Remarks
U.S.	BATS	Jun.'05	11.10%	Converted into exchange (Aug. '10)
	Direct Edge	Oct.'05	10.40%	Converted into exchange (Jul. '10)
Canada	Chi-X Canada	Feb.'08	16.90%	subsidiary of Chi-X Global
	Alpha Exchange	Nov.'08	15.40%	Converted into exchange (Feb. '12)
Europe	BATS Chi-X Europe	Apr.'06	21.20%	Converted into exchange (May '13)
	Turquoise	Aug.'08	8.00%	acquired by LSE Group (Feb. '10)
Australia	Chi-X Australia	Apr.'11	11.80%	subsidiary of Chi-X Global
Japan	Chi-X Japan	Jul.'10	Total 4.8%	subsidiary of Chi-X Global
	SBI Japannext	Nov.'06		

III. Plan to Develop Capital Market Infra

- **Creating an environment for practical competition between KRX and ATS**

Fair operation of surveillance/clearing function

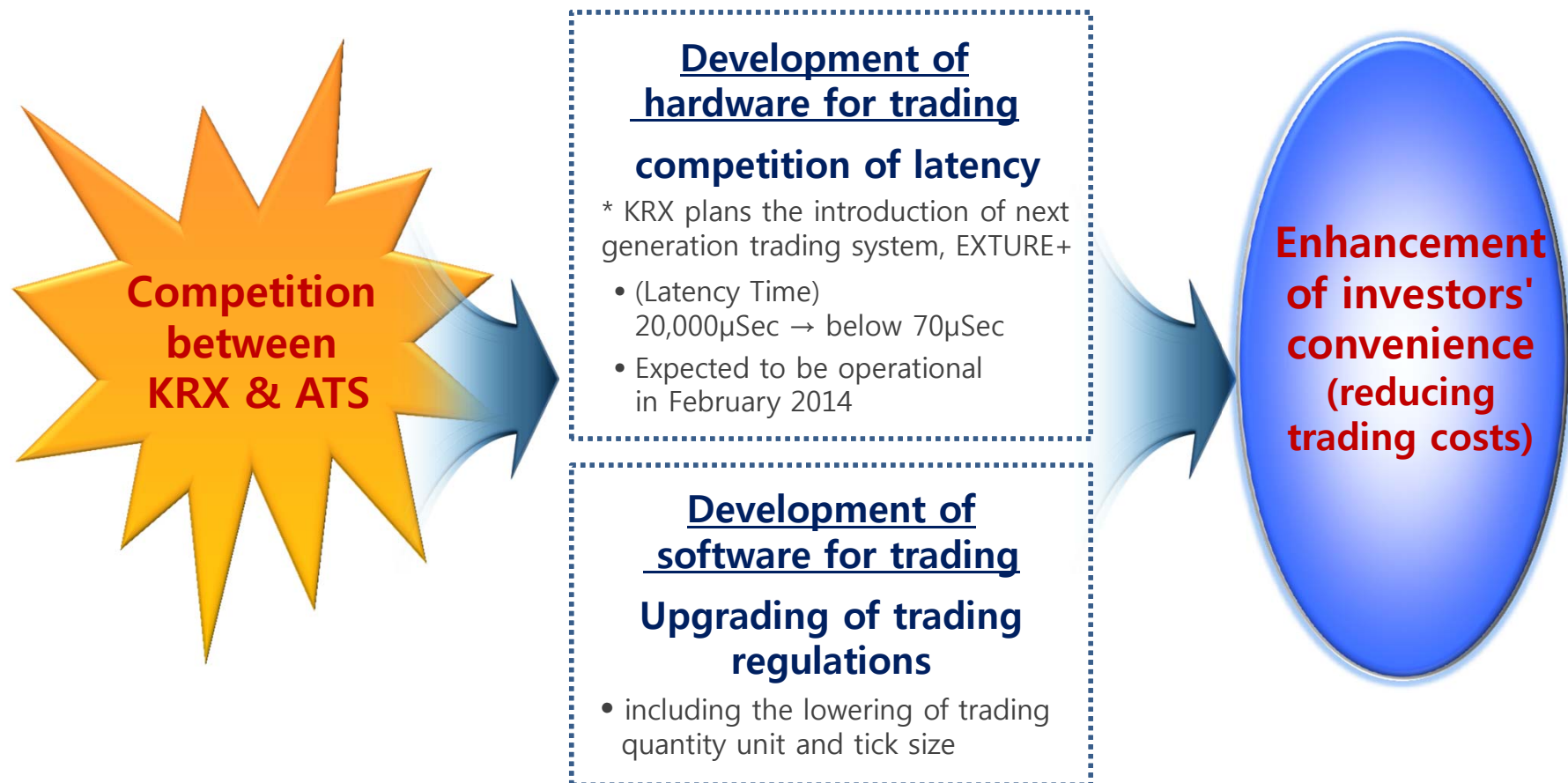


Establishment of rational best execution rule

It is necessary to establish a detailed best execution rule, which can reduce the transaction cost of investors

III. Plan to Develop Capital Market Infra

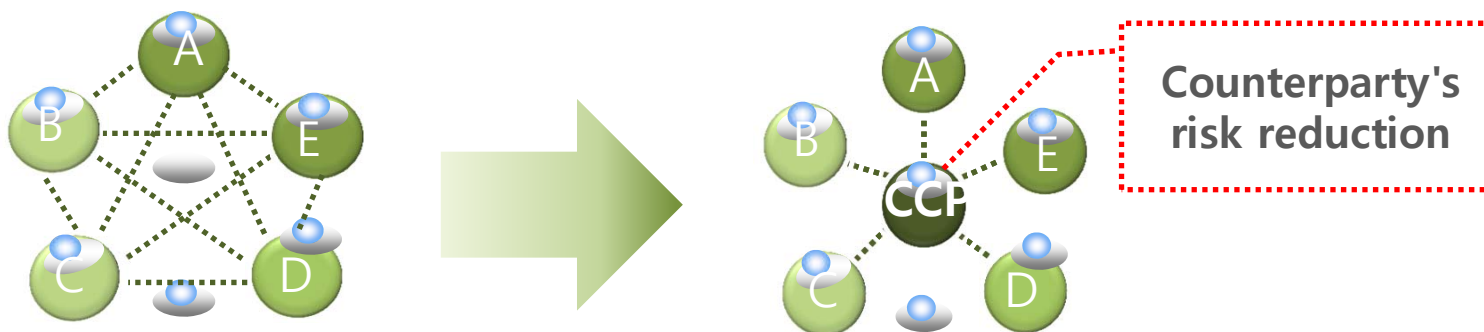
- Enhancement of investors' convenience through constructive competition



3. Adoption of Advanced Financial Infra

- Introduction of mandatory CCP services for OTC derivatives

Structure of services



Progress

- After global financial crisis of 2008, G20 agreed to introduce mandatory CCP services for OTC derivatives in 2009
