



Bond Markets in Korea and KOFIA's Role

July 2009

Han-Gu Lee

Fixed Income Dept.

Korea Financial Investment Association



I. Current status of the Korean bond markets

II. Bond market surveillance & SRO

III. Information dissemination & transparency

IV. Products innovation and development

Appendix 1. KOFIA's Initiatives for the bond markets

2. Bond Markets Indices



I. Current Status of the Korean Bond Markets

1. Primary Market

2. Secondary Market

3. Foreign Investment in the Bond Market

4. State of Bond Market Systems

1) Primary Dealer

2) IDB (Inter-Dealer Broker)

3) Repo

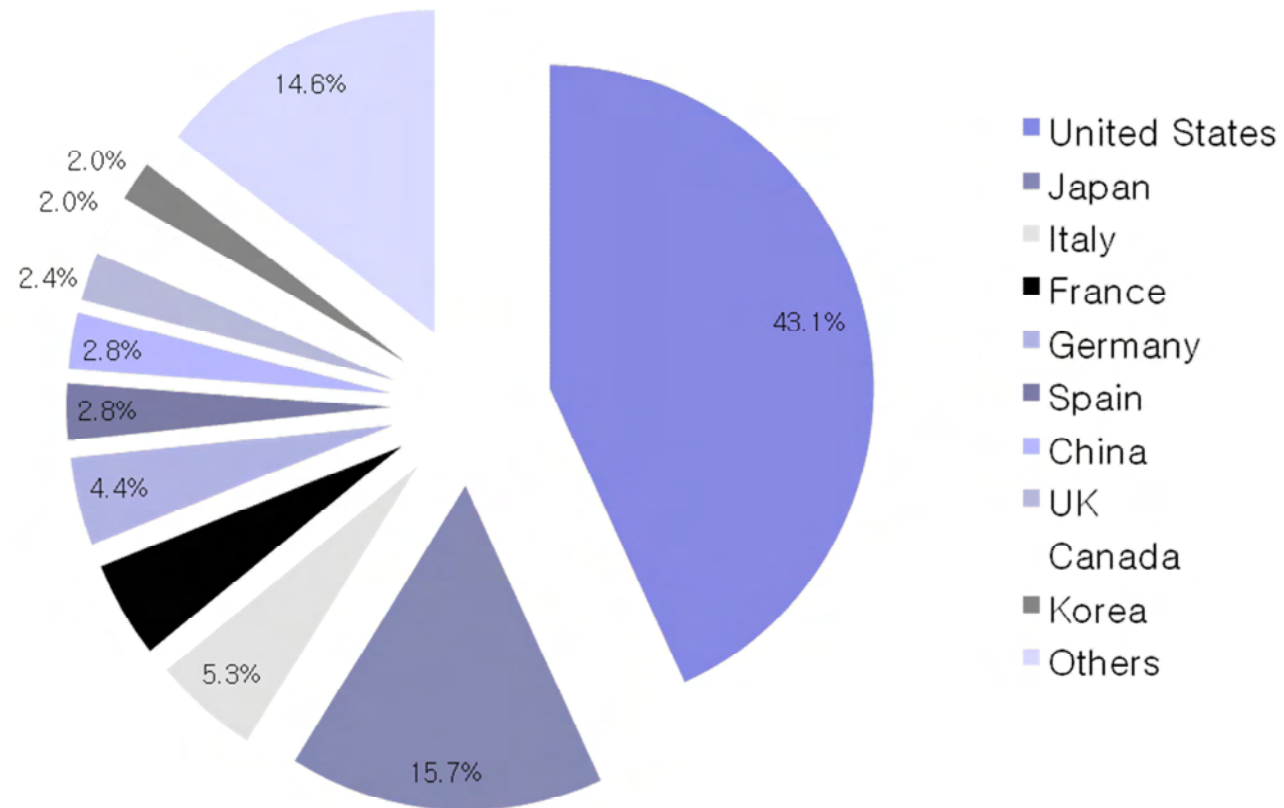
4) Bond Lending & Borrowing

5) Bond Valuation System

6) Credit Rating System



- Top ten local currency bond markets.(as of September 2007)



Source : BIS(Reprinted in Dalla and Yoo(KOFIA))



Category	Economic Changes Since the Crisis	Changes in Bond Markets
Interest Rates	Corporate debt ratio greatly reduced	<ul style="list-style-type: none"> • Interest rates lowered. (Analyzing factors geared towards low interest rates)
	Capital markets opened & financial factors synchronized	<ul style="list-style-type: none"> ▪ Deepening synchronization with international rates
Government Bond Market (Primary/Secondary Markets)	Fiscal deficit widened & public funds injected	<ul style="list-style-type: none"> ▪ Issuance of gov't bonds & gov't guaranteed bonds increased ▪ Gov't bond market becomes center of bond trading ▪ Auction market for gov't bonds opened
Corporate Bond Market	Financial institutions' NPLs settled	<ul style="list-style-type: none"> ▪ ABO & CBO market promoted
	Daewoo, Hyundai, & SKG scandals	<ul style="list-style-type: none"> ▪ Corporate bond market contracted. ▪ ABS market expanded
	Need for eliminating systemic risk factors (Distribution of risk & prevention of risk concentration)	<ul style="list-style-type: none"> ▪ Non-guaranteed bond market opened ▪ Mark-to-market valuation initiated
Bond Market Reform	IMF, IBRD funds injected & market reform	<ul style="list-style-type: none"> ▪ World Bank put pressure on the bond market to reform
Introduction and Vitalization of Derivatives	Fiercer yield competition (mark-to-market & low interest rates). Market more concentrated on government bonds	<ul style="list-style-type: none"> ▪ Gov't bond futures, IRS, & CRS markets strengthened ▪ ELF, ELS
Financial Market Changes	Bank, Daewoo & SKG Group crises	<ul style="list-style-type: none"> ▪ Rapid transfer of large funds (Bank->Investment Trust->Bank ->Investment Trust...)

1. Primary Market : Bond Issuance in Korea

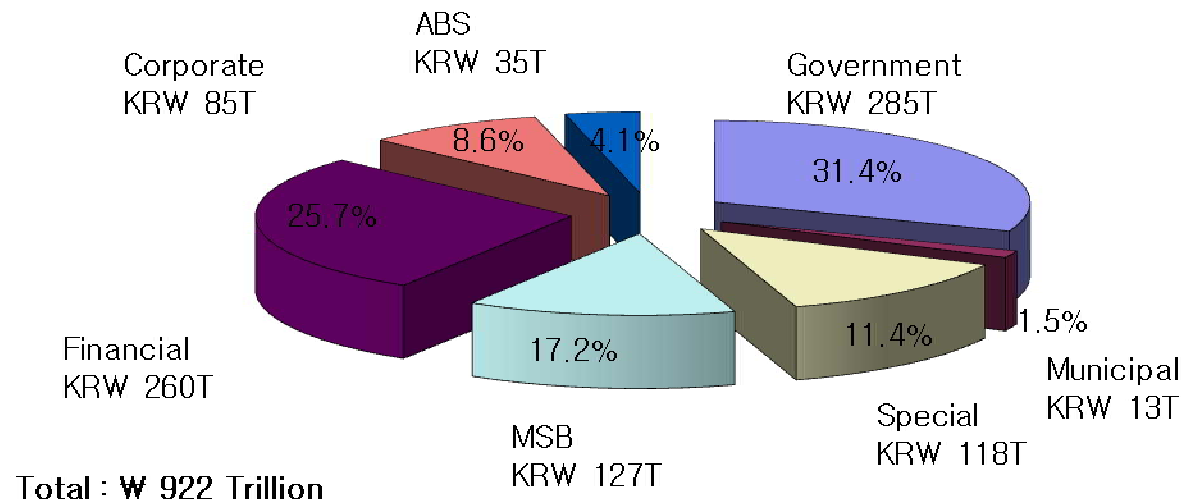


Bond Markets in Korea &
KOFIA's Role

- The proportion of **government bond issuance increased greatly (15% → 31%)**
- While the proportion of special bonds (20% → 12%) and corporate bonds (21% → 9%) decreased

