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# KOSPI 200 Reconstitution

## Take note of changes in free-float ratios

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### KOSPI 200 reconstitution and free-float ratio estimation

#### One services and 11 manufacturing stocks to be replaced

Every June, the Korea Exchange (KRX) reconstitutes the basket of stocks that make up the KOSPI 200. This year, we expect the KRX to replace 12 constituents, one from the services sector and 11 from the manufacturing sector. In the services sector, Hanssem is expected to replace DY. In the manufacturing sector, Hyundai Rotem, Cosmax, Chokwang Leather, Chong Kun Dang, Hyundai Livart, Dongwon Systems, Farmsco, Kyungbang, Hansol Chemical, Ildong Pharmaceutical, and Hanmi Semiconductor are expected to be added <Table 1>, while Daewon, Fursys, Capro, Isu Chemical, Songwon, Hansol Holdings, Iljin Display, Dongbu HiTek, Korea Circuit, Jahwa Electronics, and Daeduck GDS are likely to be removed <Table 2>.

#### Post-reconstitution mergers warrant attention

The recently announced mergers between Hyundai Steel and Hyundai Hysco and between SK C&C and SK Holdings deserve attention <Table 3>. The addition of a stock arising from a merger between KOSPI 200 constituents is typically made on the trading suspension date of the acquired company: June 29<sup>th</sup> for Hyundai Hysco and July 30<sup>th</sup> for SK Holdings. As both dates are after the reconstitution date, the mergers will not affect the upcoming rebalancing. We think Hyundai Hysco and SK Holdings will be replaced by Ilshin Spinning and Youngone.

**Table 1. Among likely new entrants, focus on Hanssem, Hyundai Rotem, and Hansol Chemical: Large free-float market cap but relatively low trading value**

Sector	Ticker	Company	Estimated free-float ratio (%)	Mkt cap (Wtr)	Estimated free-float mkt cap (Wtr)	Est. weight in KOSPI 200 (%)	Est. rank in KOSPI 200	Potential demand from index funds (A, Wbn)	20TD avg. trading value (B, Wbn)	Buying pressure (A/B)
Services	009240 KS	Hanssem	45	4.59	2.07	0.29	71	99.0	17.4	5.69
	064350 KS	Hyundai Rotem	55	1.57	0.86	0.12	114	41.5	6.5	6.38
	192820 KS	Cosmax	75	1.31	0.99	0.14	106	47.2	19.8	2.38
	004700 KS	Chokwang Leather	30	0.85	0.26	0.04	171	12.2	0.7	16.96
	185750 KS	Chong Kun Dang	75	0.66	0.49	0.07	142	23.7	10.6	2.24
	079430 KS	Hyundai Livart	65	0.70	0.46	0.06	149	21.9	6.3	3.51
Manufacturing	014820 KS	Dongwon Systems	15	1.42	0.21	0.03	178	10.2	3.6	2.86
	036580 KS	Farmsco	40	0.51	0.21	0.03	181	9.9	4.9	2.02
	000050 KS	Kyungbang	45	0.71	0.32	0.05	164	15.3	0.9	17.62
	014680 KS	Hansol Chemical	75	0.82	0.62	0.09	128	29.5	4.5	6.52
	042700 KS	Hanmi Semiconductor	45	0.37	0.17	0.02	187	8.1	2.1	3.82
	000230 KS	Ildong Pharm.	65	0.49	0.32	0.04	166	15.3	6.0	2.56
		Total		14.02	6.96	0.98				

