Financial Investment Products

Determinants of the KOSPI 200 Futures and Options Markets Trading Volume

Hyo Seob Lee, Research Fellow*

In 2012, the trading volume of the KOSPI 200 futures and options markets decreased by 30% compared to the year before. The reason why the KOSPI 200 futures and options markets shrank more than other markets was not only limited stock market volatility, but also because of certain regulations of the KOSPI 200 options market. An increase in the level of volatility induces the increase in the trading volume of KOSPI 200 futures and options.

I. Introduction

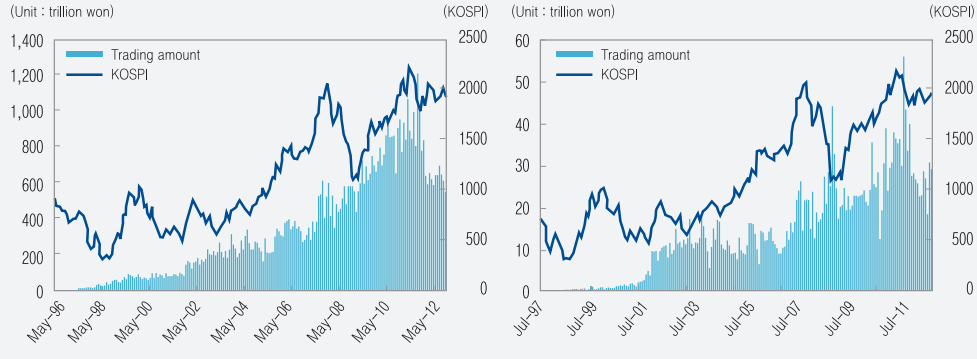
Since KOSPI 200 futures and options were first listed on Korea Exchange (KRX) in May 1996 and July 1997, respectively, the KOSPI 200 futures and options markets have achieved significant growth. At the time of inauguration, the average trading amount in the KOSPI 200 futures market was just around KRW 200 billion. In 2012, the trading amount rose to KRW 30 trillion, which was 150 times larger compared to 1996. The KOSPI 200 options market grew faster. The trading amount of KOSPI 200 options stood at KRW 1.3 trillion in 2012, which was 500 times larger than the KRW 3 billion in 1997. Thanks to this rapid growth, the KOSPI 200 futures and options markets ranked 6th and 1st in the world.

However, the KOSPI 200 equity derivatives market faced a downturn in terms of trading volume. The trading volume of the KOSPI 200 futures market was on the rise

* All opinions expressed in this paper represent the author's personal views and thus should not be interpreted as the Korea Capital Market Institute's official position.
Tel: 02-3771-0650, E-mail: hslee@kcmi.re.kr

since inception in 1996, but sharply dropped by 34.5% in 2012. The KOSPI 200 options market also declined by 30.4%. Considering the soft growth even during the global financial crisis of 2008-2009, the significant decline in the KOSPI 200 equity derivatives market in 2012 was exceptional.

Figure 1. Monthly trading amount of KOSPI 200 futures (LHS) and options (RHS) market



Source: Korea Exchange

Recently, the trading volumes of the KOSPI 200 futures and options markets dramatically decreased compared to other countries. Since the KOSPI 200 futures and options markets are related to the KOSPI stock market, the decrease in the KOSPI 200 futures and options markets could depress the stock market. This paper tries to examine what determines the trading volumes of KOSPI 200 futures and options markets and suggests improvements to vitalize them.

The KOSPI stock market is closely related to the KOSPI 200 equity derivatives market through arbitrage trading and hedge trading of structured products. So, it is likely that the decline in the KOSPI 200 equity derivatives market leads to a contraction in the KOSPI stock market. In this regard, this paper looks into the determinants of the trading volume of the KOSPI 200 equity derivatives market and then suggests implications of the recent shrinkage in the KOSPI 200 equity derivatives market.

II. Global Trends in Equity Derivatives Markets

Due to the limited growth of the global economy, the volatility of both the stock and derivatives markets have decreased during 2012. The limited upside potential is ascribed to both financial crises in European countries and the economic slowdown in emerging markets. Also, the downside potential decreased due to quantitative easing of central banks.