Korean Outstanding Bond Market

As of Dec.31 2008



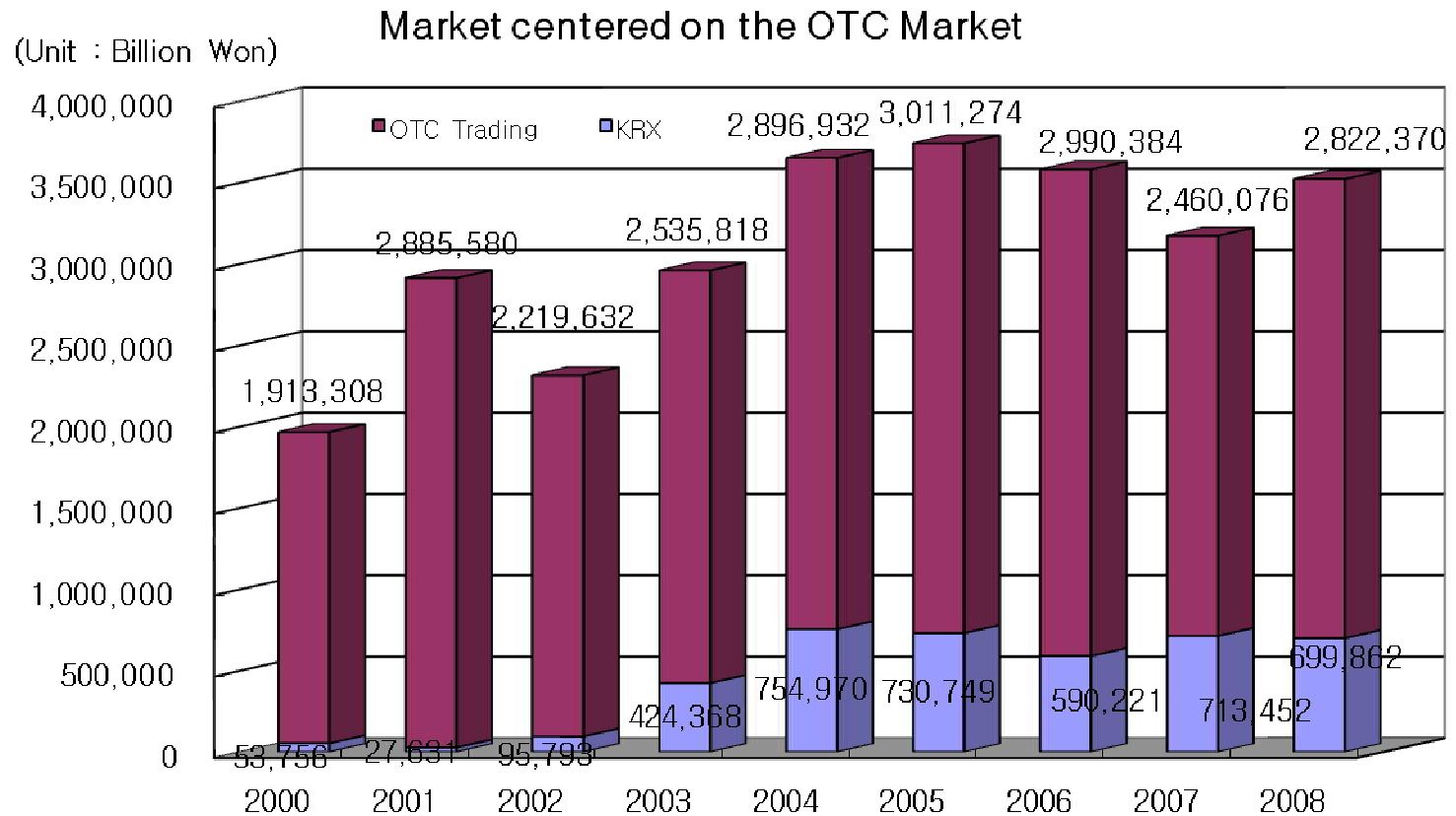
Source : KSD, KRX, KSDA, KIS

2. Secondary Market : Trends in Bond Trading



Bond Markets in Korea & KOFIA's Role

- Most bonds used to be traded on the OTC markets. With the increase in primary dealer trading (KTS), trading on regular exchanges has grown from 2.7% to 19.8%



Source : KOFIA, KRX



Exchanges (KRX)

- The markets of the Korea Exchange (KRX) consist of the KTS and the Ordinary Bond Market
 - **Korea Treasury Bond Trading System (KTS)**
 - The Electronic Trading System (ETS) was established by the KRX in March 1999, with the aim of supporting competitive bidding between primary dealers.
 - Ordinary Bond Market
 - Market for listed bonds other than government bonds; most bonds traded on this market are issued for specific purposes.

OTC Market

- Markets other than the regular exchanges
 - Trading on the OTC market is either one-to-one or Inter-Dealer Broker (IDB).
 - One-to-one
 - Brokers exchange bid/ask quotations simultaneously over **online messengers -> Bid/Ask spread for benchmark issues has been reduced to 0.5bp, enhancing efficiency.**
 - **Inter-Dealer Broker (IDB)**
 - IDBs are brokerage firms specializing in bond trading who do not hold bonds and only intermediate trading between dealers. Currently, KIDB and KMB carry out this function.



	OTC Markets		Exchanges (KRX)	
	Broker	IDB	Ordinary Market	KTS
Trading Party	No restrictions	Dealers, Institutional Investors, Funds, and Mutual Funds	KRX Members	PD
Trading Broker	Securities Co.	IDB	KRX	KRX
Main Trading Item	All bonds	All bonds	Small-amount government bonds & equity-linked corporate bonds	Treasury bonds
Trading Method	Negotiated trading	Negotiated trading	Competitive auction	Competitive auction
Trading Hours	No limit, but usually 09:00~15:30	No limit, but usually 09:00~15:30	09:00~15:00	09:00~15:00
Settlement Day	Next day	Next day	Same day	Next day
Trading Unit	No set amount, but usually 10B won	No set amount, but usually 10B won	Small-amount government bonds: \1,000 Others: \100,000	1B won

OTC Markets : Messenger



Bond Markets in Korea & KOFIA's Role

- Almost every broker and dealer uses MSN messenger

The screenshot displays three overlapping MSN Messenger windows. The top-left window is titled 'KimYounggyu (bonddaesa) - 인스턴트 메세지' and shows a chat history with messages from 8:57:11 AM to 9:47:25 AM. The top-right window is titled '박상준 (park111727) - 인스턴트 메세지' and shows a chat history from 3:02:15 PM to 3:12:45 PM. The bottom window is titled 'ahn33333 - 인스턴트 메세지' and shows a chat history from 2:31:22 PM to 3:30:43 PM. On the right side, there is a contact list for '호가집중 (10/11)' with various names and phone numbers. The system clock in the top right corner shows '2007-03-28 WED(水) PM 03:40:24'.



- ❑ **With the complete opening of the bond market in July 1998** and regulatory reforms since the Asian financial crisis, the investment environment for foreigners has improved greatly, but **foreigners' participation in bond markets is not yet very active.**
- ✓ **This inactive spot investment can be attributed to low liquidity, tax considerations and the availability of derivatives, including interest rate futures and IRS.**

<Foreign Investment in Korean Equity and Bond>

(Unit: KRW Trillion, %)

	2006	2007	2008
Equity	262.5	308.0	166.9
	(37.3)	(32.4)	(28.9)
Bond	4.6	36.9	37.9
	(0.6)	(4.45)	(4.38)
Total	267.1	344.9	204.8

Note : Foreigners' ownership is in parentheses
Source : Financial Supervisory Service (FSS)



<Evolution of Bond Market Liberalization>

Category			1994	1997					1998			
			7.1	1.3	6.2	11.17	12.12	12.23	12.30	5.25	7.1	
CORPORATE BONDS	SME	General	X	X	Total 50%	⇒	Ceiling abolished					
		CB	Total 30% (5% per person)	Total 50% (10% per person)	⇒	⇒	Ceiling abolished					
		BW EB	X	X	X	Total 50% (10% per person)	Ceiling abolished					
		Guaranteed	-	X	X	X	Total 30% (10% per person)	Total 30%	Ceiling abolished			
	LC	General	X	X	X	X	Total 30%	Total 30%	Ceiling abolished			
		CB	X	X	Total 30% (6% per person)	X	(10% per person)	Total 50%	Ceiling abolished			
		BW EB	X	X	X	X	Total 30%	Total 50%	Ceiling abolished			
		Guaranteed	-	X	X	X	(10% per person)	Total 30%	Ceiling abolished			
	Gov't bonds, Special bonds			X	X	X	X	X	Total 30%	Ceiling abolished		
	Listed bonds in OTC market			X	X	X	X	X	X	X	Investment allowed	
RP trading			X	X	X	X	X	X	X	Investment allowed		
Unlisted bonds			X	X	X	X	X	X	X	X	Investment allowed	

Source : Financial Supervisory Service (FSS)



- ❑ Implemented a Government Bond Syndicate System in Nov. 1993-> Shifted to **Primary Dealer System in July 1999**
- ✓ **PDs are Government Bond Dealers required to act as market makers in the Secondary Market in return for being provided with preferential rights on underwriting Gov't bond in the Primary Market.**
- ✓ Up to 1999, the Government Bond Syndicate consisted of 102 institutions including banks, securities firms, etc which determined coupon rates by participating in competitive biddings. Then, after the foreign currency crisis, the PD system was introduced to meet the large volume of issuances of Gov't bonds
- ✓ **Primary dealers are selected annually based on their underwriting performance, and selected primary dealers are provided with a set of privileges and obligations**
- ✓ Currently, **total 19 financial institutions (9 banks and 10 securities firms)** are designated as PDs based on the financial capacity of banks and the brokerage capacity of securities firms

2) IDB(Inter-Dealer Broker)



- IDB Market was introduced to **resolve dealer's bond surplus & shortage issues (June 2000)**
 - ✓ Currently, two IDBs including KIDB & KMB are in operation
 - ✓ IDBs are bond brokerage firms which specializes in brokering inter-dealer trade through electronic screens, without actually holding bonds

- Currently, IDBs are unable to perform their original function, instead, they execute the brokerage operations of securities firms
 - ✓ Since July 2002, the operation scope has expanded from inter-dealer brokerage to institutional investor brokerage

<Trend of IDB transactions >

(unit : KRW trillion, %)

Category	2000	2001	2002	2003	2004	2005	2006	2007
IDB transaction	49.9	91.7	63.2	63.6	68.9	84.4	69.4	77.9
Proportion	(2.6)	(3.2)	(2.7)	(2.1)	(1.9)	(2.8)	(2.3)	(3.2)
OTC	1,914.1	2,887.0	2,219.9	2,536.3	2,897.4	3,010.8	2,990.3	2,460.0

3) Repo



- ❑ Repo refers to selling/buying bonds by agreeing to repurchase (resell) them at a specific time in the future
- ✓ Repo transactions are divided into **retail market repo and inter-institution repo, and there is the repo market established (Feb 2002) by the Korea Exchange**
- ✓ The size of **domestic repo market is about 62.4 TN won (as of the end of April), with retail repo taking up 98% of total transactions**
- ✓ In order for repo transactions to perform their original function, an inter-institution repo market should be facilitated, however the current market is largely concentrated on retail transactions
- ✓ The main causes of inactive repo transactions are call money concentrated trading practices, buy & hold based bonds investments, etc

< Trend of Repo transactions >

(unit : KRW trillion)