Notes: As of May 8th

Source: KDB Daewoo Securities Research

**Table 2. Among stocks likely to be deleted, focus on Daewon, DY, and Fursys: Relatively low trading value**

Sector	Ticker	Company	Free-float ratio (%)	Mkt cap (Wtr)	Free-float mkt cap (Wtr)	Weight in KOSPI 200 (%)	Rank in KOSPI 200	Potential demand from index funds (A, Wbn)	20TD avg. trading value (B, Wbn)	Selling pressure (A/B)
Services	013570 KS	DY	70	0.17	0.12	0.02	193	-5.7	1.1	-5.34
	000430 KS	Daewon	65	0.39	0.25	0.04	163	-12.2	0.1	-96.77
	016800 KS	Fursys	35	0.39	0.14	0.02	189	-6.5	0.2	-31.64
	006380 KS	Capro	70	0.17	0.12	0.02	192	-5.7	3.4	-1.69
	005950 KS	Isu Chemical	60	0.18	0.11	0.02	197	-5.1	2.1	-2.47
	004430 KS	Songwon	65	0.22	0.14	0.02	187	-6.8	2.4	-2.78
Manufacturing	004150 KS	Hansol Holdings	75	0.23	0.17	0.02	181	-8.1	2.3	-3.49
	020760 KS	Ijjin Display	55	0.31	0.17	0.02	180	-8.1	13.5	-0.60
	000990 KS	Dongbu HiTek	50	0.40	0.20	0.03	174	-9.6	6.6	-1.45
	007810 KS	Korea Circuit	40	0.26	0.10	0.01	198	-5.0	3.1	-1.59
	033240 KS	Jahwa Electronics	60	0.23	0.14	0.02	190	-6.5	2.2	-2.98
	004130 KS	Daeduck GDS	75	0.24	0.18	0.03	179	-8.8	2.7	-3.30
		Total		3.18	1.84	0.26				

Notes: As of May 8th

Source: KDB Daewoo Securities Research

**Table 3. Details of Hyundai Steel-Hyundai Hysco and SK C&C-SK Holdings mergers (common stock)**

	Hyundai Steel -Hyundai Hysco	SK C&C-SK Holdings
Surviving entity	Hyundai Steel	SK C&C
Exchange ratio	1 : 0.8577607	1 : 0.7367839
Appraisal right exercise price	W72,100 / W63,552	W230,940 / W171,853
Date of confirming shareholders list	4/29/2015	5/6/2015
Reporting objection to merger	5/13/2015 – 5/27/2015	6/11/2015 – 6/25/2015
Shareholders' meeting	5/28/2015	6/26/2015
Exercising of appraisal rights	5/28/2015 – 6/17/2015	6/26/2015 – 7/16/2015
Period of trading suspension (for non-surviving entity)	6/29/2015 – 7/14/2015	7/30/2015 – 8/16/2015
Listing of new shares post-merger	7/15/2015	8/17/2015
Forecasted new entrants in KOSPI 200	Ilshin Spinning (manufacturing)	Youngone (services)

Source: Dart, KDB Daewoo Securities Research

**Up to 15 stocks expected to see changes in free-float ratios**

We expect as many as 15 constituents to see changes in their free-float ratios as a result of the upcoming rebalancing. Industrial Bank of Korea (IBK) is likely to see the sharpest rise (15%p), and Hanwha Chemical, LG Innotek, KEPCO KPS, KEPCO E&C, and Kumho Tire are all likely to see a 10%p increase. Meanwhile, sharp declines in free-float ratio are anticipated for POSCO Plantec (-40%p), as well as S-Oil and Toray Chemical Korea (-25%p for each). The ratios of SK Holdings and Moorim P&P are each expected to be revised down by 15%p, and decreases of around 10%p are expected for SK Chemicals, Samsung Heavy Industries, NAVER, and Yuhan.

**Table 4. Forecasted changes in free-float ratios of existing KOSPI 200 constituents**

	Ticker	Company	Current	Forecast	Chg. (%p)	Reason (projected)
Increase	024110 KS	Industrial Bank of Korea	35	50	15	Decreases in largest shareholder's stake and treasury shares
	009830 KS	Hanwha Chemical	55	65	10	Decrease in equity stakes held by largest shareholders and related parties due to rights offering
	011070 KS	LG Innotek	50	60	10	Increase in number of free-float shares after CB conversion
	051600 KS	KEPCO KPS	40	50	10	Disposal of largest shareholder's stake
	052690 KS	KEPCO E&C	25	35	10	Disposal of largest shareholder's stake
	073240 KS	Kumho Tire	80	90	10	Change of largest shareholder
Decrease	006120 KS	SK Chemicals	80	70	-10	Increase in largest shareholder's stake
	010140 KS	Samsung Heavy	75	65	-10	Increase in treasury shares
	035420 KS	NAVER	90	80	-10	Change of largest shareholder and treasury stock buyback
	000100 KS	Yuhan	85	75	-10	Treasury stock buyback
	003600 KS	SK Holdings	60	45	-15	Treasury stock buyback
	009580 KS	Moorim P&P	55	40	-15	Increase in largest shareholder's stake
	051310 KS	POSCO Plantec	65	25	-40	Increase in equity stakes held by largest shareholders and related parties due to rights offering
	010950 KS	S-Oil	65	40	-25	Increase in large shareholder's stake
008000 KS	Toray Chemical Korea	40	15	-25	Large shareholder's takeover bid to be delisted by itself	

