

Nikkei 225 in August

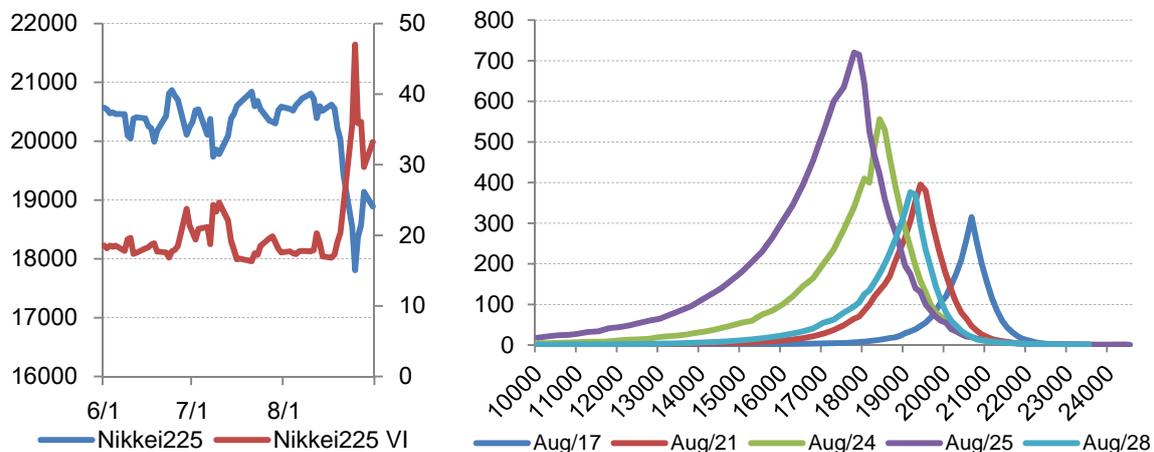
As of the end of August, the Nikkei Stock Average (Nikkei 225) stood at 18890.48 down 1694.76 points or 8.23% from the end of July 2015. In the middle of the month, the index climbed up to the 20800 mark. Afterwards, the global market crash triggered by plunges in Chinese stock market led to a sharp drop in the index to 17806 on 25th. The index price range in the month exceeded 3000, the largest since autumn in 2008 when the global financial crisis occurred triggered by the Lehman crash.

This month's Topic : Nikkei volatility index touched the level of the highest in 4 years.

In August dubbed “the largest storm since the Lehman crash”, the Nikkei Stock Average Volatility Index (Nikkei 225 VI) soared up to 47.01, the highest level since March 2011 when the Great East Japan Earthquake occurred.

The Nikkei 225 VI indicates the expected degree of fluctuation of the Nikkei Stock Average (Nikkei 225) in one month. The greater the index values are, the larger fluctuation investors expect in the market. The index is calculated by using prices of Nikkei 225 futures and options on the Osaka Exchange (OSE).

Fig.1 Nikkei 225 & VI (Left) and distributions of option prices when the VI surged (Right)

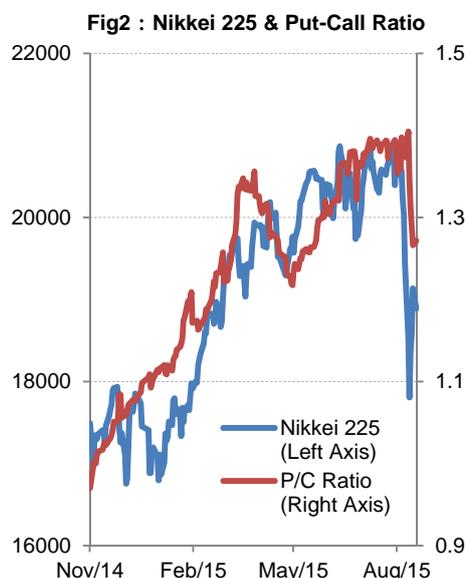


The Figure 1 shows the Nikkei 225 option prices graphically to visualize how this surge in the Nikkei 225 VI was caused by the option prices on August 17th, the day the Nikkei 225 VI started climbing, 21st, 24th, 25th the day the VI was peaked, and 28th (see right graph with strike prices on the horizontal axis and option prices, premiums on the vertical axis respectively). As the out-of-the money option prices are used for the Nikkei 225 VI calculation, the left and right sides of the mountain correspond to the prices of put and call respectively while the averaged put and call prices are set on the peak on the mountain.