- Enforcement of new FSCMA in July 2013
- KRX obtained the authorization to provide CCP services to OTC derivatives in September 2013

Ⅲ. Plan to Develop Capital Market Infra

Future action plan

< Step 1 > To begin CCP services for KRW IRS traded in OTC

※ KRW IRS : because of high degree of standardization, ease to design service structure

Voluntary clearing begins in December 2013; Mandatory clearing begins in June 2014

< Step 2 > Expansion of products for services (after second half of 2014)

Key factors considered : Clearing demand, degree of standardization, Global trend

▶ Target product : ① NDF, ② USD IRS, ③ CDS

- Trading volume of OTC in Korea :
KRW NDF > Foreign currency IRS > Foreign currency CDS
- Clearing services for NDF, USD IRS and CDS are provided by CME, LCH, HKEx, SGX, etc.

III. Plan to Develop Capital Market Infra

Global trend

Summary of implementation of CCP services for OTC derivatives agreed by G20

Completion of adoption	US, EU, Japan, Australia, India, Brazil, Argentina, etc.
Completion of legislation	Canada, Rep. of South Africa, Turkey, etc.
Under legislation	Swiss, China, Mexico, etc.
Delay * Due to the insignificant trading volume of OTC derivatives	Indonesia, Russia, Saudi Arabia, etc.