Notes: For S-Oil and Toray Chemical Korea, changes in shareholding were reported early this year, and thus might not be reflected (the KRX uses end-of-year reports in calculating free-float ratios)

Source: KDB Daewoo Securities Research

### Implications of rebalancing

Among the variables in this year’s rebalancing are S-Oil and Toray Chemical Korea, because their shareholding changes were reported early this year. (The KRX bases free-float calculations on end-of-year reports.) If the KRX makes an exception and the two companies’ free-float ratios decline (which seems likely), existing constituents’ weight in the KOSPI 200 would likely need to be reduced by around 0.14%p. If their free-float ratios do not change, the figure would be around 0.43%; in either case, the impact on existing constituents seems negligible compared to past reconstitutions.

Nonetheless, it should be noted that stocks that see their free-float ratios revised down will see the biggest ever fall in their collective share in the KOSPI200—by 0.93%p if the ratios of S-Oil and Toray Chemical Korea decline, or by 0.63%p otherwise.

This year, index trackers will likely accumulate large caps such as Hanssem, Cosmax, Hansol Chemical, and IBK. Meanwhile, NAVER and S-Oil are expected to come under heavy selling pressures following the declines in their free-float ratios. NAVER might see a short-term increase in selling pressure if MSCI includes major overseas-listed Chinese IT stocks in its MSCI Global Investable Market Indices in May, as this would likely weaken investment sentiment on NAVER. As for S-Oil, a high level of selling pressure is expected, as selling demand from index funds should outweigh trading value following the decline in its free-float ratio. However, if S-Oil’s fundamentals continue to improve on the back of oil price rebounds, selling by index funds might present a buying opportunity.

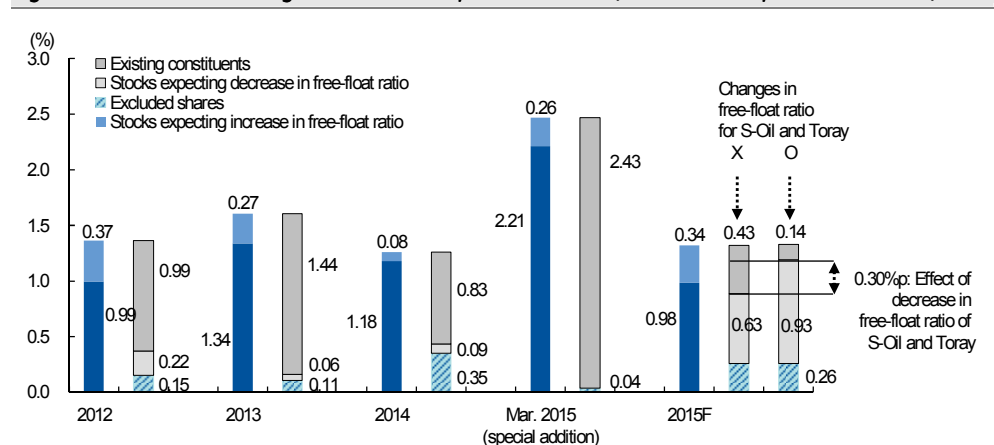
It is also worth noting that Moorim P&P—despite its small weight—is likely to be held by many index funds, given that it is a traditional high-dividend stock. Thus, a potential downward adjustment to its free-float ratio could sharply boost selling pressure.