Category	2001	2002	2003	2004	2005	2006	2007	2008
Retail	28.2	34.2	36.3	31.8	41.1	57.3	66.0	62.4
Inter-institution	4.1	2.7	3.1	2.9	2.6	na	na	na
KRX	-	-	0.4	0.1	na	na	na	na

Source : KOFIA, KRX, KDS

4) Bond Lending & Borrowing



- Bonds eligible for lending & borrowing operations are usually debt instruments for repo trading, arbitrage trading (between spots and futures) and bonds provided as collateral
- ✓ Main lenders are pension funds, insurers, banks, etc, while borrowers are securities firms, foreign investors, etc. Lending & borrowing transactions are brokered by the **Korea Securities Depository (KSD), Korea Securities Finance Corp (KSF) and Sec. Firms.**
- ✓ The balance of this transaction, as of the end of Jan 2006, posted around 1.1 TN won, approximately a 55% decrease in comparison to the 2nd half of year 2005

<Trend of Bond Lending & Borrowing transaction>

(unit : 100 MM won)

Category	2002	2003	2004	2005
KSD	492	372	35,750	151,969
KSF	1,800	26,056	37,430	109,694
Total	2,292	26,428	73,180	261,663

Source : KSD, KSF

5) Bond Valuation System



- ❑ The bond valuation (pricing) system was introduced for the first time in Korea (Nov. 1998)
 - ✓ As with stock price, the price of a bond changes daily according to the market rate. Accordingly, **bond valuation is needed to calculate the bond's value, which changes every day, as a market price or a fair price**
 - ✓ After the foreign currency crisis, the government introduced the bond valuation system to ensure the transparency and credibility in the operation of trusted assets, and to improve the asset quality of financial institutions
 - ✓ **The Korea Financial Investment Association (KOFIA) performs Matrix Table based valuations on a daily basis**
- ❑ 3 Private Bond Valuation (Pricing) Agencies were established (June 2000)
 - ✓ Improves the effectiveness of risk management through the “mark to market” approach by providing market prices for all bonds held by financial institutions
 - ✓ **Uses available bond prices from bond valuation agencies by all financial institution**
 - Provides pricing information, for an average of 15,000 bonds, ELS, SWP and foreign bonds, etc

<State of Bond Pricing Agency>

Company	KIS Pricing	KBP	NICE Pricing
Paid-in capital	3 BN won	5 BN won	65.5 BN won
No.of employees	About 70	About 100	About 60
Top shareholder	KIS	KR	NICE

6) Credit Rating System



- ❑ The credit Rating System is the evaluation of the likelihood that the principal/interest of obligations or a certain marketable securities are repaid in accordance with agreements, and the evaluation results are disclosed to interested parties including investors, financial institutions, etc
- ❑ Unlike that of advanced markets, the domestic credit rating market is essentially based on regulations and systems
- ✓ 1985.09 : **Introduced Commercial Paper Credit Rating system (used as criteria for selecting eligible CP issuers)**
- ✓ 1994.07 : **Introduced multiple rating (commercial paper, corporate bonds) system**
- ✓ 1997.09 : Obligated the rating of credit specialized institutions, Securities firms (July), Merchant banks
- ✓ 1999.01: Obligated the rating of bank bonds, guarantee institution, special bonds & ABS
- ✓ 1999.12 : Shortened validity period of credit rating of non-guaranteed bonds (6 months->3 months)
- ✓ 2001.03 : Amended 'Use and Protection of Credit Information Act' (moved from selection approach -> permission)

<State of Credit Rating Agencies>

Category	KIS	KR	NICE	SCI
Established	1985.2.26	1983.12.29	1986.9.11	1992.4.23
Rating service commenced	1985.9	1987.11	1987.6	2000.1
Types of bonds rated	All types of bonds	All types of bonds	All types of bonds	CP, ABS
Paid-in capital	5 BN won	24.3 BN won	23.7 BN won	13.7 BN won
Business-alliance	Moody's (1998.8.18)	Fitch (1999.1.20)	R&I (2000.4.25)	JCR (2000.5)



II. Bond markets surveillance & SRO

1. B-TRiS(Bond-Trade Report & Information Service)

2. Centralization & Disclosure of OTC Quotation

3. Monitoring of Bond Valuation Agencies

4. Investor Protection

- *Regulation on Business and Operation of Financial Investment Companies, and its Enforcement Bylaws*
(<http://www.KOFIA.or.kr/>)



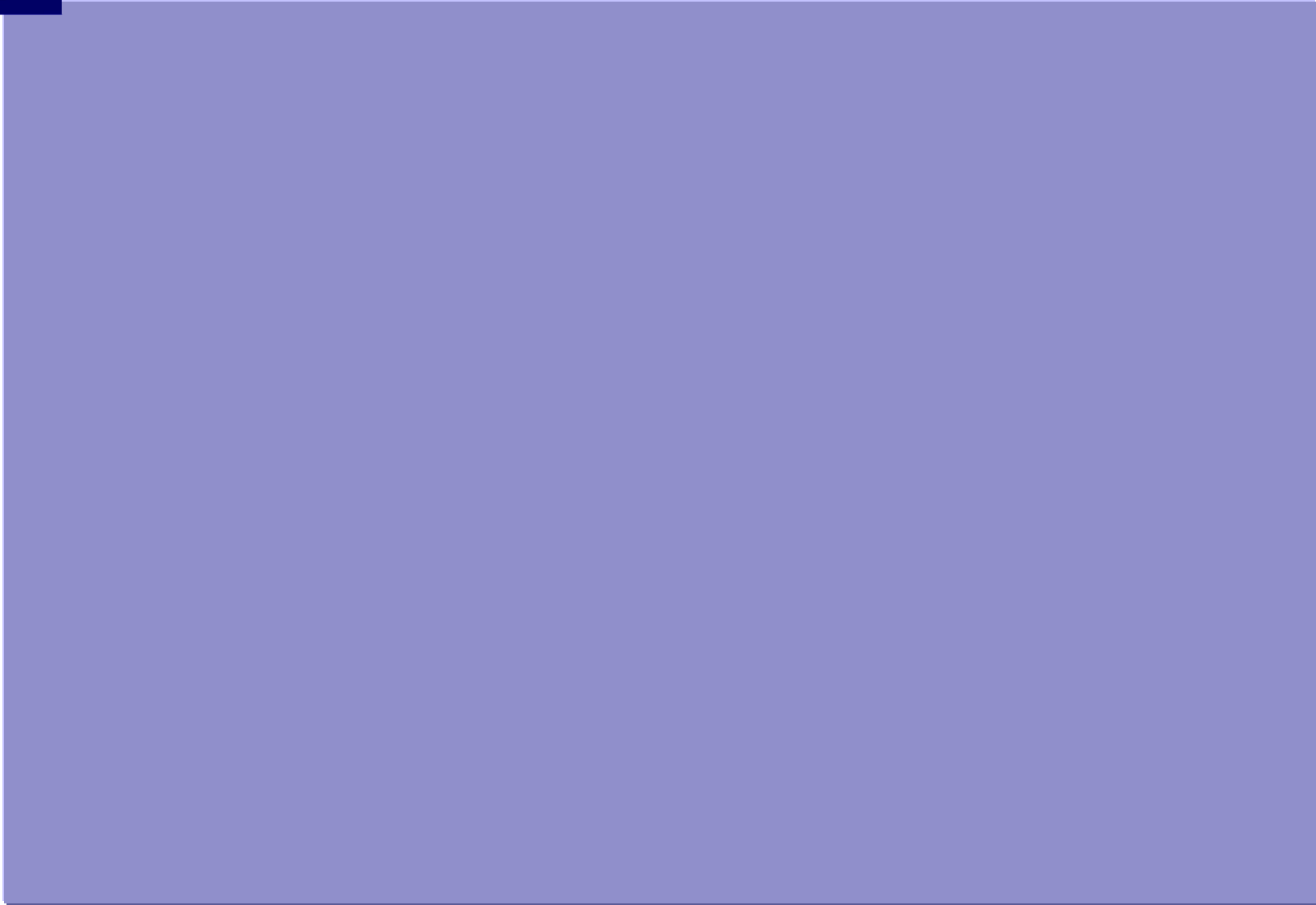
1. B-TRiS(Bond-Trade Report & Information Service)

- ❑ Starting from December 2002, securities firms have been required to report trading details to the KOFIA **within 15 minutes after trading execution** (within 30 min. from July 2000, and 5 min. from July 2001) and the KOFIA discloses this information on its website (www.KOFIAbond.or.kr) and Information vendor (CHECK, Bloomberg etc).
- ✓ Disclosed Information : Name of firm, Branch number, Buy or sell, Counter-party in trading, Issue number, Trading unit price, and Trading type (self-account, cross trading, or brokerage)
- ✓ **More than 3,000 daily disclosures on average, worth 10T ~ 20T won** in trading value.
- ✓ Regulation : *Regulation on Business and Operation of Financial Investment Companies, and its Enforcement Bylaws*
- ✓ Function : Enhancement of transparency in OTC bond trading
- ✓ Similar to the US central trading system for IDB bonds, **GovPX**, and the system for corporate bond price transparency, the Trade Reporting And Compliance Engine(**TRACE**)