The decrease in global financial markets volatility leads to a decline in the trading volume in global capital markets. Actually, in 2012, the trading amount of the New York Stock Exchange, Tokyo Stock Exchange, and Hong Kong Stock Exchange dropped by around 15~20% compared to 2011.[1] As shown in Table 1, the trading volume of global exchange-traded derivatives also decreased by 10%. Specifically, the downward trend was evident in equity derivatives (-14.4%), interest rate derivatives (-14.1%), and currency derivatives (-24.6%), while trading of energy derivatives, non-metal derivatives, and precious metal derivatives increased slightly.

It is noticeable that the trading volume of the KOSPI 200 options market, which ranked 1st in terms of trading volume, decreased the most among the top 20 derivatives markets. Meanwhile, with the exception of the SENSEX options market that increased by 26,787%, the average trading volume of other top 10 derivatives market increased only slightly. Especially, the trading volumes of NIKKEI 225 futures and CSI 300 futures, that compete with KOSPI 200 derivatives, increased by 11.9% and 85.5%, respectively.

The decline in the volatility of financial assets leads to the decrease in the trading volumes of global stock markets and derivatives markets. The trading volume of the KOSPI 200 options market decreased the most among global top 20 options markets. Also the KOSPI 200 futures market heavily downsized, whereas the average trading volume of other top 10 derivatives markets slightly increased. Especially, the trading volumes of NIKKEI 225 futures and CSI 300 futures that compete with the KOSPI 200 derivatives market, increased by 11.9% and 85.5%, respectively.

1) Jun (2012)

Another factor is that the trading volume of ETF options is on the rise. Considering that the total asset under management (AUM) of the global ETF market grows over 20% annually, the increase in global ETF options should be expected.

Table 1. Trading volume of exchange traded derivatives

Rank	Products	1H 2011	1H 2012	Increments	Weight
1	Equity index	4,166,481,794	3,566,358,850	-14.4%	32.1%
2	Individual stock	3,525,872,425	3,420,930,755	-3.0%	30.7%
3	Interest rate	1,843,968,880	1,584,855,448	-14.1%	14.2%
4	Currency	1,512,635,471	1,141,085,644	-24.6%	10.3%
5	Agriculture	529,576,846	511,882,635	-3.3%	4.6%
6	Energy	416,252,799	420,004,466	0.9%	3.8%
7	Non-metal	190,371,974	229,038,432	20.3%	1.9%
8	Precious-metal	127,417,649	169,167,723	32.8%	1.7%
9	Extra	81,738,555	83,943,147	2.7%	2.7%
10	Total	12,394,316,393	11,127,267,100	-10.2%	100%

Source: Futures Industry Association (FIA)

Table 2. Trading volume of top 20 exchange-traded equity derivatives (1H, 2012)

Rank	Products	Exchange	Number	Increments
1	KOSPI 200 Options	KRX	1,265,215,495	-37.0%
2	S&P CNX Nifty Options	NSE	422,225,379	4.7%
3	SPDR S&P 500 ETF Options	**	301,292,178	4.6%
4	E-Mini S&P Futures	CME	249,730,377	-7.7%
5	Euro Stoxx 50 Futures	EUREX	175,401,268	-4.4%
6	RTS Futures	RTS	169,447,648	10.5%
7	Euro Stoxx 50 Options	EUREX	154,594,357	1.6%
8	Sensex Options	BSE	89,688,041	26,787.5%
9	S&P 500 Options	CBOE	87,566,887	4.6%
10	iShares Russell 2000 ETF Options	**	68,841,525	-8.7%
11	Nikkei 225 Mini Futures	OSE	65,047,175	11.9%
12	Powershares QQQ ETF Options	**	64,737,654	3.1%
13	VIX Options	CBOE	53,527,562	12.3%
14	Taiex Options	TAIEX	52,913,228	-19.8%
15	S&P CNX Nifty Futures	NSE	48,567,536	-21.5%
16	CSI 300 Futures	CFFEX	40,886,068	85.8%
17	iShares MSCI Emerging Market Index	**	34,581,174	-4.8%
18	KOSPI 200 Futures	KRX	32,526,689	-21.2%
19	E-mini Nasdaq 100 Futures	CME	32,150,601	-9.5%
20	TA-25 Options	TASE	31,138,674	-21.3%

Note: ** means multiple exchanges in the US.