Table 5. Anticipated impact of rebalancing on index composition

	Mkt. cap (Wtr)	Assuming no change in free-float ratio of S-Oil and Toray Chemical Korea		Assuming change in free-float ratio of S-Oil and Toray Chemical Korea	
		Free-float market cap (Wtr)	Weight in index (% , %p)	Free-float market cap (Wtr)	Weight in index (% , %p)
Current	1,090.88	706.2	100	706.2	100
Revised	1,101.72	709.47	100	707.25	100
Difference	10.84	3.27	0	1.04	0
- New entrants	14.02	6.96	0.98	6.96	0.98
- Deleted stocks	-3.18	-1.84	-0.26	-1.84	-0.26
- Free-float ratio increase		2.44	0.34	2.44	0.34
- Free-float ratio decrease		-4.31	-0.63	-6.53	-0.93
- Current stocks			-0.43		-0.14

Notes: As of May 8th  
Source: KDB Daewoo Securities Research

Figure 1. Annual rebalancing results and this year’s variables (S-Oil and Toray Chemical Korea)



Note: As of May 8th  
Source: KDB Daewoo Securities Research

Table 6. Changes in weights of KOSPI 200 constituents

	Tickers	Companies	Weights in index			Rank in index			Potential demand from index trackers (Wbn, A)	20TD trading value (Wbn, B)	Buying/selling pressure (A/B)
			Before (%)	After (%)	Change (%p)	Before	After	Change			
Addition	009240 KS	Hanssem		0.29	0.29		71		99.0	17.4	5.69
	064350 KS	Hyundai Rotem		0.12	0.12		114		41.5	6.5	6.38
	192820 KS	Cosmax		0.14	0.14		106		47.2	19.8	2.38
	004700 KS	Chokwang Leather		0.04	0.04		170		12.2	0.7	16.96
	185750 KS	Chong Kun Dang		0.07	0.07		142		23.7	10.6	2.24
	079430 KS	Hyundai Livart		0.06	0.06		149		21.9	6.3	3.51
	014820 KS	Dongwon Systems		0.03	0.03		177		10.2	3.6	2.86
	036580 KS	Farmsco		0.03	0.03		180		9.9	4.9	2.02
	000050 KS	Kyungbang		0.05	0.05		163		15.3	0.9	17.62
	014680 KS	Hansol Chemical		0.09	0.09		128		29.5	4.5	6.52
	042700 KS	Hanmi Semiconductor		0.02	0.02		186		8.1	2.1	3.82
	000230 KS	Ildong Pharm.		0.05	0.05		165		15.3	6.0	2.56
Increase in free-float ratio	024110 KS	Industrial Bank of Korea	0.41	0.59	0.18	54	38	▲16	59.4	44.1	1.35
	009830 KS	Hanwha Chemical	0.20	0.23	0.04	89	80	▲9	12.1	51.4	0.24
	011070 KS	LG Innotek	0.17	0.20	0.03	98	91	▲7	11.2	23.3	0.48
	051600 KS	KEPCO KPS	0.23	0.28	0.06	78	72	▲6	19.1	14.1	1.35
	052690 KS	KEPCO E&C	0.06	0.08	0.02	149	137	▲12	7.5	11.7	0.64
	073240 KS	Kumho Tire	0.17	0.19	0.02	96	93	▲3	7.1	8.1	0.88
Deletion	013570 KS	DY	0.02	-0.02		193			-5.7	1.1	-5.34
	000430 KS	Daewon	0.04	-0.04		163			-12.2	0.1	-96.77
	000990 KS	Dongbu HiTek	0.03	-0.03		174			-9.6	6.6	-1.45
	004130 KS	Daeduck GDS	0.03	-0.03		179			-8.8	2.7	-3.3
	004150 KS	Hansol Holdings	0.02	-0.02		181			-8.1	2.3	-3.49
	004430 KS	Songwon Ind.	0.02	-0.02		187			-6.8	2.4	-2.78
	005950 KS	Isu Chemical	0.02	-0.02		197			-5.1	2.1	-2.47
	006380 KS	Capro	0.02	-0.02		192			-5.7	3.4	-1.69
	007810 KS	Korea Circuit	0.01	-0.01		198			-5.0	3.1	-1.59
	016800 KS	Fursys	0.02	-0.02		189			-6.5	0.2	-31.64
	020760 KS	Iljin Display	0.02	-0.02		180			-8.1	13.5	-0.6
033240 KS	Jahwa Electronics	0.02	-0.02		190			-6.5	2.2	-2.98	
Decrease in free-float ratio	006120 KS	SK Chemicals	0.16	0.14	-0.02	99	105	▼6	-7.0	26.3	-0.26
	010140 KS	Samsung Heavy Ind.	0.45	0.39	-0.06	52	57	▼5	-20.4	44.1	-0.46
	035420 KS	NAVER	2.56	2.27	-0.29	6	7	▼1	-97.5	101.6	-0.96
	000100 KS	Yuhan	0.35	0.31	-0.04	62	68	▼6	-14.1	14.9	-0.95
	003600 KS	SK Holdings	0.71	0.53	-0.18	33	41	▼8	-60.8	21.9	-2.77
	009580 KS	Moorim P&P	0.02	0.02	-0.01	182	194	▼12	-2.2	1.3	-1.72
	051310 KS	POSCO Plantec	0.03	0.01	-0.02	168	200	▼32	-6.7	4.4	-1.51
	008000 KS	Toray Chemical Korea	0.05	0.02	-0.03	153	192	▼39	-11.1	5.8	-1.91
	010950 KS	S-Oil	0.73	0.45	-0.28	31	52	▼21	-95.8	31.0	-3.09
	Other stocks	005930 KS	Samsung Electronics	20.9	20.9	-0.03	1	1	-	-10.5	343.4
000660 KS		SK Hynix	3.79	3.78	-0.01	2	2	-	-1.9	142.6	-0.01
005380 KS		Hyundai Motor	3.78	3.77	-0.01	3	3	-	-1.9	121.9	-0.02
055550 KS		Shinhan FG	2.66	2.65	0.00	5	5	-	-1.3	58.8	-0.02
005490 KS		POSCO	2.74	2.73	0.00	4	4	-	-1.4	76.5	-0.02
012330 KS		Hyundai Mobis	2.29	2.29	0.00	7	6	▲1	-1.1	63.9	-0.02
017670 KS		SK Telecom	2.05	2.05	0.00	10	10	-	-1.0	72.0	-0.01
015760 KS		KEPCO	2.08	2.08	0.00	9	9	-	-1.0	56.9	-0.02
105560 KS		KB Financial Group	2.12	2.12	0.00	8	8	-	-1.1	49.1	-0.02
000270 KS		Kia Motors	1.94	1.94	0.00	11	11	-	-1.0	85.3	-0.01