II. Bond markets surveillance & SRO

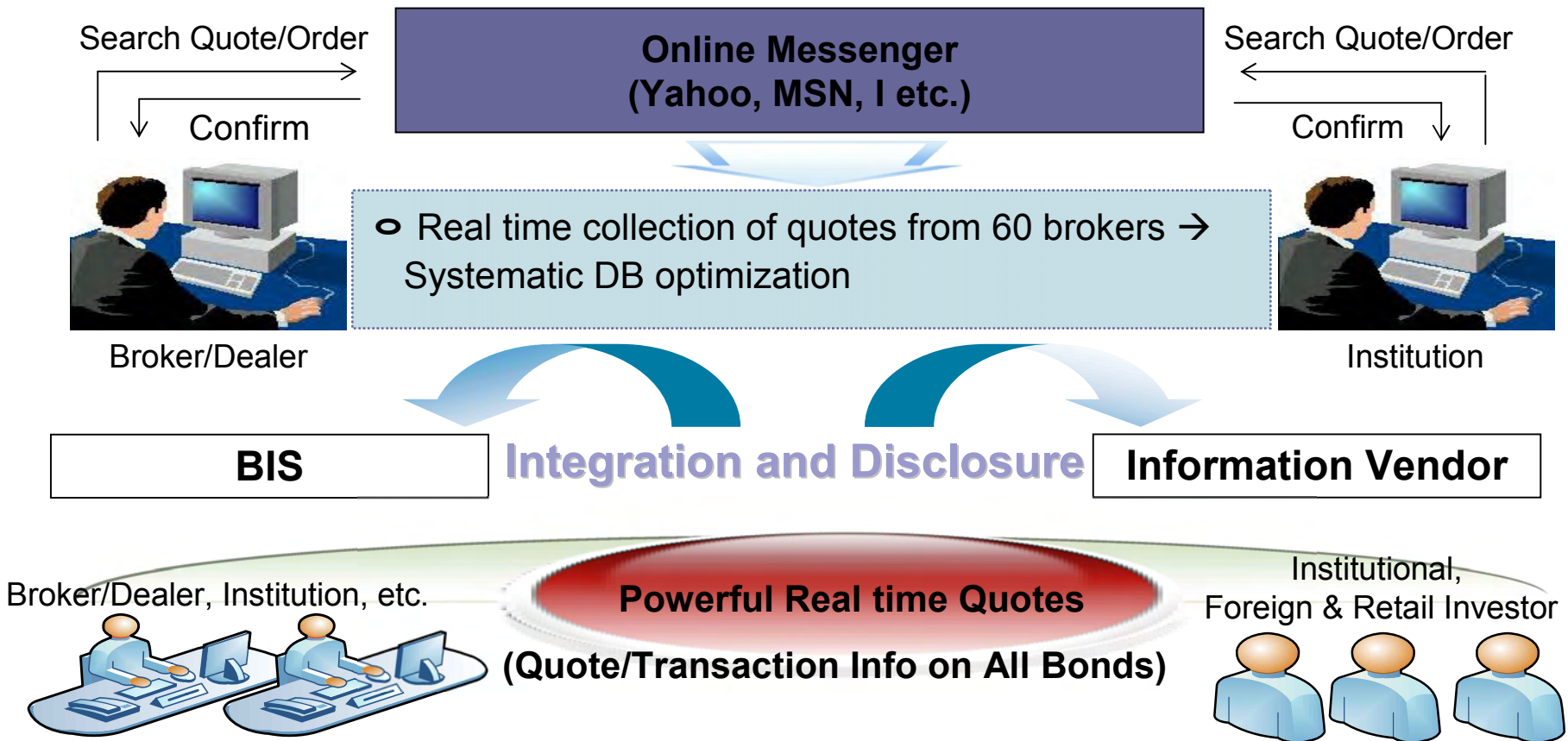


B-TRiS(Bond-Trade Report & Information Service)





2. Centralization & Disclosure of OTC Quotations



- ▶ Regulations to be finalized by the 1st half-2007; required systems in place by Oct. 2007
- ▶ Pilot operation of quote centralization system in Oct. & across the board implementation in Dec. 2007



2. Centralization & Disclosure of OTC Quotations





3. Monitoring of Bond Valuation Agencies

- ❑ After the introduction of initial bond valuation by the KOFIA (Nov. 15, 1998), **bond valuation by 3 agencies (KIS, KBP, & NICE)** was permitted in July 2000.
- ✓ Requests explanatory information and corrections on abnormal issues, after monitoring the appropriateness of agencies' assessed prices for a daily average of 12,000 issues.
- **Reports monthly monitoring results to the FSS**
- Monitors assessed prices monthly, upon request from the FSS
- ✓ Function : Enhances the reliability of bond valuation agencies' assessed prices
- ✓ Regulation : Agreements with bond valuation agencies, from February 2004



4. Investor Protection

Management of Agreements

- ✓ Manages and reviews **standard non-guaranteed corporate bonds trust agreement**

: reviews proposed changes to trust agreement when a foreign company is issuing bonds in the domestic market

- ✓ Manages the **agreement on marketable securities lending & borrowing**

- ✓ Manages the **agreement of inter-institutional REPO and retail REPO**

Post disclosure

- ✓ Discloses bond trading details within 15 minutes after trading execution and monitors any abnormal transactions

- ✓ Discloses of OTC Quotations

- ✓ Discloses yields and releases bond market indices

- ✓ Discloses Primary Dealer's quotes and reports market making performance

- ✓ Monthly Report : RP trading, OTC trading performance, CD, CP (calculation of benchmark yields)

Market Monitoring

- ✓ Monitors Bond Pricing Agencies' prices



III. Information dissemination & transparency

1. Calculation and Disclosure of Bond Yields
2. Korea Bond Index
3. Disclosure of Primary Dealer Quotations
4. Bond Market Indices
5. Provision of CP/CD Issue info, Yields, and Indices
6. Benchmark Yields for Final Settlement Price of Interest Rate Futures
7. Market Analysis Report
8. Bond Information Service(BIS)
9. KSTI training various bond course(on/off line)



1. Calculation and Disclosure of Bond Yields

- ❑ **Discloses yields for 425 issues**, including final quotation yields for **1-, 3-, 5, 10-, and 20-year treasury bonds, twice a day (11:30 & 15:30)**
- ✓ **Final quotation yields** for a specific time to maturity: 8 types 14 issues
- ✓ Final quotation yields by time to maturity: 4 types 46 issues
- ✓ **Mark-to-market base yields**: 13 types 370 issues
- ✓ Regulation: *Regulation on Business and Operation of Financial Investment Companies, and its Enforcement Bylaws*