Source: Futures Industry Association (FIA)

III. Determinants of KOSPI 200 Futures and Options Trading Volume

1. Success factors for KOSPI 200 futures and options

Adequate hedging demand is a key success factor for the development of the KOSPI 200 futures and options markets. Most hedgers in this market are domestic institutional investors and foreign investors. Both the economic growth and outstanding profits of Korean manufacturing firms bring about large investments from institutional investors and foreign investors. To hedge the decline of stock investments, both institutional and foreign investors use equity derivatives. This increases the trading amount of KOSPI 200 futures and options. For example, investors who hold a stock could reduce their portfolios' downside risk with a short position in KOSPI 200 futures, a long position in KOSPI 200 put options, or a short position in KOSPI 200 call options.

Another important factor is arbitrage demand. If the theoretical price of KOSPI 200 futures is more expensive than the index of a KOSPI 200 basket, arbitragers can profit with a short position in KOSPI 200 futures and a long position in a KOSPI 200 basket. On the other hand, if the price of KOSPI 200 futures is cheaper than the KOSPI 200 index, arbitragers easily profit with a long position in KOSPI 200 futures and a short position in a KOSPI 200 portfolio. This trading strategy for the purpose of arbitrage profits continuously provides liquidity to both the stock market and the derivatives market.

Also, the strong presence of speculative investors, most of whom are individual traders, helps vitalize the KOSPI 200 futures and options market. Even though the ratio of individual traders has decreased by half, the 30% ratio is much bigger than that of individual traders in other countries. Active trading of individual investors is attributed to both the high volatility and enough turnovers in the underlying stock market. So, the high leverage of KOSPI 200 futures and options market attracts many speculative individual investors.

In addition, the efficient microstructure in the derivatives market is a cause behind the steady growth of the KOSPI 200 futures and options markets. Even though the minimum trading unit of KOPSI 200 options changed from KRW 100,000 to KRW 500,000 won in June 2012, the trading unit is still low compared to other equity derivatives markets. Moreover, the bid-ask spread is very tight across maturity and moneyness in both KOSPI 200 futures and options markets. Likewise, the well-designed market microstructure contributes to abundant liquidity in KOSPI 200 futures and options markets.

A fast and reliable electronic trading platform is also one of the success factors for KOSPI 200 futures and options. The proportion of electronic trading based on Direct Market Access (DMA) accounts for more than 90% of all transactions in the KOSPI 200 futures and options markets. As the speed of trading becomes more important in the flow of high-frequency trading, widespread home trading systems (HTS) and mobile trading systems (MTS) help provide more liquidity in the KOSPI 200 equity derivatives market.

Last, the differentiated tax policy is a contributor to the success of the KOSPI equity derivatives market. Unlike other countries, a 0.3% stock transaction tax is imposed when stocks are sold, and no tax is imposed on derivatives transactions. Also, both the stock and derivatives markets do not charge capital gains tax. So, investors can save transaction costs by using KOSPI 200 futures and options instead of the underlying stocks. The tax benefit in the derivatives market could induce more global investors to invest in the Korean capital markets.

Table 3. Tax policy in global capital markets

Country	Stock		Derivatives	
	Transaction tax	Capital gains tax	Transaction tax	Capital gains tax
South Korea	O	X	X	X
US	X	O	X	O
Japan	X	O	X	O
UK	O	O	X	O
France	O	O	X	O
Spain	X	O	X	O
Germany	X	O	X	O
Taiwan	O	X	O	X
Singapore	O	X	X	X
Hong Kong	O	X	X	X
Thailand	O	X	X	X
Malaysia	O	X	X	X

Source: Korea Capital Market Institute (2012)

In summary, main success factors in the KOSPI 200 futures and options markets are hedging demand, arbitrage trading demand, speculative demand based on high volatility and turnover, market microstructure, reliable IT infrastructure, and a differentiated tax policy.

2. Literature and methodology

Previous literature in financial economics examined the positive relationship between prices and trading volume, or negative relationship between price volatility and trading volume. Trading volume is often used as an explanatory variable to investigate what determines asset prices and price volatility. However, there are very few studies on what determines the trading volume of the equity derivatives market.

