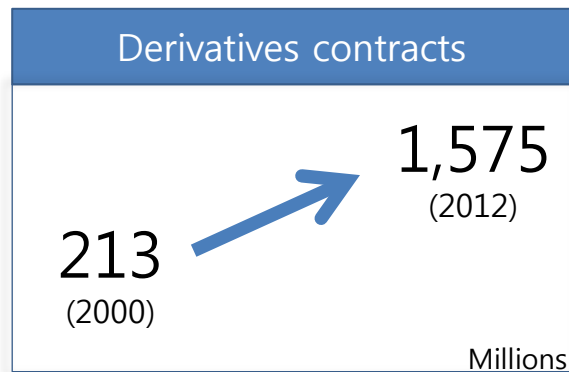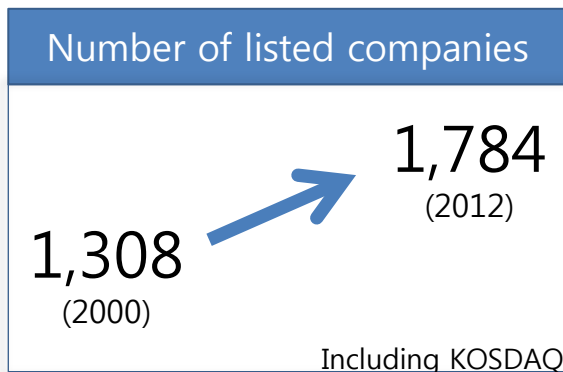# Trading in Korea: Current Landscape and Future Trends
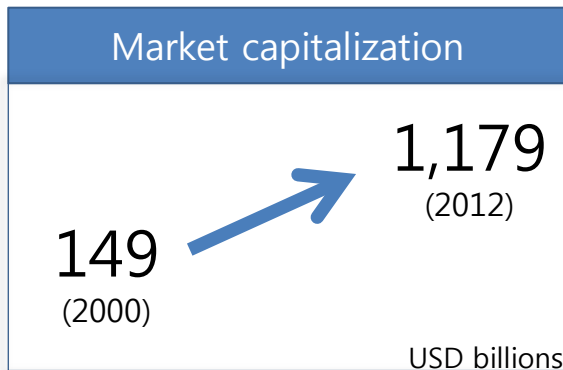
Capital Markets Division

2013.04.09
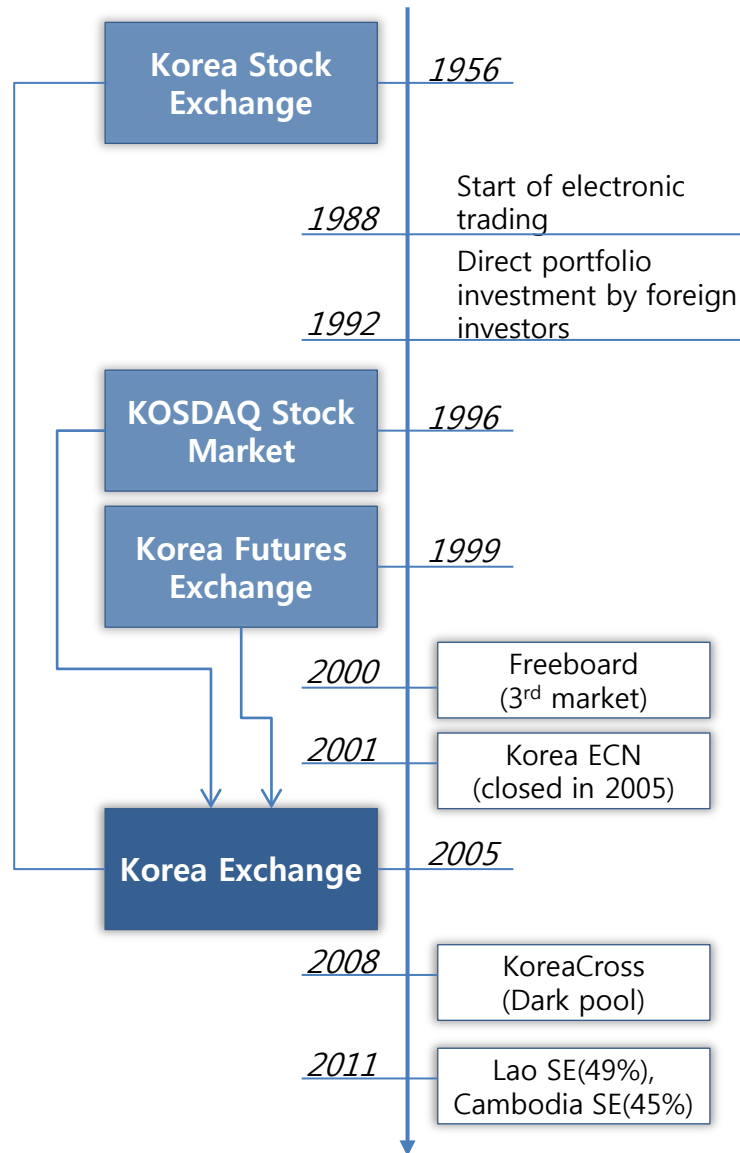
Overview [1]