Summary of CCP services for OTC derivatives by Key CCPs

Clearing entity			Product for clearing
US		CME	. CDS('09)/Commodity('02)/IRS('10)/NDF('12)
EU	UK	LCH.Clearnet	. IRS('99)/CDS('10)/NDF('12)
Asia	Japan	JSCC	. CDS('11.7.19) . IRS/CDS('12)
	Singapore	SGX	. Commodity('06)/Shipping('06년)/IRS('10) . NDF(24, Oct. '11)
	Hong Kong	HKEx	. IRS/NDF('13)

III. Plan to Develop Capital Market Infra

■ (Mid/long-term plan) Opening Commodity Exchange

Concept

Trading of standardized commodities in regulated market by way of Competitive bidding

Necessity in Korea

i) To complement the commodity distribution system

- To improve the complicated and non-transparent distribution system of some commodities such as gold, raw material and agricultural produces

Gold : Tax evasion through illegal trading without tax invoice

Agricultural produce : complex distribution system, using many intermediaries

ii) To reduce the price fluctuation/volatility risk of imported raw materials and agricultural produces

- Stable supply through domestic exchange
- Hedging with derivatives products

III. Plan to Develop Capital Market Infra

Action plan

Presently, full scale introduction is difficult

← Deep-rooted customary transaction methods, lack of infrastructure
(for quality control, storage, etc)

**Presently, KRX is preparing to launch the cash Gold market
(scheduled to open in the first half of 2014)**

▶ After reviewing the effectiveness of cash gold market, the opening of commodity market will actively be considered