Chang and Yoon (2011) investigated whether the information contained in the trading volumes of the stock and futures markets is useful in explaining the volatility of Korea's stock market. They showed that the stock volatility is highly correlated with

the volatility of the trading volume of derivatives. Moon and Hong (2007) tested the relationship among returns, volatilities, contracts, and open interests of the KOSPI 200 futures market, and found that both returns and open interests partially lead to the increase in the trading volume of KOSPI 200 futures. Kim et al. (2003) examined the relationship between trading activities of Korean stocks and KOSPI 200 futures contracts, and their underlying volatility, and showed that the volatility of Korea's stock market affects the daily, intra-daily, and overnight trading volume of the futures market.

This paper focuses on the determinants of the trading volumes of KOSPI 200 futures and options. As explanatory variables, I use the monthly trading volume of the stock market (SVOL), trading volumes of futures and options markets (FVOL, OVOL), KOSPI 200 index price (KOSPI200), intraday price bandwidth (LOW_HIGH), the volatility index of KOSPI 200 options, proportion of individual investors (FINDIV, OINDIV),[2] proportion of foreign investors (FFOREI, OFOREI), and put-call ratio (PCR)[3] of the KOSPI 200 options market from January 2003 through December 2012.

3. Empirical results

First I use an OLS (Ordinary Least Squares) model to explain what determines the trading volume of the KOSPI 200 futures market. The trading volume of the options market, trading volume of stock market, VKOSPI index, KOSPI returns, KOSPI price bandwidth, and proportions of individual investors and foreigners are included in explanatory variables. Likewise, to explain the trading volume of the options market, I use the trading volumes of the futures and stock markets, VKOSPI index, KOSPI returns, KOSPI price bandwidth, proportions of individual investors and foreigners, and put-call ratios. All dependent variables and explanatory variables are first differentiated to get rid of unit roots.

2) FINDIV refers to the proportion of individuals in the futures market, while FFOREI is the proportion of foreigners in the futures market. OINDIV means the proportion of individuals, and OFOREI is the proportion of foreigners in the options market. I excluded the proportion of domestic institutions to avoid the multicollinearity problem.

3) PCR is calculated by the ratio of the trading volume of put options to call options.

$$\Delta FVOL = \beta_1 \Delta SVOL + \beta_2 \Delta OVOL + \beta_3 \Delta VKOSPI + \beta_4 \Delta KOSPI200 + \beta_5 LOWHIGH + \beta_6 \Delta FINDIV + \beta_7 \Delta FFOREI + C \quad (1)$$

$$\Delta OVOL = \beta_1 \Delta SVOL + \beta_2 \Delta FVOL + \beta_3 \Delta VKOSPI + \beta_4 \Delta KOSPI200 + \beta_5 LOWHIGH + \beta_6 \Delta PCR + \beta_7 \Delta OINDIV + \beta_8 \Delta OFOREI + C \quad (2)$$

The regression results show that the trading volume of the stock market has a positive, statistically significant impact on the trading volume of the KOSPI 200 futures market. But, there is no significant relationship between the trading amount of the stock market and the trading volume of the options market. And the VKOSPI index is positively related to the futures volume. Therefore, it is concluded that when the trading volume of the stock market increases, and when the VKOSPI index rises, the trading volume of the futures market could increase.

Unlike the futures market, the trading volume of the stock market is negatively related to the option trading volume. The VKOSPI index also positively affects the trading volume of the options market. Interestingly, the increase in individual investors actually boosted the options market. This is because highly-leveraged speculative trading is mostly related to individual investors.

Table 4. Determinants of the trading volume of the KOSPI 200 futures market

Explanatory variables	Coefficient	T-statistics	P-value
DSVOL	0.42***	4.79	0.0000
DOVOL	-0.14*	-1.93	0.0551
DVKOSPI	0.18*	1.71	0.0895
DKOSPI200	-0.77**	-2.26	0.0252
LOW_HIGH	0.01	0.04	0.9652
DFINDIV	-0.04	-0.13	0.8947
DFFOREI	0.09	0.60	0.5443
C(Constant)	0.02	0.62	0.5313

Note: The asterisk marks (***, **, *) imply the significance level of 1%, 5%, and 10%, respectively.