III. Information dissemination & transparency

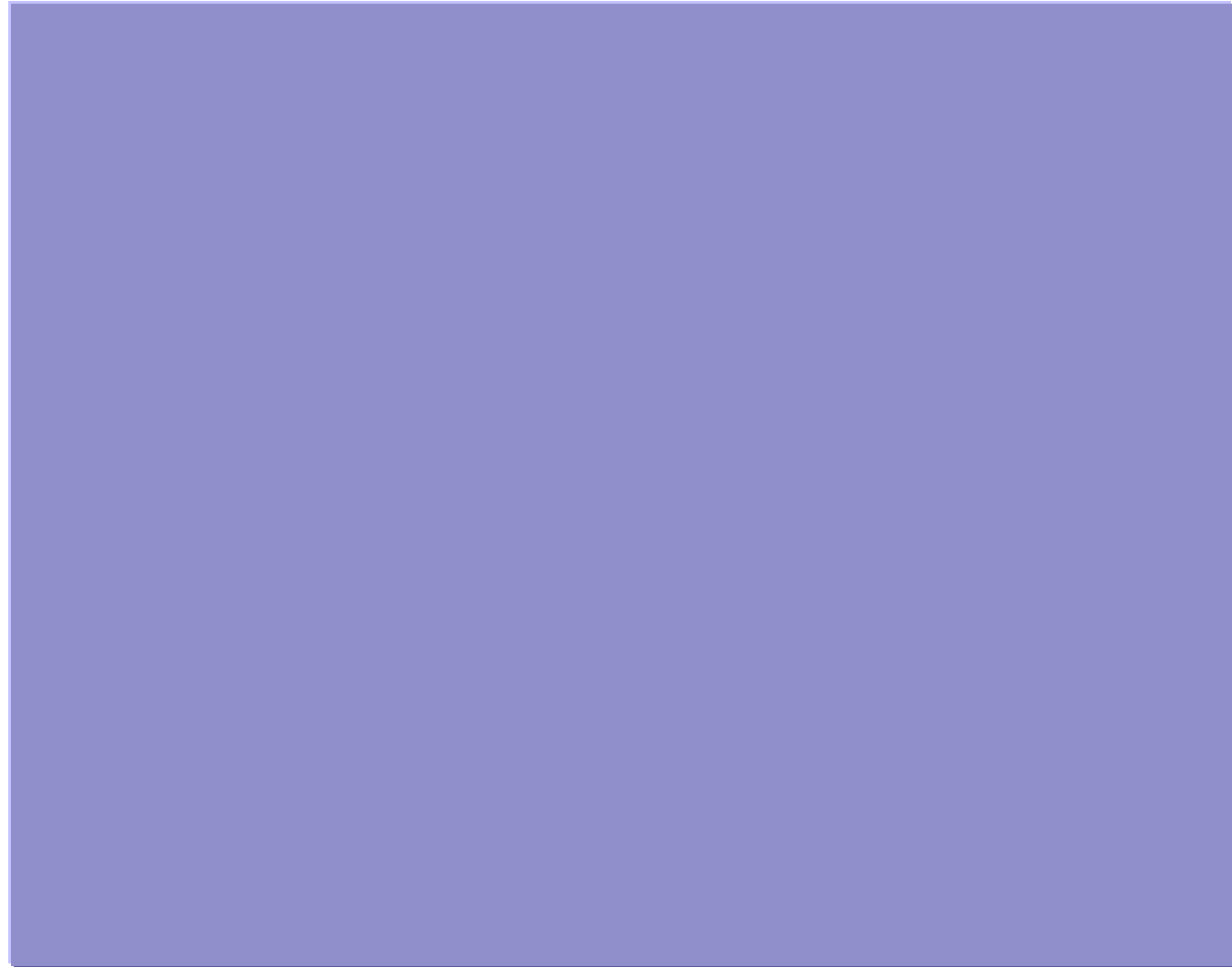


*Bond Markets in Korea &
KOFIA's Role*

	Final Quotation Yield	Representative Yield
Established	1 July 1993	1 May 1993
Feature	Either the yield of the final daily trade or the yield of the last traded quotation	Weighted average yields in terms of trading volume
Eligible Firms	Ten securities companies selected by the KOFIA (for a six-month duration)	All securities companies
Scope of Bonds Reported	<p>Treasury Bond (one-year, three-year, five-year and ten-year twenty-year maturities) National Housing Bond Type I (five-year maturity) Monetary Stabilization Bond (364-day, two-year maturity) Financial Industry Bond (one-year maturity) Corporate Bond (three-year non-guaranteed) AA-, BBB-CD (ninety-one-day) CP (ninety-one-day) KEPCO Bond (three-year maturity)</p>	Treasury Bond (three-year, five-year, ten-year, twenty-year maturities) National Housing Bond Type I Local Development Securities Property Development Bond Monetary Stabilization Bond (364-day, two-year maturity) Financial Industry Bond (one-year maturity) Corporate Bond (three-year non-guaranteed) KEPCO Bond (three-year maturity)
Designated Notifier	Middle manager-level or higher	Broker
Yields Reported	Last real-traded yield or final quotation yield by 11:30AM and 3:30PM	After every transaction
Reporting Method	Internet	KOSCOM on-line computer network
Disclosure Method	Bond Market Daily KOFIA website, KOSCOM Check Terminal facsimile to major news media	<i>Bond Market Daily</i> KOFIA website, KOSCOM Check Terminal
Tally Method	Adoption of most frequent quoted yields	Weighted average yield in terms of trading volume
Disclosure Time	Daily by 12:00PM and 4:00PM	Right after transaction; announced next day in <i>Bond Market Daily</i>



☐ **Final Quotation Yields**





□ Mark-to-market base yields





2. Korea Bond Index : KOFIA-Bloomberg Index

- ❑ KBI quantifies the yield fluctuations and price changes in the bond markets for a certain period of time.
- ❑ First released on Dec. 31, 1999, in collaboration with Bloomberg.
- ✓ Representative Indices : **Treasury Bond Index**, Corporate Bond Index,
Treasury Bond +Corporate Bond Index
- ✓ Supplementary Indices : Indices by bond type, credit rating, time to maturity, etc.
- ✓ Basis Time : September 5, 1998 =100.00





3. Disclosure of Primary Dealer Quotations

- Primary Dealers were introduced in July 2000 to increase liquidity in the OTC market through market-making by each bond type.
- ✓ A total of 19 **Primary Dealers (13 securities firms & 6 banks)** disclose their buy/sell quotations on the KOFIA website.
- ✓ The KOFIA receives daily quotations from PDs and discloses them on the website, CHECK, and on other online terminals.
- ✓ Regulation: *Regulation on Business and Operation of Financial Investment Companies, and its Enforcement Bylaws*



Bid/Ask of Primary Dealer Quotations





4. Bond Market Indices

- ❑ **Developed new indices to identify market risks systematically**, which help strengthen the bond markets' self-correcting and risk-managing capabilities.
- ✓ **Releases Bond Market Survey Index (BMSI), Herfindahl-Hirschman Index (HHI), and Market Credit Risk Index (MCRI)** on the 5th of every month.

Index	Relevant Risks	Expected Effects	
BMSI	Interest rate risks	Predicts market direction	Strengthens bond markets' market's self-correcting and risk-managing capabilities
HHI	Credit risks	Distributes fund according to credit premium changes	
MCRI			



Bond Market Indices : BMSI





5. Provision of CP/CD Issue Info, Yields, and Indices

- ❑ Publishes disclosures of CP yields & trading info in order for the FSS, MSF, the Bank of Korea, and the Fair Trade Commission to reflect short-term corporate financing activities in their policies
- ✓ Disclosure info has been provided daily and by time to maturity since August 1, 1997, the date brokerage houses began dealing in CPs
- ✓ Since Jan. 1, 2002, provision of additional yield info by credit rating & maturity
- ✓ Since July 1, 2002, in collaboration with KIS & Hankyung, provision of a CP index by credit rating & time to maturity on BIS & CHECK terminals

- ❑ Calculate yields twice daily based on CD (91d) yields from brokers according to issuance of **7 major commercial banks (KB, Woori, SC Cheil, Citi, Shinhan, Hana, Foreign Exchange)**
- ✓ CD rate is used as the benchmark rate for bank loans & flexible rate private loans and the calculated CD yield is disclosed on BIS & CHECK terminals



CP Indices





6. Benchmark Yields for Final Settlement Price of Interest Rate Futures

- ❑ Calculates and discloses benchmark yields that are to be used for final settlement prices of 3 interest rate futures listed on KRX.

- ✓ **3- & 5-year treasury bonds (18 co.), 364-day MSBs (15 co.)**

- ✓ Disclosure Frequency : **Twice a day (11:30 & 15:30).**

However, **five times on futures' final trading day (10:00, 10:30, 11:00, 11:30, and 15:00)**

- ✓ Calculation Method : Arithmetic average after excluding top and bottom 5, 3, and 1 for government bonds, MSBs respectively.

- ✓ Regulation : Rules on Disclosure of Benchmark Yields for Final Settlement Price of Foreign Exchange Futures



☐ Benchmark Yields for Final Settlement Price of Interest Rate Futures

home > Bond Interest Rates > Benchmark Yields for Interest Rate Futures > Benchmark Yields for Final Settlement Price of KTB Futures

● Benchmark Yields for Final Settlement Price of KTB Futures

> Date:

(Unit: %)

Base Bond	Search Date		Change	Previous
	11:30	15:30		
KTB0500-1103	4.841	4.830	0.003	4.827
KTB0475-0906	4.803	4.782	-0.015	4.797
KTB0475-1109	4.829	4.820	0.009	4.811
KTB0475-0912	4.770	4.750	-0.012	4.762



7. Market Analysis Report

- Publishes on-going and regular market analysis reports
- ✓ **Daily bond market trends** (on a daily basis)
- ✓ Weekly release of **corporate bond issuance plans**
- ✓ **KOFIA Bond Review** (Monthly, in the beginning of the month)
- ✓ **Bond market indices analysis report** (in the beginning of the month)
- ✓ Publishes on-going data/information including short-term rate, index
likelihood analysis
- ✓ Publishes Korean Bond Market Overview leaflet/information
- ✓ Fixed Income Forum, Seminar



8. Bond Information Service (BIS)

- ❑ **Maintains a wide range of bond market information**, thereby enabling access for market participants, makes trading more efficient, and thus facilitates efficient pricing. (<http://www.kofiabond.or.kr>)
- ✓ Promotes efficient pricing in the bond markets
- ✓ Helps monitor abnormal OTC bond trading, Quotations
- ✓ Establishes emergency disclosure system for real-time trading details
- ✓ Strengthens links with the interest rate futures market
- ✓ Increases convenience for members' reporting

IV. Products innovation and development



Bond Markets in Korea &
KOFIA's Role

- A variety of bond-linked products have been introduced to satisfy investors' needs.

Local Currency Bond

August 2006

Type	Sub Type	KIS's # of Valuation	KBP's # of Valuation	Reference
Straight bond	Risk free bond	7,749	1,719	KTB, MSB
	Risky bond		5,837	Corporates, Financials, Agency bonds, etc
	ABS/MBS	756	1,266	
Interest rate linked Derivatives	FRN	348	22	Inverse FRN (Callable Inverse included)
			8	Dual Indexed FRN
			3	Flipper
			7	Digital FRN
			76	Range Accrual Note(Callable Note included)
			78	CMS Spread Accrual Note(Callable Note included)
			8	Quanto Note
			108	FRN(CD,KTB 5yr, NHB1 FRN, etc)
4	Miscellaneous (FX linked notes, etc)			
Equity-linked Derivatives	CB	53	37	
	BW	19	5	
	EB	2	2	
	ELS	2,269	1,447	Knock-out, Bull-spread, Bear-spread, Reverse convertible, Double barrier, Asian option, early-redemption type
Option-embedded securities	Callable bond	767	107	
Total		11,688	10,734	

IV. Products innovation and development



Bond Markets in Korea &
KOFIA's Role

OTC Bond

August 2006

Type	Sub Type	KIS's # of Valuation	KBP's # of Valuation	Reference
Warrant		226	460	Knock-out, Bull-spread, Bear-spread, Reverse convertible, Double barrier, Asian option, early-redemption type
Swap	IRS	455	704	Plain vanilla, , quanto, KTB index
	CRS	1,528	373	Mostly Asset Swap
Swaption		2	3	
Forward		681	726	
Cap / Floor		3	13	
Total		2,895	2,279	

Foreign Currency Bond

Type	Sub Type	KIS's # of Valuation	KBP's # of Valuation	Reference
Foreign currency bond	Foreign bonds	2,196	1,415	Straight bond(1,724/1,221), FRN(445/178), Convertible bonds(27/16)
	Korean paper	265	273	Straight bond(144/166), FRN(97/84), Convertible bonds(20/23)
	ABS/MBS/CDO	29	32	
	Structured Note	46	85	
Total		2,536	1,805	

Source : KIS, KBP Bond Pricing co.