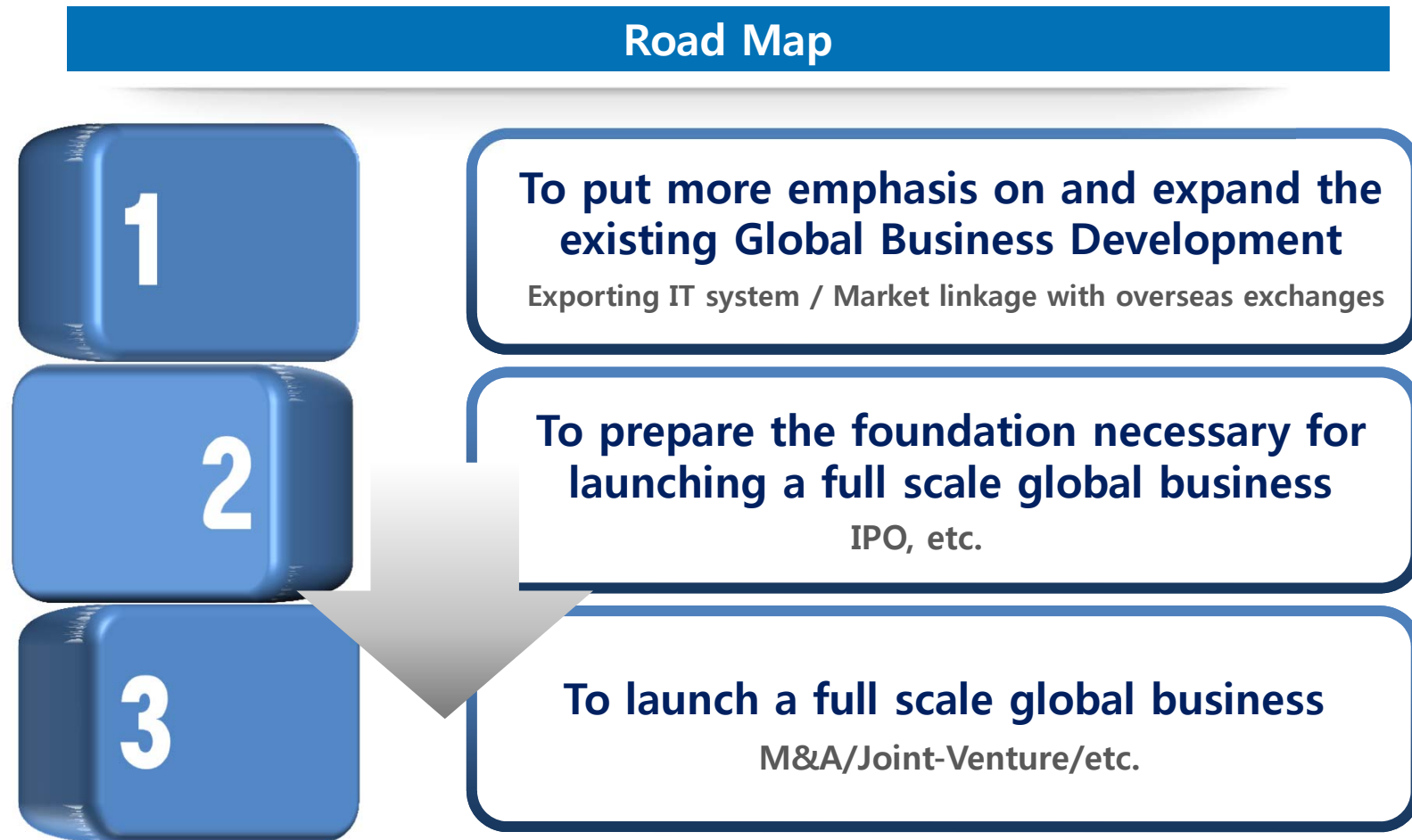
Commodity exchange in overseas

Exchange	Products
CME(US) (Chicago Mercantile Exchange)	agricultural products, oil, LNG, gold, silver, etc.
ICE(US) (InterContinental Exchange)	agricultural products, oil, LNG, etc.
LME(UK) (London Metal Exchange)	nonferrous metals
MCX(India) (Multi commodity Exchange)	metal, cotton, oil, LNG, etc.

Exchange	Products
TOCOM(Japan) (Tokyo Commodity Exchange)	gold, silver, oil, rubber, etc.
SHFE(China) (Shanghai Futures Exchange)	nonferrous metals, rubber, etc.
ZCE(China) (Zhengzhou Commodity Exchange)	agricultural products
DCE(China) (Dalian Commodity Exchange)	agricultural products

Ⅲ. Plan to Develop Capital Market Infra

4. Globalization of Capital Market



III. Plan to Develop Capital Market Infra

■ Expansion of international cooperation

Export of IT systems for securities exchange

Achievement

- Export of 11 systems to the exchanges in 5 Asian countries

Country	System to export	Period
Malaysia	Bond trading system	Jan. '07 ~ Feb. '12
Vietnam	Constructing next generation trading platform	Dec. '12 ~ '15
Philippine	Surveillance system, Disclosure system	May '11 ~ '14
Uzbekistan	Modernizing trading platform	Aug. '11 ~ '15
Thailand	Clearing & settlement system	Aug. '12 ~'14

- Establishment of Securities Exchange in Laos and Cambodia by entering into a joint venture

* **(Laos)** Established in Jul. '09(KRX's shares : 49%), Market opened in Jan. '11
(Cambodia) Established in Mar. '09(KRX's shares : 45%), Market opened in Apr. '12

Ⅲ. Plan to Develop Capital Market Infra

Ripple effect



Action plan

- To get more order for IT system development from countries in Asia
- To expand the target export region to Eastern Europe and Middle East

Ⅲ. Plan to Develop Capital Market Infra

■ Market linkage with overseas exchanges

Achievement so far

- Collaborative projects with CME and Eurex

Collaborating exchange	Products	Open
CME	KOSPI200 Futures	Nov. '09
EUREX	KOSPI200 Options	Aug. '10

→ Trading volume grew over 30 times since the trading began

* Trading volume(daily average) : 5,747 contracts ('10) → 161,020 contracts ('12)

Action plan

- Collaboration with CME for trading USD futures on Globex platform('14)
- Listing of futures and options using overseas indices as underlying asset on KRX market

III. Plan to Develop Capital Market Infra

■ Preparation of foundation necessary for global business

• IPO of KRX

- **Need to reform the corporate governance structure through IPO before initiating such activities as M&A and acquisition of equities of other exchanges**

Almost global top 15(in market capitalization) exchanges completed IPO

※ **Only Korea, China and India : under unlisted condition**

- **IPO is necessary to raise the fund required to compete with ATS**

• **Need for flexible organizational structure that is suitable for business diversification**