"Growing"
"Liquid"
"Derivatives"

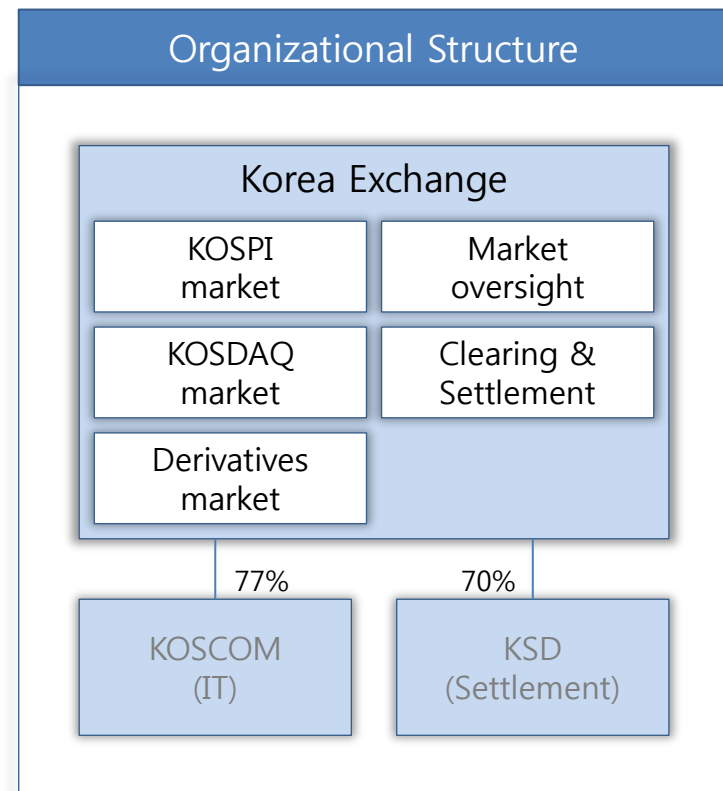## Market capitalization

149
(2000)

1,179
(2012)

USD billions

Trading value

498
(2000)

1,518
(2012)

USD billions

Number of listed companies

1,308
(2000)

1,784
(2012)

Including KOSDAQ

Derivatives contracts

213
(2000)

1,575
(2012)

Millions

Numbers

Market capitalization	**15**th
Trading value	**8**th
Turnover velocity	**5**th
Derivatives contracts	**1**st
Market cap. /GDP	**102**%

As of 2012

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Overview [2]

Korea Stock Exchange — *1956*

1988 — Start of electronic trading

1992 — Direct portfolio investment by foreign investors

KOSDAQ Stock Market — *1996*

Korea Futures Exchange — *1999*

2000 — Freeboard (3rd market)

2001 — Korea ECN (closed in 2005)

Korea Exchange — *2005*

2008 — KoreaCross (Dark pool)

2011 — Lao SE(49%), Cambodia SE(45%)

"Legal monopoly"
"Vertically integrated"

Organizational Structure

Korea Exchange

KOSPI market	Market oversight
KOSDAQ market	Clearing & Settlement
Derivatives market	

77% — KOSCOM (IT)

70% — KSD (Settlement)

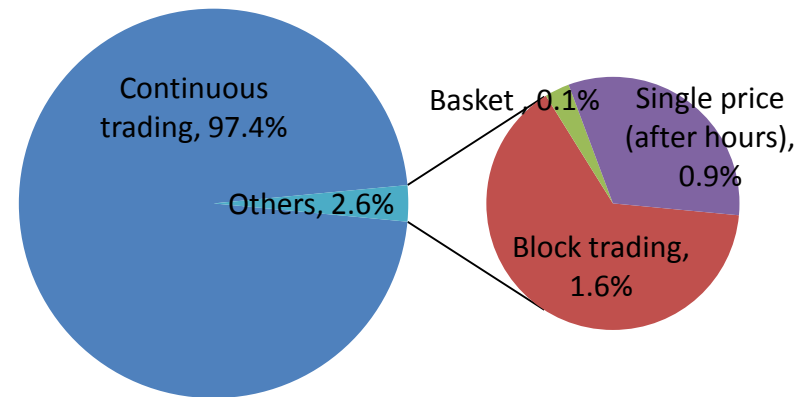**Korea Capital Market Institute**

2

Overview [3]