- Interest Rate Derivatives

	Products	Underlying Assets	Listing Date	Trading Market
Futures	KTB Futures	3y(5y) KTB (8% Coupon rate and 6m payment)	Sep 29, 1999 (Aug 22, 2003)	KRX
		10y KTB(5% coupon and 6m payment)	Feb 25, 2008	
	MSB Futures	364d MSB		
Option	KTB Futures Options	KTB Futures	May 10, 2002	
Swap	Interest Rate Swap	Payment exchange between fixed and floating interest rate	Late 1998	OTC
	Currency Swap	Payment exchange between KRW, principle denominated by foreign currency and interest rate	Late 1998	



*Bond Markets in Korea &
KOFIA's Role*

December 1989	<ul style="list-style-type: none"> · Operation of the Council for Bond Issuance Coordinates issuance volume of corporate bonds (abolished in Oct. 1997) & special bonds (in Apr. 1998) in advance to stabilize market rates.
July 1, 1993	<ul style="list-style-type: none"> · Collection and release of final quotation yields (8 types, 14 issues) 1-,3-,5-,10-,20-y treasury bonds, 3-y corporate bonds (non-guaranteed AA-&BBB-), 3-y KEPCO bonds, 364-d & 2-y MSBs, 1-y industrial finance bonds, and 91-d CDs · Calculation and disclosure of final quotation yields for 91-d CP, 5-y national housing bonds type I
Nov. 15, 1998	<ul style="list-style-type: none"> · Introduction of mark-to-market system, exclusively by KOFIA
September 1999	<ul style="list-style-type: none"> · Disclosure of benchmark yields for settlement prices of government bond rate futures
April 1994	<ul style="list-style-type: none"> · Disclosure of benchmark yields for settlement prices of 91-d CD rate futures
Dec. 13, 1999	<ul style="list-style-type: none"> · Release of the KOFIA-Bloomberg Bond Index (basis 100 as of Sept. 5, 1998) Composite, Government bond, MSB, Special bond, Financial debentures, Corporate bond indices, etc.
February 2000	<ul style="list-style-type: none"> · Introduction of Inter Dealer Broker (start doing business from June) The KOFIA considered participating, but KIDB & KMB filled this role instead.
July 1, 2000	<ul style="list-style-type: none"> · Use of mark-to-market system across the board (assigned to 3 private companies) Continues disclosure yields by bond type and time to maturity. · Monitoring of bond valuation agencies: examination of prices and disclosure of valuation information on KOFIA website



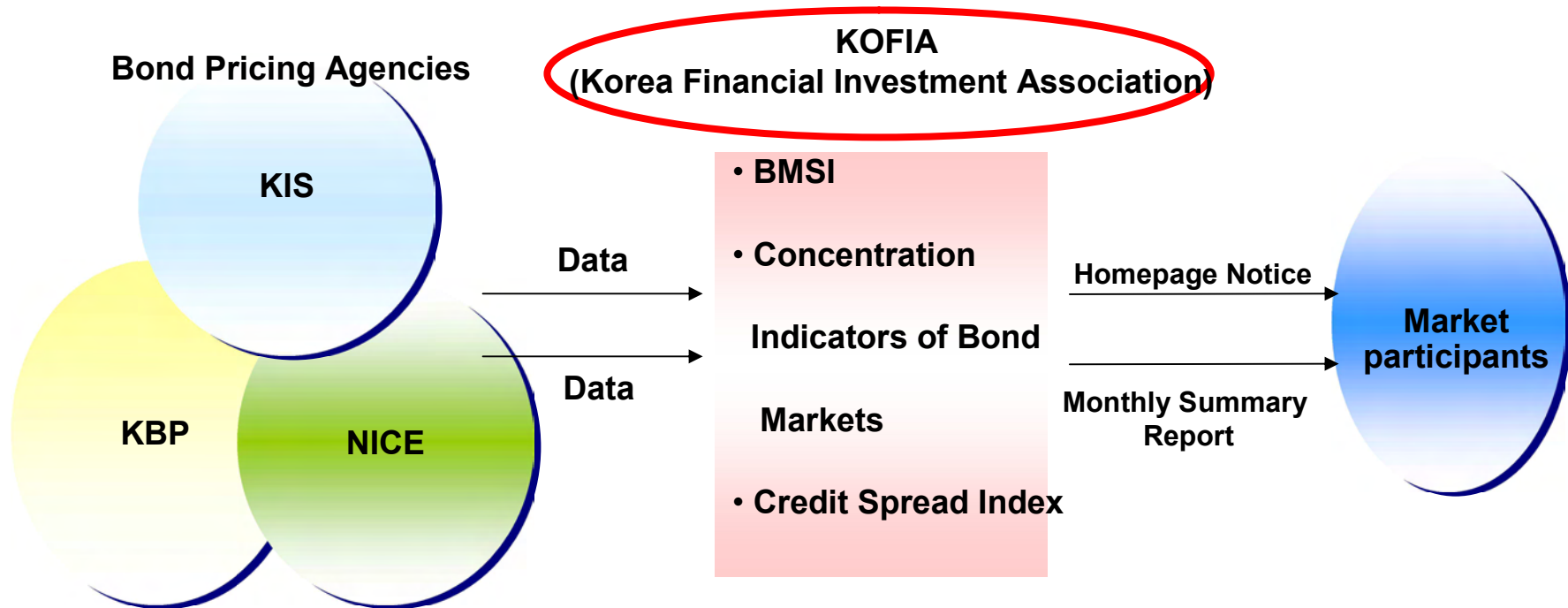
July 2000	<ul style="list-style-type: none"> · Introduction of Primary Dealers (Total of 24—15 securities firms & 9 banks) · Disclosure of buy/sell quotations through the KOFIA · Improvement of Bond Information Disclosure System(B-TRiS) · Real-time disclosure [within 30 min.→5 min. (July 2001) →15 min. (Dec. 2002)] of trading details
July 1, 2002	<ul style="list-style-type: none"> · Calculation and release of CP Index
December 2002	<ul style="list-style-type: none"> · Disclosure of benchmark yields for settlement prices of 364-d MSB rate futures
January 2006	<ul style="list-style-type: none"> · Calculation and release of Bond Market Survey Index (BMSI) : BMSI (composite, call, economic season, interest rate outlook, inflation, & won value BMSI's) Herfindahl-Hirschman Index (by bond type & industry), and Market Credit Risk Index (by bond type, credit rating & industry)
October 2006	<ul style="list-style-type: none"> · BIS reopened after renovation (English website opened in January 2007)
December 2007	<ul style="list-style-type: none"> · Centralization & Disclosure of OTC Quotations
February 2009	<ul style="list-style-type: none"> · Disclosure of Default Rate & Recovery Rate
June 2009	<ul style="list-style-type: none"> · Disclosure of Real-Time Bond Index(Treasury Bond)
Others	<ul style="list-style-type: none"> · Disclosure of Repo yields to customers , · Disclosure of representative yields · Release of valuation information , · Other bond-related disclosures



Early Warning Systems in Bond Markets



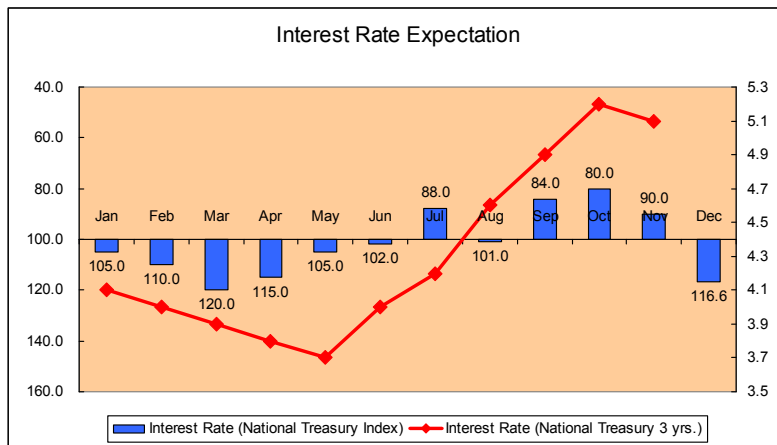
Calculation Procedure





BMSI Questionnaire Items

- ✓ e.g.) What do you think the benchmark bond rate will be in one month?
1) increase 2) current level 3) decrease

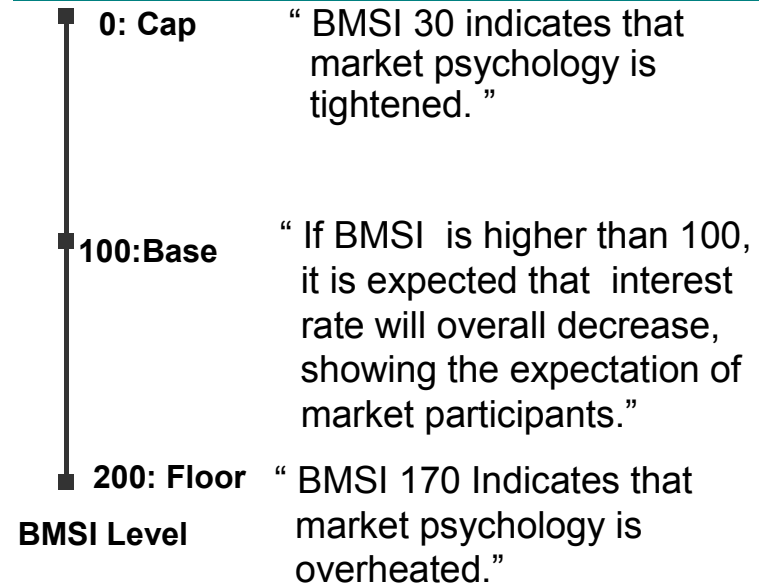


Generating BMSI- Formula

$$BMSI = (Good - Bad) / (Good + Bad) \times 100 + 100$$

- ✓ Good = Number of respondents who expect that bond markets will be getting stronger (decrease of interest rate)
- ✓ Bad = Number of respondents who expect bond markets will be getting weaker (increase of interest rate)