The graph represents that the larger the Nikkei 225 VI, the greater the mountain sizes, where the tops and hillsides were higher and the foot were wider. This pattern was typical in that the

mountain sizes account for the Nikkei 225 VI levels, which were expanded by varied factors including the top, hillside and foot.

Before the volatile phase of the Nikkei 225 VI, it had been stable before the drop in the Nikkei 225. It seems that the option market did not anticipate the stormy stock market in August. However, from a different angle, the option market had indicated a signal of a overheated market. The indicator is Put-Call Ratio, P/C Ratio, a proportion of put open-interest to call open-interest. The Figure 2 shows that the P/C Ratio has continued to rise while the Nikkei 225 has climbed since November 2014. On June 24, the ratio already exceeded the level the previous peak on April 9th. It indicates that investors increased their put positions as insurances for the decline in the Nikkei 225, because the put open-interests tend to expand in case that more investors anticipate the declines in the future.



The Nikkei 225 VI jumped again to 39.16 on September 1st, which would imply that investors predict the volatile market is not over for a while. It might be useful to use the Nikkei 225 VI as well as the other indicator such as the P/C Ratio for multidimensional analyses.

Performance Summary of August 2015

(Data as of end of August)

Name of Index	Index Value	Monthly Return	Avg Return	Volatility	Yealy High	The Date	Yearly Low	The Date
Nikkei 225	18890.48	-8.23%	0.09%	1.22%	20868.03	24-Jun	16795.96	14-Jan
JPX-Nikkei Index 400	13813.71	-7.67%	0.08%	1.18%	15251.93	10-Aug	12308.20	7-Jan
Nikkei 225 TR	28061.09	-8.18%	0.10%	1.22%	30941.86	21-Jul	24719.38	14-Jan
Nikkei 225 VI (Volatility)	33.21	89.02%	0.55%	7.31%	47.01	25-Aug	16.33	21-Jul
Nikkei 225 VI Futures	22727.05	17.62%	-0.22%	2.98%	50080.55	6-Jan	17065.71	17-Aug
Nikkei 225 USD Hedged	20044.90	-8.39%	0.09%	1.24%	22179.49	24-Jun	17851.30	14-Jan
Nikkei 225 EUR Hedged	17670.72	-8.31%	0.09%	1.23%	19531.69	24-Jun	15690.33	14-Jan
Nikkei 225 Covered Call	16681.51	-7.70%	0.08%	1.09%	18257.09	10-Aug	14648.80	14-Jan
Nikkei 225 Risk Control	17084.63	-6.84%	0.04%	0.72%	18586.71	24-Jun	16255.58	14-Jan
Nikkei 225 Leveraged	14590.54	-16.45%	0.18%	2.45%	18015.34	24-Jun	11771.84	14-Jan
Nikkei 225 Inverse	2564.63	8.14%	-0.09%	1.22%	2942.85	14-Jan	2343.28	21-Jul
Nikkei 225 Double Inverse	3022.86	16.09%	-0.18%	2.45%	4059.40	14-Jan	2543.36	21-Jul
Nikkei 300	311.52	-7.58%	0.09%	1.17%	343.20	10-Aug	274.44	14-Jan
Nikkei China Related 50	1528.75	-9.39%	0.06%	1.20%	1805.35	29-May	1428.57	25-Aug
Nikkei 500 Average	1702.89	-7.49%	0.10%	1.17%	1871.64	10-Aug	1464.27	7-Jan
Nikkei Japan 1000	1817.14	-7.47%	0.08%	1.18%	2000.58	10-Aug	1603.46	14-Jan
Nikkei JASDAQ Average	2582.07	-7.55%	0.05%	0.86%	2847.99	21-Jul	2329.73	3-Feb

Name of Index	Index Value	Change	Hist. High	The year	Hist. Low	The year
Nikkei 225 DP	167.10	24.65%	167.10	2015	48.97	2002

Note: Avg Return and Volatility are calculated on the daily return for the past 1 year.

"Change" in the Nikkei 225 Dividend Point Index (Nikkei 225 DP) indicates a comparison with the value at the end of August 2014.

Historical High and Low in the dividend index were based on the values in the same month since 1998.

(Disclaimer) Although Nikkei Inc. (Nikkei) has produced this document, obtaining information and data from such sources that Nikkei believes reliable, Nikkei shall not be liable for the accuracy or completeness etc., and shall not accept any liability for any loss or damage arising from usage of this document. Nikkei shall not guarantee updates of newest information anytime on this document and may change the contents without notice. All rights of this document are reserved.