"Focused on Trading business"
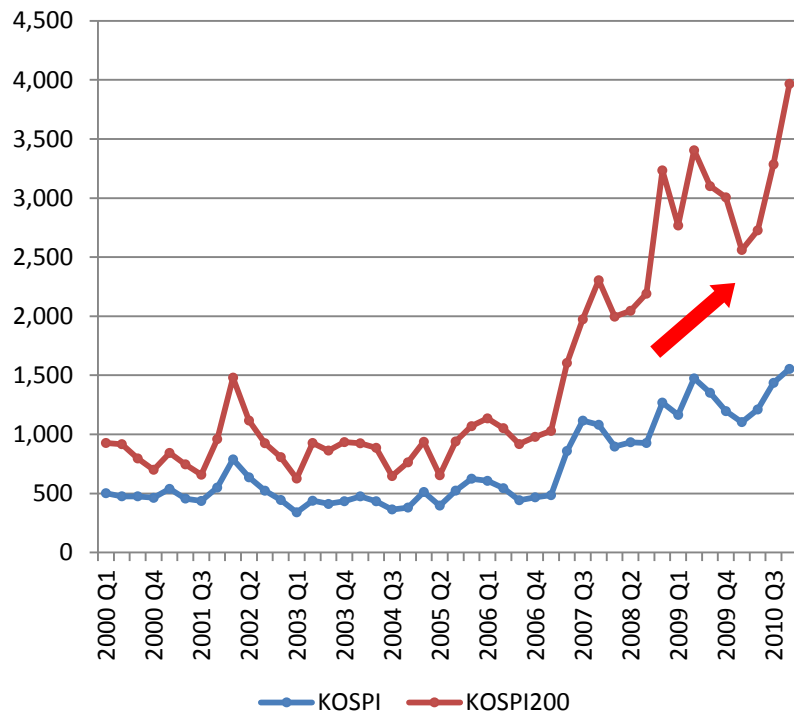"Continuous trading only"