BMSI Interpretation





Bond Market Survey

1. Benchmark Bond rate in one month?

- 1) higher than now 2) current level 3) lower than now

2. Term spread between 1yr MSB and 10yr KTB in one month?

- 1) wider than now 2) current level 3) narrower than now

3. Target rate(overnight rate) by BOK in one month ?

- 1) likely to be raised 2) to be unchanged 3) likely to be cut

4. What do you want about Target rate(overnight rate) by BOK in one month ?

- 1) want to be raised 2) to be unchanged 3) want to be cut

5. Target rate(overnight rate) by FOMC next time ?

- 1) likely to be raised 2) to be unchanged 3) likely to be cut

6. Net Bond issue amount in one month?

- 1) increase 2) current level 3) decrease

7. CPI in one month?

- 1) higher than now 2) current level 3) lower than now

8. Value of Korean Won in one month?

- 1) decrease 2) current level 3) increase

9. Investment clock for the Industry as 4 seasons in one month? (Oct 6.8%, Nov 8.6%)

- 1) Spring 2) Summer 3) Fall 4) Winter

※ Ind Prod YoY 's likely to be under 5% from under 0%=>spring, over 5% => summer,
from over 5% into the under 5% => fall, can be under 0% => winter

10. Consumption clock for the customer as 4 seasons in one month? (Oct 7.6%, Nov 6.5%)

- 1) Spring 2) Summer 3) Fall 4) Winter

※ Consumer Expectation Index YoY 's likely to be under 5% from under 0%=>spring, over 5% => summer,
from over 5% into the under 5% => fall, can be under 0% => winter

11. Trade Surplus in one month?

- 1) increase 2) current level 3) decrease

12. I'm working for

- 1) the domestic company 2) the foreign company

13. I'm working as

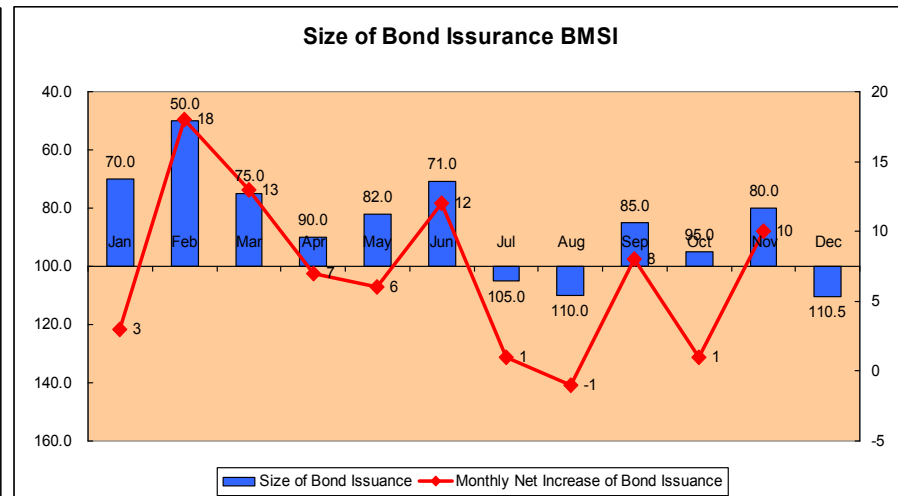
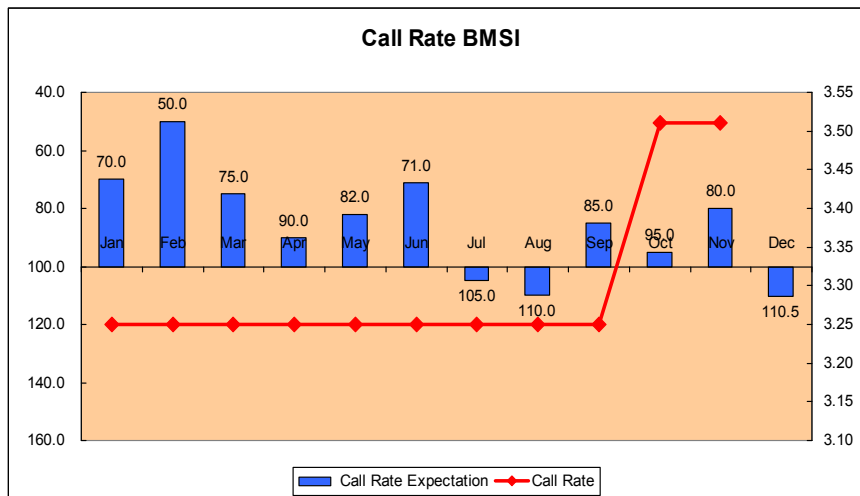
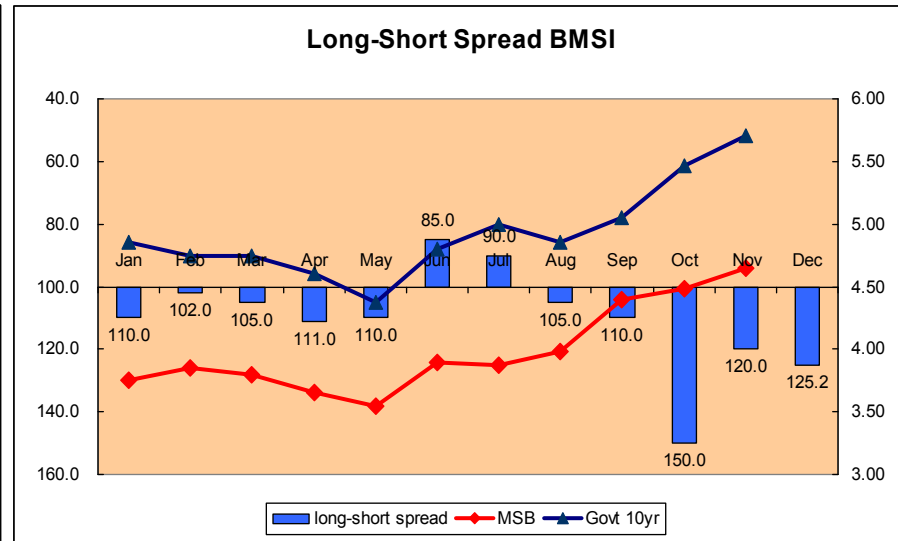
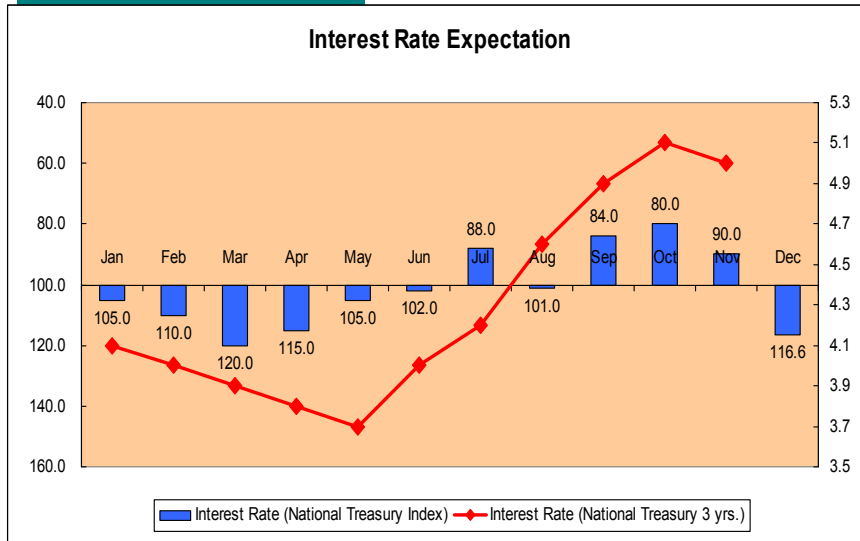
- 1) Fund manager, Trader 2) Analyst, Economist 3) something else

Thank you for your subscription in advance.



BMSI Graphs

In 2005





Summary

Outline of BMSI

- Indexing indicators by observing opinion changes from bond experts (selected 180 people) about bond market trend
- Inquiring selected experts per month about interest rate expectation, changes of market situation, and prediction on overall business condition

Objective of BMSI

- To provide bond market warning guide
- To reduce market uncertainty by permitting the expected market direction recognized in advance, leading up to increased financial stability

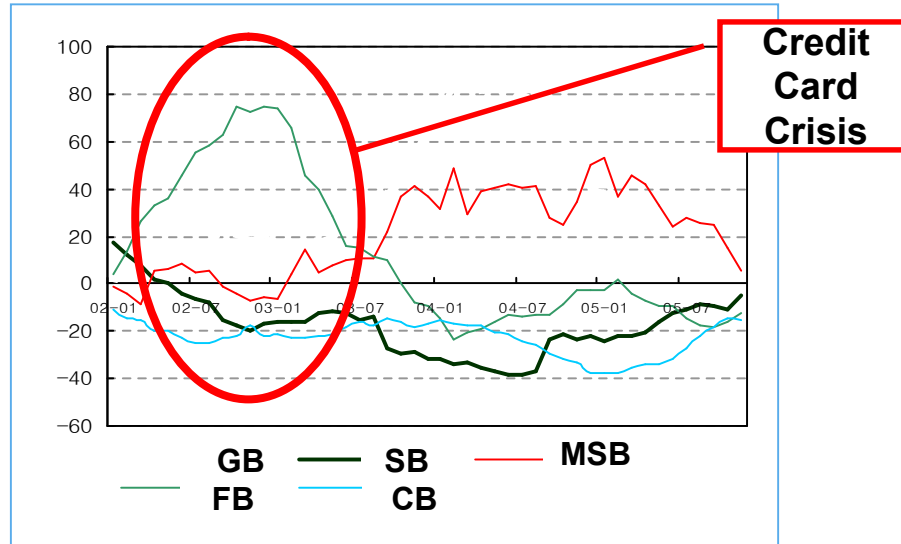
Benefits of BMSI

- Utilized as a referential guide when financial institutions make decisions to establish asset management strategies