Table 5. Determinants of the trading volume of the KOSPI 200 options market

Explanatory variables	Coefficient	T-statistics	P-value
DSVOL	-0.34***	-2.82	0.0057
DFVOL	-0.21	-1.61	0.1100
DVKOSPI	0.60***	4.08	0.0001
DKOSPI200	0.16	0.31	0.7548
LOW_HIGH	0.42	1.06	0.2889
PCR	-0.28	-1.72	0.0874
DOINDIV	1.75***	3.02	0.0031
DOFOREI	0.47	1.49	0.1338
C(Constant)	0.00	0.08	0.9324

Note: The asterisk marks (***, **, *) imply the significance level of 1%, 5%, and 10%, respectively.

Next, I use a VAR (Vector Auto Regressive) model to examine the linear interdependencies among the futures trading volume, options trading volume, stocks trading volume, and VKOSPI index. I do not use an error correction model because co-integration does not exist between variables. After the VAR analysis, I found that the options trading volume precedes the trading volumes of both futures and stock markets and the VKOSPI index. But the leading effect of the futures trading volume is not as high as that of the options trading volume. Also, the VKOSPI index has a positive impact on both futures and options trading volumes.

$$
\begin{aligned}
\Delta\, FVOL &= \alpha_1 \Delta\, FVOL(-1) + \alpha_2 \Delta\, FVOL(-2) + \alpha_3 \Delta\, OVOL(-1) + \alpha_4 \Delta\, OVOL(-2) + \\
&\quad \alpha_5 \Delta\, SVOL(-1) + \alpha_6 \Delta\, SVOL(-2) + \alpha_7 \Delta\, VKOSPI(-1) + \alpha_8 \Delta\, VKOSPI(-2) + \alpha_9 \\
\Delta\, OVOL &= \beta_1 \Delta\, FVOL(-1) + \beta_2 \Delta\, FVOL(-2) + \beta_3 \Delta\, OVOL(-1) + \beta_4 \Delta\, OVOL(-2) + \\
&\quad \beta_5 \Delta\, SVOL(-1) + \beta_6 \Delta\, SVOL(-2) + \beta_7 \Delta\, VKOSPI(-1) + \beta_8 \Delta\, VKOSPI(-2) + \beta_9 \\
\Delta\, SVOL &= \gamma_1 \Delta\, FVOL(-1) + \gamma_2 \Delta\, FVOL(-2) + \gamma_3 \Delta\, OVOL(-1) + \gamma_4 \Delta\, OVOL(-2) + \\
&\quad \gamma_5 \Delta\, SVOL(-1) + \gamma_6 \Delta\, SVOL(-2) + \gamma_7 \Delta\, VKOSPI(-1) + \gamma_8 \Delta\, VKOSPI(-2) + \gamma_9 \\
\Delta\, VKOSPI &= \delta_1 \Delta\, FVOL(-1) + \delta_2 \Delta\, FVOL(-2) + \delta_3 \Delta\, OVOL(-1) + \delta_4 \Delta\, OVOL(-2) + \\
&\quad \delta_5 \Delta\, SVOL(-1) + \delta_6 \Delta\, SVOL(-2) + \delta_7 \Delta\, VKOSPI(-1) + \delta_8 \Delta\, VKOSPI(-2) + \delta_9
\end{aligned}
\tag{3}
$$

To examine the lead-lag relationship between variables, I use the Granger causality test. The options trading volume and VKOSPI index are both statistically useful in forecasting the futures trading volume, but the trading volume of the stock market

does not affect other variables. Also, the VKOSPI index Granger-causes both the futures trading volume and options trading volume. So, it can be predicted that the increase of the underlying stock volatility could boost the trading volumes of the futures and options markets.

Last, by using an Impulse-Response analysis, I try to monitor the process through which shocks are transmitted among variables. The order of variables is determined by leading effects of VAR models. As Figure 2 shows, the shock of the VKOSPI index positively affects the options trading volume over two months (2nd term) and this effect disappears after ten months. But, the response of futures trading volume to the shock of the VKOSPI index vanishes after three months.