KRX operating revenue

Trading value by trading mechanism

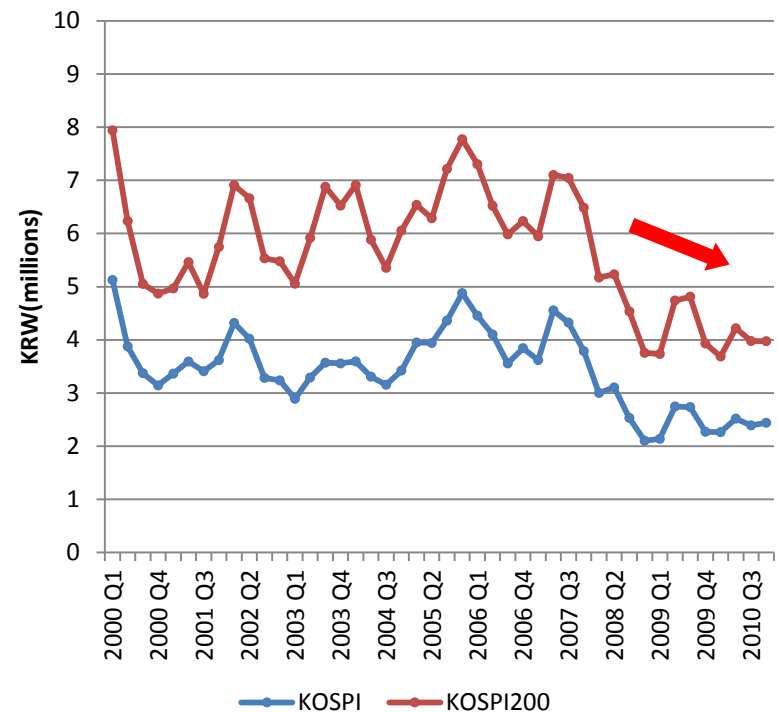# Recent changes: trade size & frequency

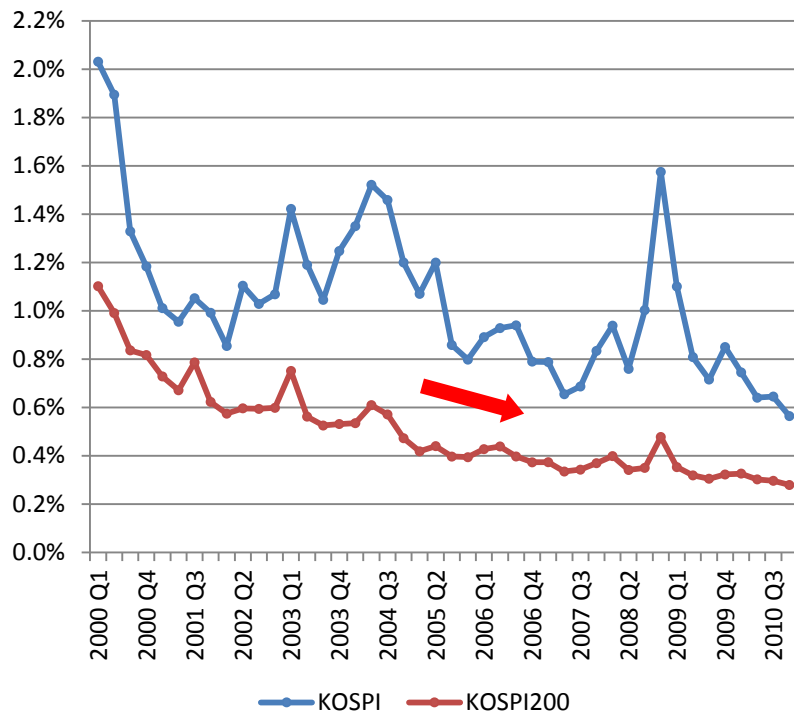- Number of trades increased and trade size decreased.

Number of trades

Trade size

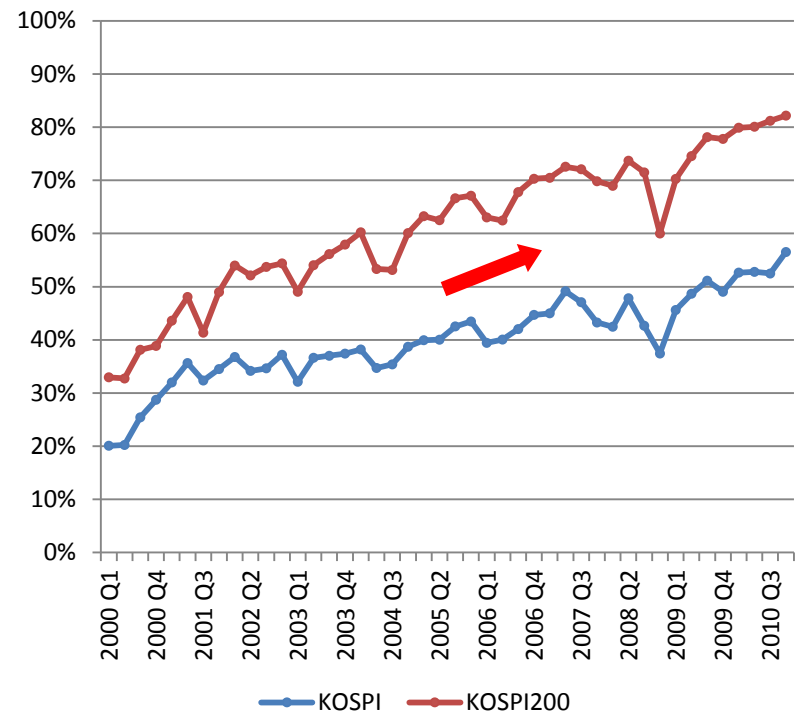Korea Capital
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Recent changes: trading costs

- Quoted spread decreased and binding probability increased.

Quoted spread

Binding probability*

* Binding probability is the percentage of quoted spreads that is equal to one tick.

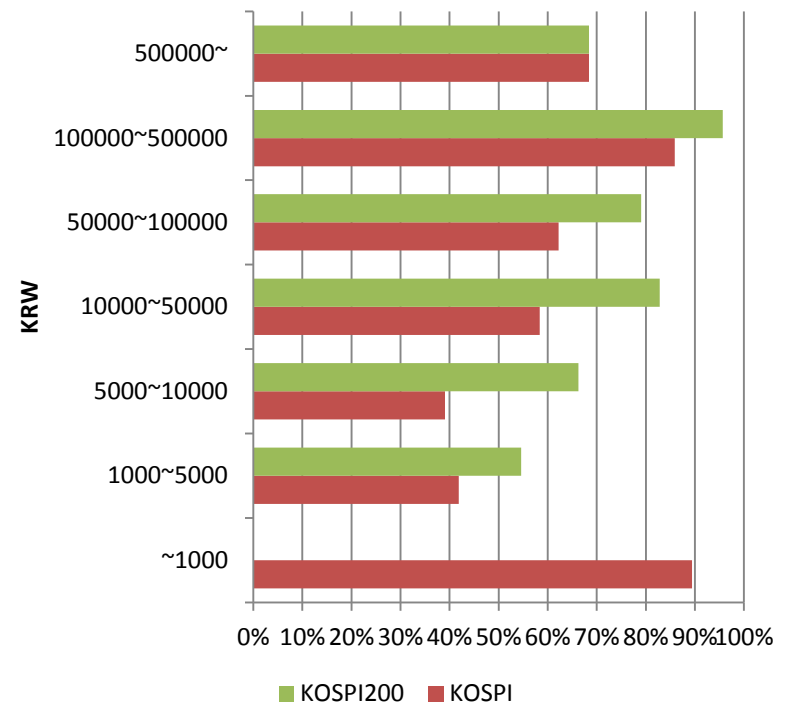Korea Capital Market Institute

Recent changes: tick sizes (1)

- Tick sizes act as a binding constraint of spread especially for high priced stocks.