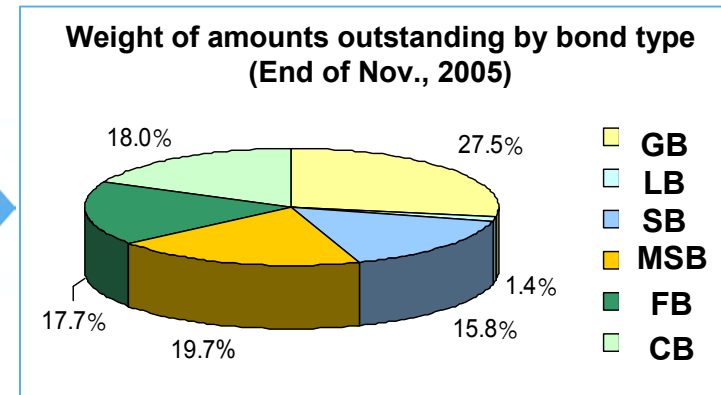
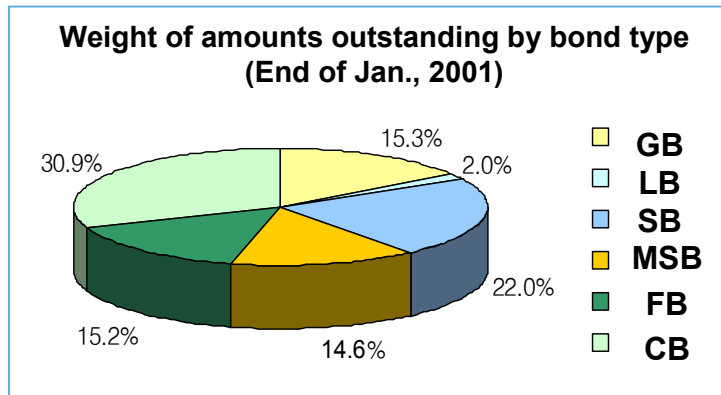
1. Classification of Bond Sectors by Issuers

[Figure 1] Changes in increasing rate by bond type



- ❖ Changes in increasing rate of different bonds composing concentrate indicator
 - ➔ Concentration on FB in 2002 and GB/MSB in 2003/2004 in bond markets [Figure 1]
- ❖ Deepening changes in weight by bond type in accordance with changes of market environment
 - ➔ Decrease in weight of CB/SB and increase in weight of GB/MSB [Figure 2]

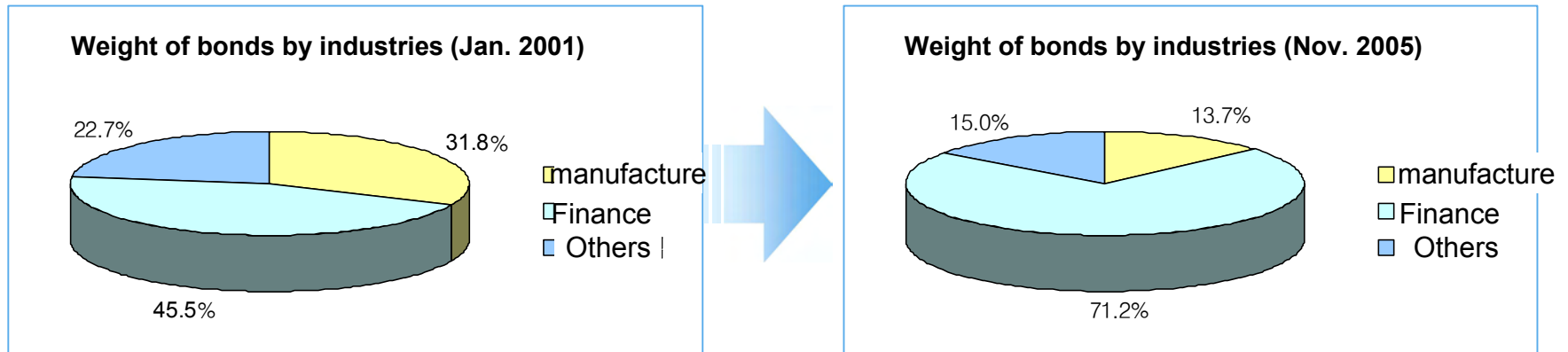
[Figure 2] Changes in weight of amounts outstanding by bond type



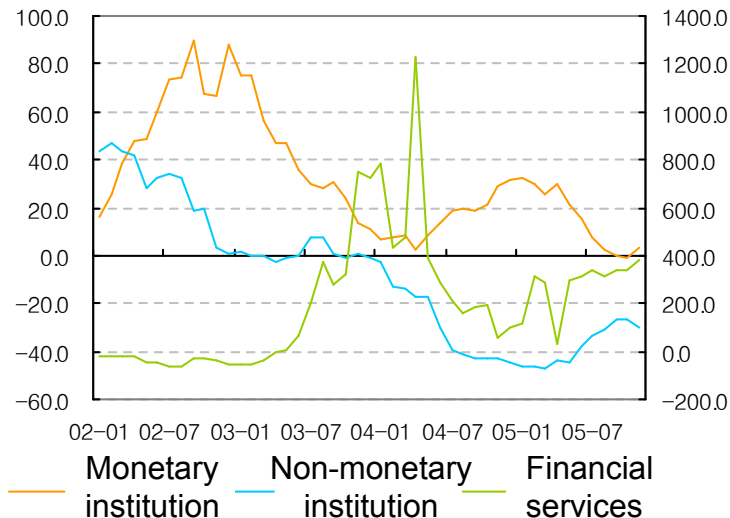


2. Classification of Bond Sectors by Industries

[Figure 3] Changes in weight of amounts outstanding by industries



[Figure 4] Changes in increasing rate of index components: Financial industry



❖ [Figure 3] shows the dramatic increase of concentration on financial industry since 2001
 → On the other hand, decrease in corporate bond weight in manufacturing industry

❖ Specifically in financial industry, banking sector weight had increased dramatically during 2002 and 2003, deeply related to interest rate fluctuation



Benefits of using concentration Indicators

Useful data to perceive
bond market features and
trend or market direction



By analyzing the concentration index of bond markets and its historical trend, it is possible to know what amount of bond markets money is concentrated and in what industries bonds are focused.

Benchmark indicator when
deciding the portion of
Investment by industries



Data by bond types and of industrial portion can be a used as a reference, when investing bonds and deciding the composition of portfolios

Useful materials to manage
industrial risks



Can help prevent possible risk caused by excessive concentration of money in specific bond types or industries (e.g. Liquidity crisis of loan business in 2003)



Trend of Spread Index by industries



■ Telecommunication ■ Construction
■ Chemical Ind. ■ Manufacture of Automobiles and Trailers

Objective of Credit Spread Index

❖ To provide trustworthy indexes for bond market participants by measuring credit risks in the market, by grading credit and industries, based upon credit spread

→ Spread by credit levels can predict credit risk recognized in the market
 Credit spread by industries shows the changes of credit risks in each industry

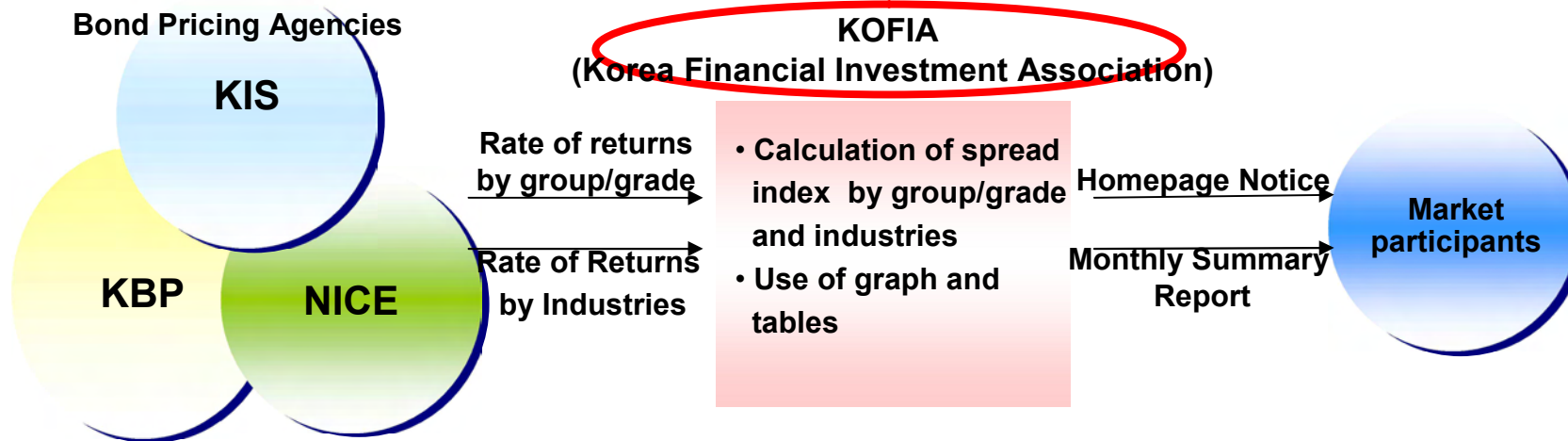
❖ International Practices :

S&P and Moody's have provided investors with credit indexes by issuers, by credit grades, and by industries for their investment tips.

However, in Korea, no agency has provided such information before.



Calculation Procedure



❖ Composing representative sample groups by credit group/grade and by industries among bond issuing companies → Indexing values of credit risks

(Based on the formula: Earning rate of risky bond – Earning rate of non-risk bond
= Risk Premium: Retention period risk + credit risk + liquidity risk)

group/grade
industry

Calculation Method

- ❖ Selection of Issues by index purposes: non-guarantee, senior, public offered or normal bonds (confined to only over BBB credit rate bonds)
- ❖ Sector division by risks: by bond groups / credit rates / industries



Thank You !