Table 6. VAR model between futures trading volume, options trading volume, stock trading volume, and VKOSPI index

Variables	FVOL	OVOL	SVOL	VKOSPI
FVOL(-1)	0.51*** (6.93)	0.00 (0.49)	0.01 (0.36)	0.02*** (2.34)
FVOL(-2)	0.29*** (5.50)	0.00 (0.73)	0.03 (1.11)	-0.01** (-2.24)
OVOL(-1)	14.87*** (17.80)	0.58*** (5.83)	1.87*** (5.20)	0.52*** (5.40)
OVOL(-2)	-8.07*** (-5.88)	0.04 (0.26)	-1.27** (-2.15)	-0.79*** (-5.02)
SVOL(-1)	0.27 (1.19)	0.02 (0.78)	0.65*** (6.51)	-0.01 (-0.34)
SVOL(-2)	-0.48** (-2.08)	-0.01 (-0.58)	-0.06 (-0.67)	0.03 (0.98)
VKOSPI(-1)	0.89 (1.15)	-0.12* (-1.32)	0.46* (1.41)	0.75*** (8.53)
VKOSPI(-2)	-2.19*** (-2.89)	0.15** (1.70)	-0.43* (-1.35)	0.10 (1.16)
Constant	7.39 (0.48)	1.64 (0.91)	6.94 (1.06)	4.72*** (2.69)

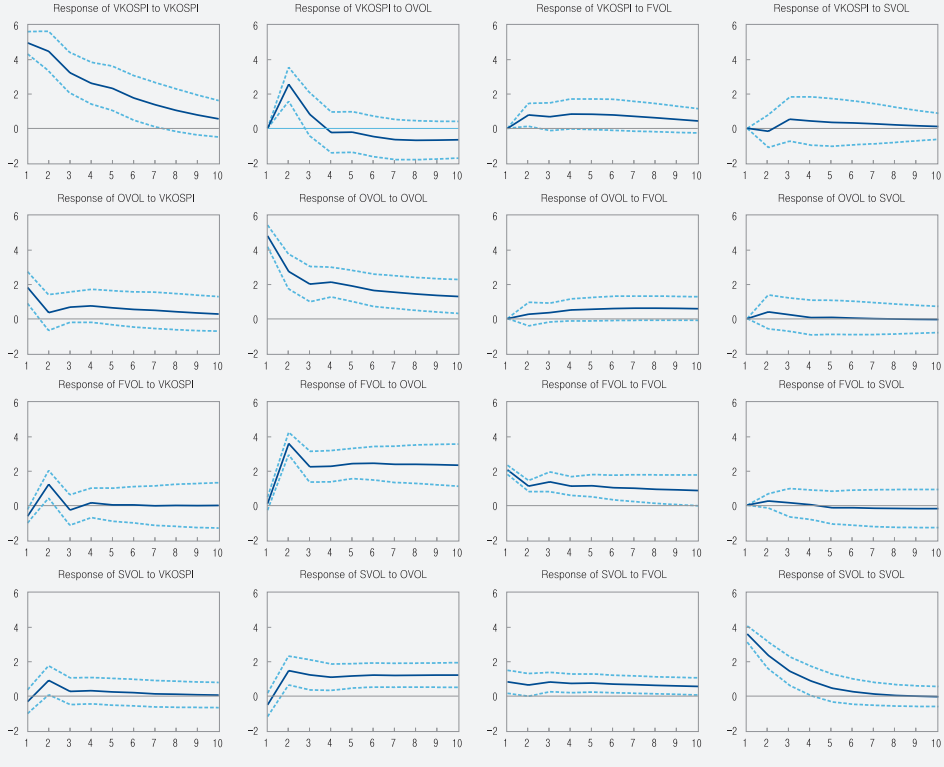
Note: The asterisk marks (***, **, *) imply the significance level of 1%, 5%, and 10%, respectively. The figures in parenthesis mean t-statistics.

Table 7. Granger causality test between futures trading volume, options trading volume, stock trading volume, and VKOSPI index

Null hypothesis		F-statistics	P-value
SVOL >> FVOL	SVOL Granger-causes FVOL	0.64	0.5292
FVOL >> SVOL	FVOL Granger-causes SVOL	6.10***	0.0030
OVOL >> FVOL	OVOL Granger-causes FVOL	161.75***	0.0000
FVOL >> OVL	FVOL Granger-causes OVOL	2.91*	0.0588
VKOSPI >> FVOL	VKOSPI Granger causes FVOL	7.10***	0.0012
FVOL >> VKOSPI	FVOL Granger causes VKOSPI	0.82	0.4399
OVOL >> SVOL	OVOL Granger causes SVOL	22.96***	0.0000
SVOL >> OVOL	SVOL Granger causes OVOL	1.60	0.2052
VKOSPI >> OVOL	VKOSPI Granger causes OVOL	19.66***	0.0000
OVOL >> VKOSPI	OVOL Granger causes VKOSPI	2.45*	0.0913

Note: The asterisk marks (***, **, *) imply 1%, 5%, 10% significance level respectively. The figures in parenthesis mean t-statistics.