Tick size structure

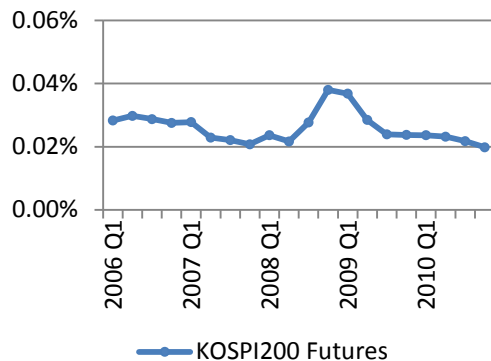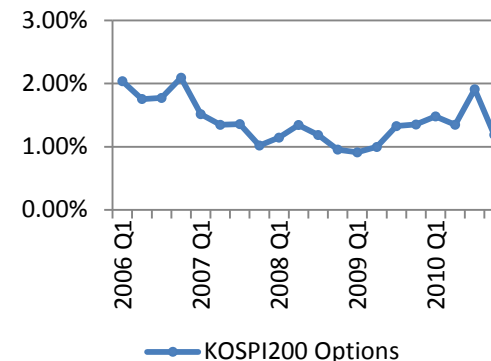| Price range (KRW)	Tick size (KRW)	Lower bound of spread
~1000	1	0.1%~
1000~5000	5	0.1%~0.5%
5000~10000	10	0.1%~0.2%
10000~50000	50	0.1%~0.5%
50000~100000	100	0.1%~0.2%
100000~500000	500	0.1%~0.5%
500000~	1,000	~0.2%

Binding probability

Recent changes: tick sizes (2)

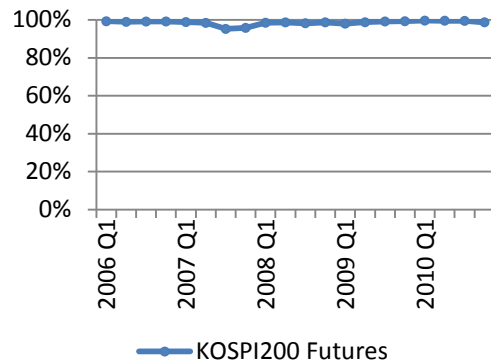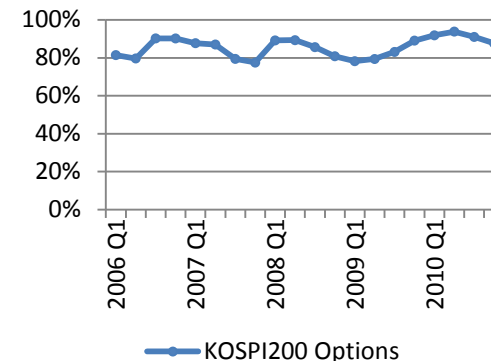- In the derivatives market, binding probability approaches 100%.

Quoted spread

KOSPI200 Futures

Quoted spread

KOSPI200 Options

Binding probability

KOSPI200 Futures

Binding probability

KOSPI200 Options

* Time to maturity is 8 days.

* Time to maturity is 8 days.
* ATM (0.95<moneyness<1.05) options only.