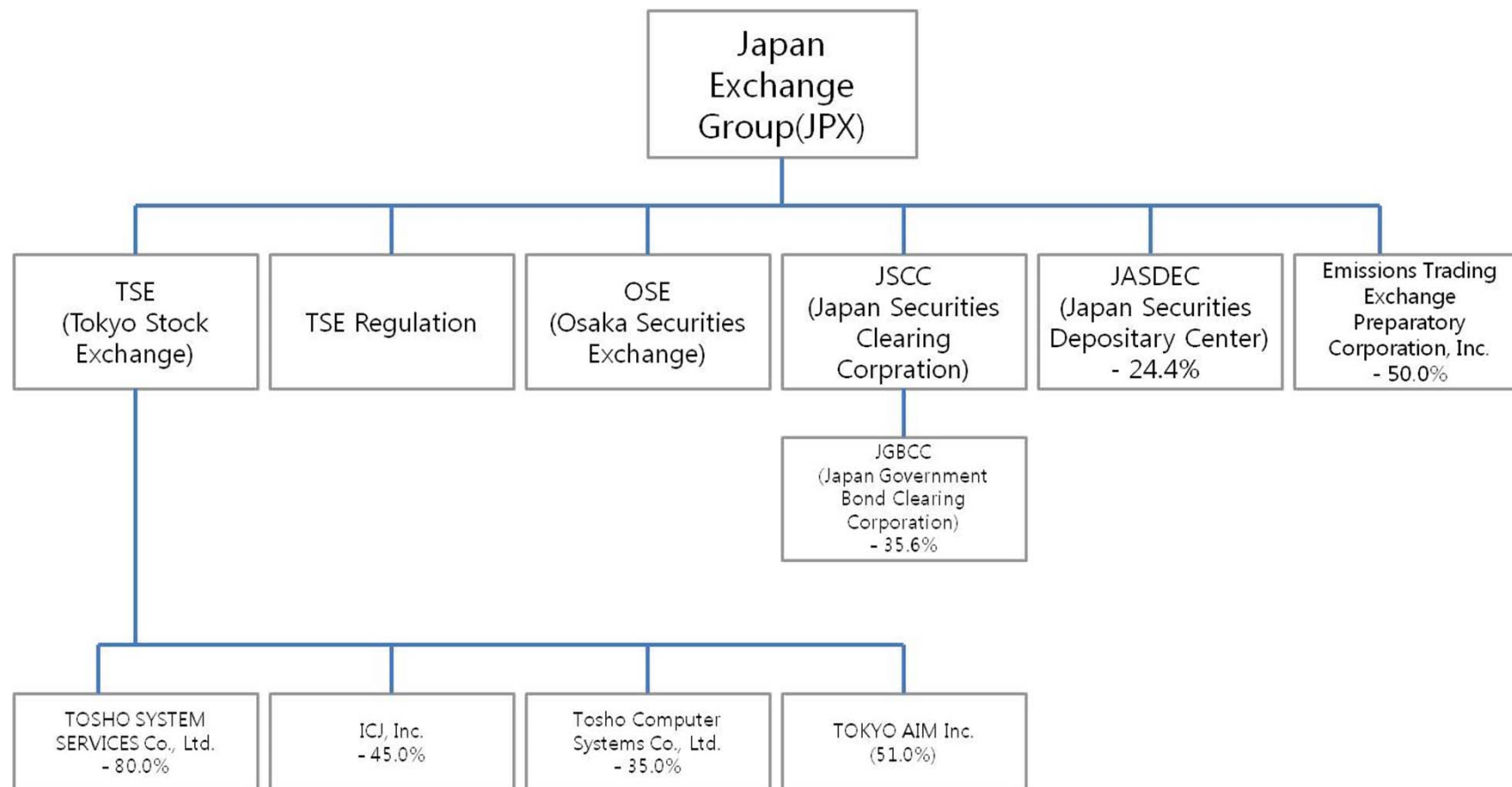
- **Alternative : Holding company that can easily diversify its business through a subsidiary**

Many world exchanges have adopted a holding company system

※ NYSE Euronext, LSE, DB, HKEx, JPX, etc.

Ⅲ. Plan to Develop Capital Market Infra

※ Case of Japan Exchange(JPX) Group



III. Plan to Develop Capital Market Infra

■ Launching full scale global business

Scenarios for KRX's global business



Thank You