Figure 2. Impulse-response function between VKOSPI index, options trading volume, futures trading volume, and stock trading volume



Note: The red dotted lines mean the second standard deviation of impulse-response functions.

In summary, the trading volumes of KOSPI 200 futures and options and the stock market trading volume have a positive relationship with each other. Actually, arbitrage trading is very active between futures and the stock market, and between options and the stock market, through program trading. Also for the purpose of hedging structured products such as equity linked securities (ELS) and equity linked warrants (ELW), the futures and options markets are closely linked to the stock market.

Next, the increase in the VKOSPI index positively affects the increase in futures and options trading volumes. Because the speculative demand and hedging demand increase when the underlying stock market is volatile, it is natural that the rise in the VKOSPI index causes the surge in both futures and options trading volumes. Finally, unlike the futures trading volume, the options trading volume is useful for forecasting the stock trading volume and VKOSPI index.

Primary success factors of the KOSPI 200 futures and options markets include speculative demand from individual investors, hedging demand from domestic institutional investors and foreign investors, high volatility and turnover of the underlying stock market, well-designed market microstructure, fast and reliable IT infrastructure, and tax benefits. This is partially supported by empirical analysis. Econometric analysis shows that the trading volumes of the KOSPI 200 futures and options markets are closely related to the stock market, and that the increase in the VKOSPI index boosts the KOSPI 200 futures and options market.

IV. Conclusion

A recession in the global economy lowers the probability of a stock market rally. And quantitative easing by central banks protects the stock market from turmoil. This policy causes a decline in asset volatility and leads to a decrease in the trading volume of financial markets including stock markets and derivatives markets. New regulations on OTC derivatives, which aim to prevent the recurrence of a global financial crisis like the one after the Lehman Brothers debacle, also adversely affect the liquidity of financial markets.

Under this de-leveraging, the trading volume of the global exchange-traded equity derivatives has declined by about 10%. The KOSPI 200 futures and options markets, which were ranked 1st and 6th in 2011, also dramatically fell by 34.5% and 30.4%, respectively. On the other hand, the trading volumes of NIKKEI 225 futures and CSI 300 futures that compete with the KOSPI 200 derivatives market, rose by 11.9% and 85.5%, respectively.

This paper examined the sharp decline of the KOSPI 200 futures and options markets in 2012. In this perspective, I explored the determinants of qualitative and quantitative factors behind the success of the equity derivatives market. Qualitative factors include hedging demand, arbitrage demand, speculative demand, high volatility and turnover of underlying assets, well-designed market microstructure, fast and reliable IT infrastructure, and tax benefits. Statistical models partially support the close relationship between the stock market and its derivatives market.

Since the KOSPI 200 futures and options markets are connected to the stock market through program trading and hedging for structured products, the decrease in the trading volume of the KOSPI 200 derivatives market could depress the KOSPI stock market. Therefore, regulatory move toward artificial volatility control and derivatives transaction tax should be carefully reexamined considering their impact on the stock market.

The result of empirical analysis in this article shows that the KOSPI 200 futures and options markets are closely linked to the stock market through program trading and hedging for structured products such as ELS and ELW. Hence, the shrinkage in the KOSPI 200 futures and options markets is likely to depress the stock market.

Another implication is that lowering asset volatility is not always good for capital markets. Even if the surge in volatility could lead to a systematic risk during a crisis, an appropriate level of volatility not only helps to provide both hedge traders and speculators with risk management tools, but also produces liquidity on futures and options markets. Therefore, it is not desirable for regulators to limit the bid-ask spread to control price volatility.

Last, adopting the derivatives transaction tax in KOSPI 200 futures and options will seriously damage the KOSPI 200 derivatives market and KOSPI stock market. Because the KOSPI 200 futures and options markets are connected to the stock market through program trading and hedging for structured products, higher trading costs for KOSPI 200 futures and options market will reduce the trading volumes of the KOSPI 200 derivatives market and the KOSPI stock market. In line with the global trend in financial tax policy, it is desirable to adopt a capital gains tax instead of a derivatives transaction tax.

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