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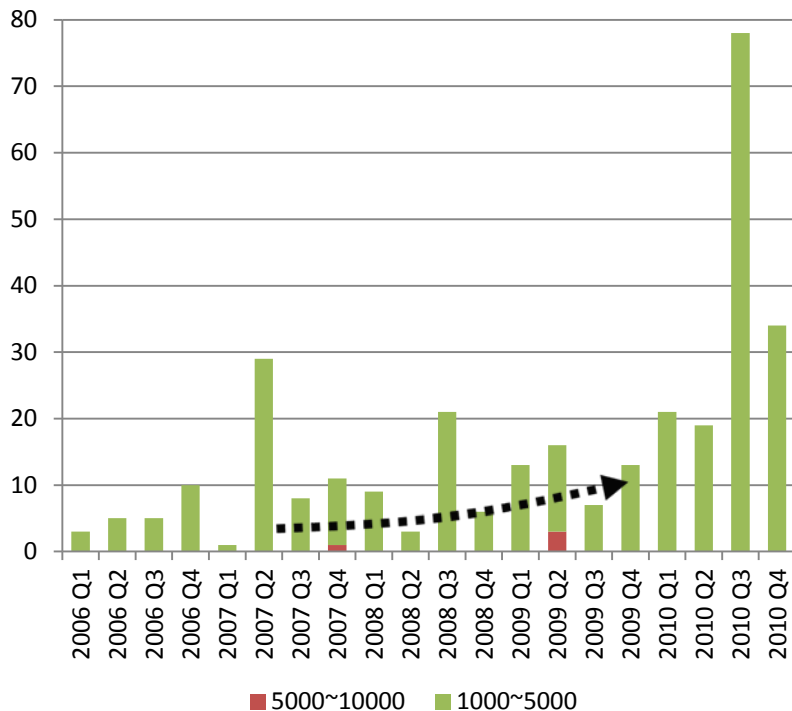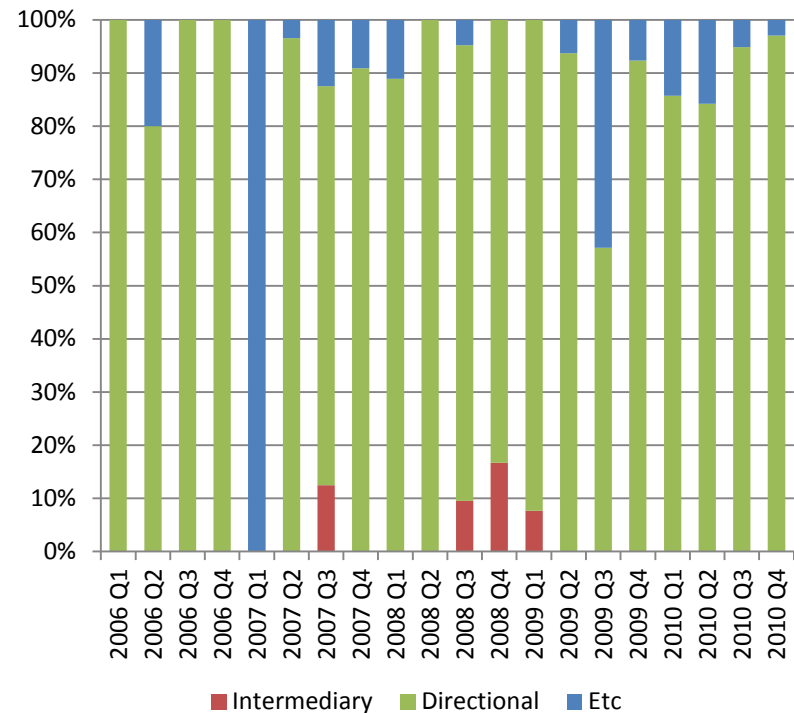
Recent changes: HFT (1)

- Traders who submit 1000+ orders daily emerged in the stock market.

KOSPI: Number of traders

Legend: ■ 5000~10000 ■ 1000~5000
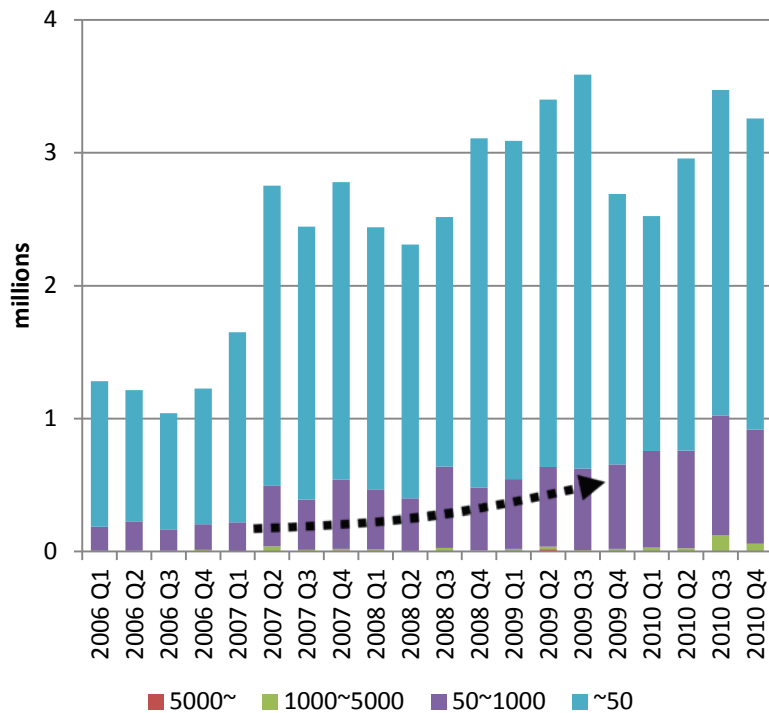
KOSPI: Trader type