Notes: As of May 8th; Assuming the AUM of KOSPI 200 trackers at W35tr

Source: KDB Daewoo Securities Research

## Analysis of past reconstitutions

### Returns before and after public disclosure and June futures expiration date

Four main patterns are evident when examining past returns before and after the public disclosure of the reconstitution plan and the June futures expiration date. First, returns on stocks expected to be included in the KOSPI 200 have risen before and after the public disclosure and the June futures expiration date, while returns on outgoing stocks have declined. This pattern indicates that event-driven strategies based on regular reconstitutions have been effective. Second, buying or selling before public disclosure has generated high returns relative to other strategies when investors saw gains from doing so, but this strategy has also generated high losses in cases where investors incurred losses. Third, returns from the selling of outgoing stocks have outstripped returns from the buying of new entrants. And lastly, adopting a long-short strategy—i.e., long new entrants + short outgoing—has been more effective than holding long- or short-only baskets, delivering higher returns and risk-adjusted returns and recording lower volatility of returns.

### When to long/short baskets and unwind positions

We also studied investment returns depending on long/short timing for the past six years. Our analysis reveals that the ideal time to enter into a long basket was 15 days before the reconstitution date, and that of unwinding the basket was on the June expiration date or the day before. In comparison, the best time to short an outgoing basket or take a long-short strategy was flexible, but for both strategies, the best time to unwind the position was on the June expiration date or the day before.

### Take a selective approach to basket rebalancing

We believe an efficient approach for investors is to narrow the scope of basket rebalancing, rather than try to reflect all of the changes to the index. Taking six factors (such as share price and trading volume) into account, we found that in the past, returns and risk-adjusted returns were healthy for both long and short baskets when the rebalancing scope was narrowed, especially based on free-float market cap.