Legend: ■ Intermediary ■ Directional ■ Etc

- Intermediary: end of day net position<±5% of daily trading volume and average intraday net position<±2.5% of daily trading volume.
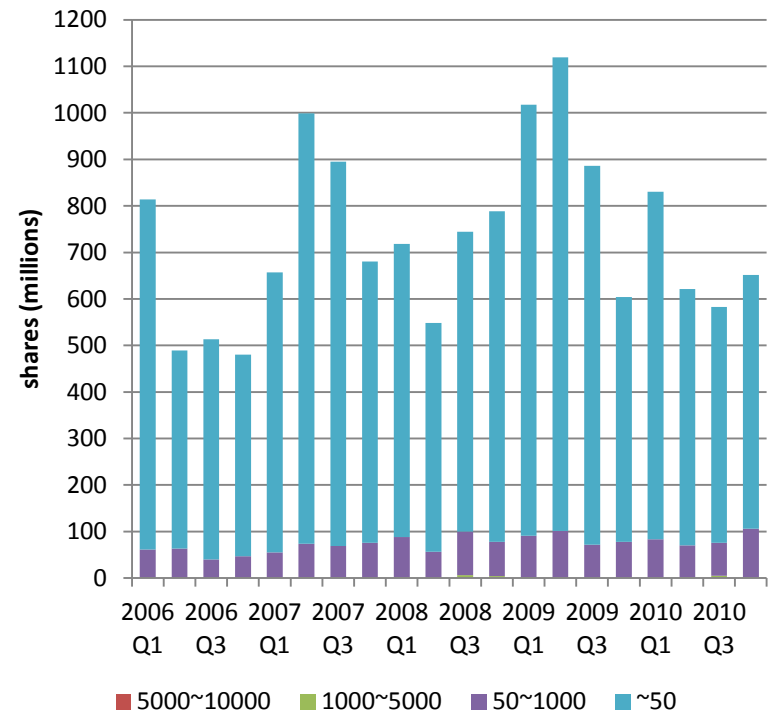- Directional: end of day net position>±15% of daily trading volume

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- Traders' order frequency is low but increasing.

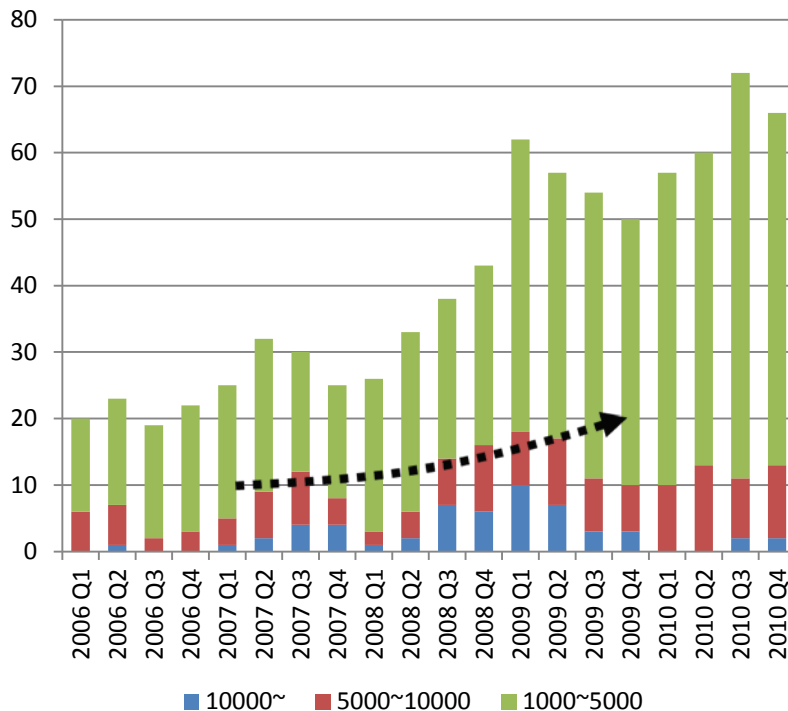**KOSPI: Number of orders**

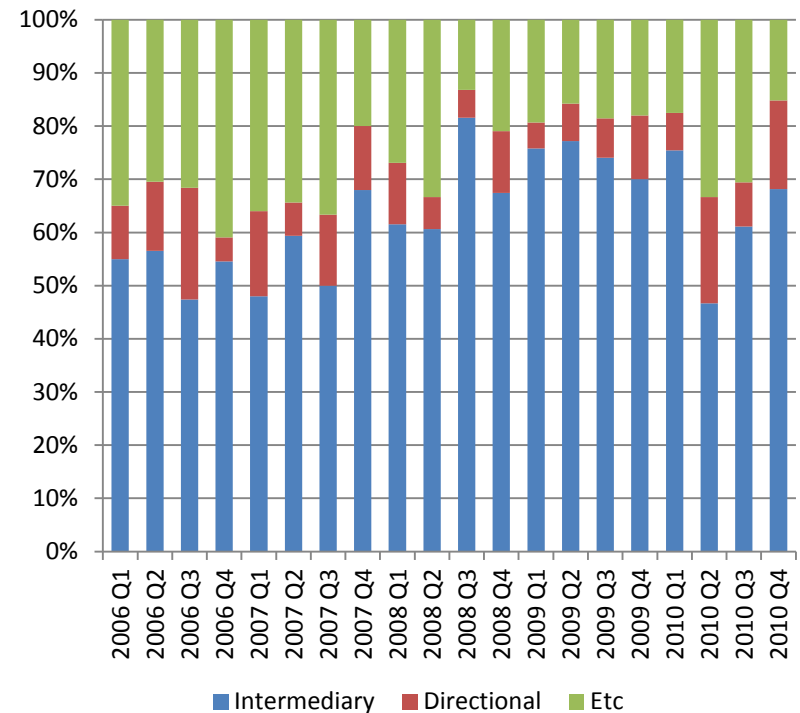**KOSPI: Trading volume**

Recent changes: HFT (3)

- In the futures market, the number of high frequency traders increased.

Futures: Number of traders

Futures: Trader type

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- High frequency traders account for a significant portion of orders and trading volume in the futures markets.

Futures: Number of orders

Futures: Trading volume

Recent changes: HFT (5)

- In the options markets, the number of high frequency traders increased rapidly.

Options: Number of traders

Options: Trader type

- The majority of orders comes from high frequency traders.

Options: Number of orders

Options: Trading volume

Recent changes: turnover

- Institutional investors and foreign investors' turnover increased.

Market cap. by trader type

Trading value by trader type

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Future trends [1]

Future trends [2]

Sophisticated traders

High frequency trading
Algorithm trading

Direct market access
Smart order routing

Low latency data feed

Trading cost analysis

Alternative trading system

Dark pools

Fee structure (rebate)
Innovative order types
Tick size reduction

Co-location

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Effective spread

Latency(ms)

Algo trading growth

Buy side DMA Level

Data: Celent(2010) and various sources

Future trends [4]

- **China – HK:**
  Growth/Hub

- **ASEAN-Singapore:**
  Growth/Hub

- **Japan:**
  Technology/Liquidity

- **Korea:**
  "_____"

GDP (GDP Growth(5 year avg.))

- 6,739(11%)(China)
  295(4%)(HK)
- 1,283 (4%)
- 5,287 (0%)
- 2,083 (5%)

Market size

- 3,697(China)
  2,832(HK)
- 1,179
- 3,681
- 2,279

Turnover velocity

- 134%(China)
  38%(HK)
- 128%
- 98%
- 33%

IPO(3 year total)

- 90(China)
  70(HK)
- 10
- 24
- 31

Data: Worldbank, WFE, IMF
Note: as of 2012, USD billions

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Challenges [1]

Market fragmentation

- Does market fragmentation decrease market quality?
- How can the possible negative impact of market fragmentation be reduced?

Market opacity

- What limit should be placed for meaningless or hidden orders?

Market stability

- Prices can crash simply due to the speed of order flows.
- Fast momentum strategies contribute to short term volatility.
- A tiny mistake in the trading algorithm can result in a price crash.

Efficient monitoring

- Efficient monitoring for manipulative and abusive trading strategy in the fragmented market environment.

Transaction TAX

- Transaction tax is a significant fixed cost of trading (stock market).

Market fairness

- Do DMA or co-location services create market advantages for certain traders?

✓ **Best execution rules**
✓ **Real time risk management**
✓ **Market transparency**
✓ **Consolidated market data**
✓ **Harmonized market stabilization devices**

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Challenges [2]

Marginalization

- Korea's economic growth is slowing down.
- Liquidity in the Korean capital market is volatile.

Capability

- Wide technology gap between domestic participants and foreign participants.
- Securities companies have brokerage oriented businesses.

Market macrostructure

- No organized OTC market.
- Capital market for innovative SMEs is not mature.

Tiered market

- Sophisticated traders will have limited attention for illiquid/small stocks.
- High information asymmetry in the small stocks.

✓ **Positioning strategy**
✓ **Growth strategy**
✓ **Market macrostructure**

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