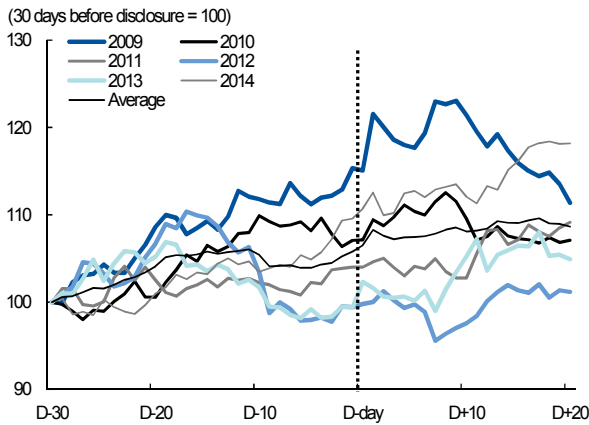
Based on free-float market cap, we expect that, among the stocks likely to be added, Hanssem, Cosmax, Hyundai Rotem, and Hansol Chemical will fare strongly. And among stocks expected to be deleted, Fursys, Capro, Korea Circuit, and DY will likely perform poorly.

**Table 7. Performance of equal-weighted basket for the last six years** (%)

	Daily excess returns relative to KOSPI 200			Standard deviation of daily excess returns			Daily excess returns/standard deviation			Cumulative return for 20TD before June expiration		
	Long additions	Short deletions	Long/short	Long additions	Short deletions	Long/short	Long additions	Short deletions	Long/short	Long additions	Short deletions	Long/short
2009	0.23	-0.80	1.02	1.78	1.24	2.34	0.13	-0.64	0.44	4.30	-14.95	19.25
2010	0.00	-0.30	0.30	1.11	1.42	1.68	0.00	-0.21	0.18	-0.09	-5.98	5.89
2011	0.08	-0.59	0.67	0.69	1.71	1.88	0.12	-0.35	0.36	1.59	-11.44	13.03
2012	-0.57	-0.41	-0.17	1.58	1.09	1.72	-0.36	-0.37	-0.10	-11.11	-7.91	-3.20
2013	0.37	-0.10	0.47	1.33	1.18	1.52	0.28	-0.09	0.31	7.39	-2.12	9.51
2014	0.39	-0.33	0.72	1.08	1.59	2.27	0.36	-0.21	0.32	7.96	-6.69	14.65
Average	0.08	-0.42	0.50	1.26	1.37	1.90	0.09	-0.31	0.25	1.67	-8.18	9.86

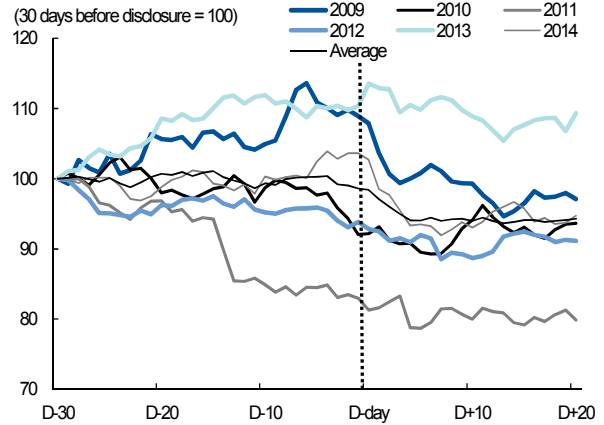
Notes: Assuming that positions are taken 20TD before June expiration date; Arithmetic average of excess returns over KOSPI 200 for the 20 days until maturity  
Source: KDB Daewoo Securities Research

**Figure 2. New entrants have surged before public disclosure**



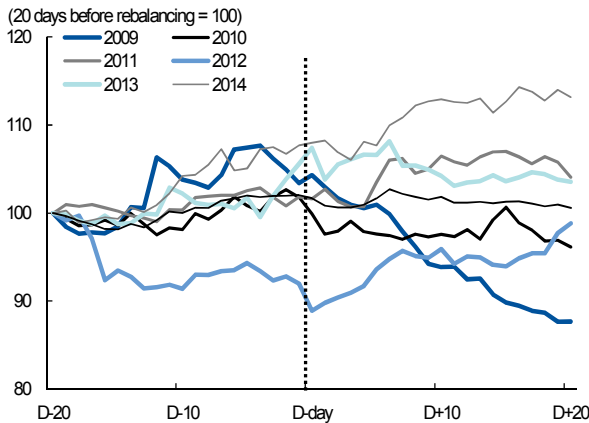
Notes: Cumulative excess returns of new entrants basket relative to KOSPI 200 over the 30 trading days before disclosure  
Source: KDB Daewoo Securities Research

**Figure 3. Outgoing stocks have declined before public disclosure, and declined more steeply after disclosure**



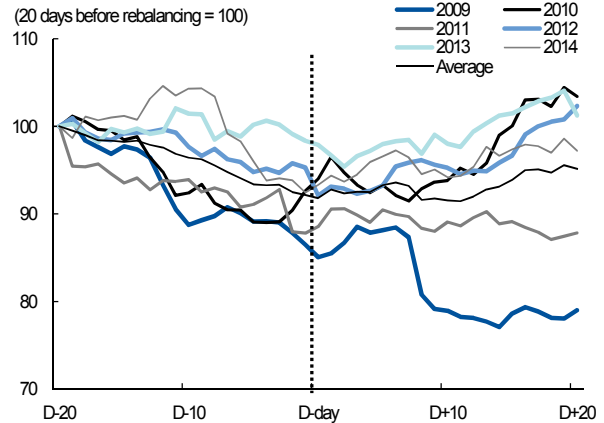
Notes: Cumulative excess returns of outgoing shares basket relative to KOSPI 200 over the 30 trading days before disclosure  
Source: KDB Daewoo Securities Research

**Figure 4. New entrants tend to lose momentum after addition, but have recently kept momentum even afterwards**



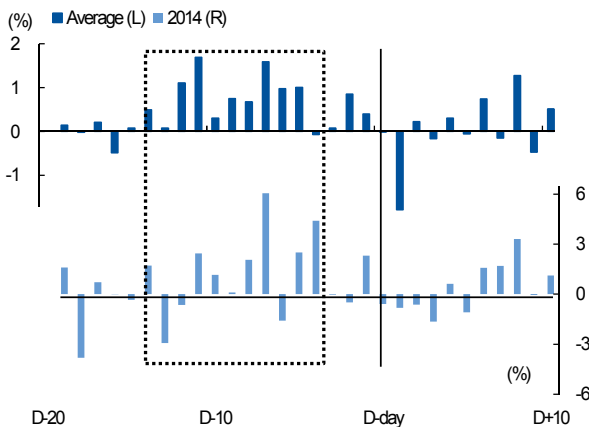
Notes: Cumulative excess returns of new entrants basket relative to K200 over the 20 trading days before the June futures expiration  
Source: KDB Daewoo Securities Research

**Figure 5. Outgoing shares have tended to rebound after the deletion**



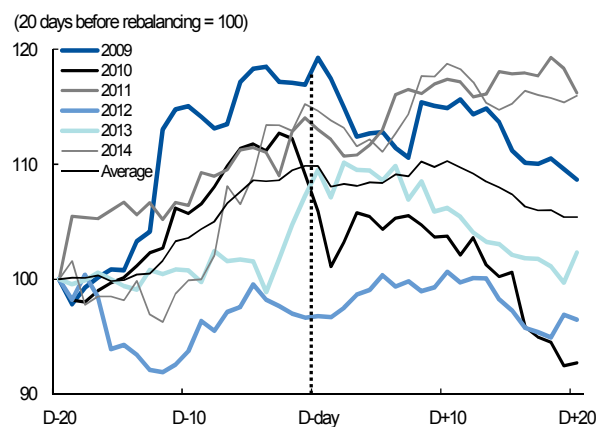
Notes: Cumulative excess returns of excluded shares basket relative to KOSPI 200 over the 20 trading days before the June futures expiration date  
Source: KDB Daewoo Securities Research

**Figure 6. Adopting a long-short strategy, profits were usually concentrated 1-2 weeks before the futures expiration date**



Notes: 2014 and six-year average daily excess returns of equal-weighted basket over the 20 trading days before the June futures expiration date  
Source: KDB Daewoo Securities Research

**Figure 7. With a long-short strategy, best time to unwind the position is on the futures expiration date or the day before**



Notes: Cumulative excess returns of equal-weighted basket over the 20 trading days before the June futures expiration date  
Source: KDB Daewoo Securities Research

# APPENDIX 1

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