

Materials / Korea 16 October 2013

POSCO 005490 KS

 $\text{Target (KRW): } \textbf{320,000} \rightarrow \textbf{320,000}$

000 Upside: 2.4%

15 Oct price (KRW): 312,500

Still lacking upside momentum

Sung Yop Chung (82) 2 787 9157 sychung@kr.daiwacm.com

- 2H13 earnings tracking weaker than we expected
- Still difficult to raise prices, despite possible demand recovery
- Risk-reward profile does not look particularly appealing

What's new

We believe that the company's 2H13 earnings are tracking weaker than we expected previously.

What's the impact

We are cutting our 2013E EPS by 17% to factor in a cut to our 2H13 earnings forecast. However, we are raising our 2014 EPS forecast by 5% as we now expect higher shipments and lower iron-ore prices than we forecast previously.

POSCO is due to announce its 3Q13 results on 24 October. Factoring in: 1) a drop of KRW20,000/tonne QoQ in the per-tonne carbon steel ASP to KRW789,000 in 3Q13, compared with our previous forecast of a 3% QoQ rise to KRW833,000, 2) a 3% cut to our 3Q13 shipment forecast to 8.3m tonnes, and 3) weak non-steel business earnings for its trading, energy, and ICT business, we are cutting our 3Q13 revenue and operating-profit forecasts by 4% to KRW15.1tn (from KRW15.7tn) and 8% to KRW695bn (from KRW755bn), respectively. These are

below the respective Bloombergconsensus forecasts by 3% and 5%.

We now forecast POSCO's 4Q13 operating-profit to rise by 28% QoQ to KRW891bn (KRW920bn previously), mainly due to: 1) a sharp decline in the combined input cost for iron-ore and coking coal of KRW20,000/tonne QoQ to KRW379,000/tonne, and 2) an improvement in earnings for its construction business. We are cutting our forecast as we do not expect the company to raise domestic HRC prices by a large amount from the current KRW730,000/tonne.

According to Korea Metal Journal, the price gap between domestic HRC and imported HRC products has widened to KRW50,000-KRW60,000/tonne over the past month, which does not bode well for POSCO's attempts to raise prices. We expect a continued downward trend in China HRC prices. Thus, while we forecast a 3% YoY increase in POSCO's 2014 steel demand to 35m tonnes (with a moderate recovery in its downstream industries), we do not expect a major upswing in the company's earnings-revision cycle for 2014.

What we recommend

We maintain our Hold (3) rating and Gordon Growth Model-based sixmonth target price of KRW320,000. We believe POSCO's share price will see some support given its 10.5% YTD decline, with a possible QoQ rebound in 4Q13 earnings, and with the stock trading currently at a 2013E PBR of 0.6x with a 2013E ROE of 5.3%. However, we see limited upside potential as: 1) we expect the weak pricing environment to persist for HRC given an oversupply, and 2) continued market-share losses to Hyundai Steel (004020 KS, KRW87,000, Outperform [2]) and Hyundai Hysco (010520 KS, KRW40,100, Hold [3]) in Korea. Upside catalysts to our call include a significant rebound in global steel prices. A main downside risk is weaker-than-expected demand from downstream industries.

How we differ

1 Buy

5 Sell

2 Outperform
3 Hold (unchanged)
4 Underperform

Our 2013-14E EPS are 5-7% higher than those of the consensus, as we are more bullish on POSCO's shipments.

Forecast revisions (%)

Year to 31 Dec	13E	14E	15E
Revenue change	(0.9)	1.7	1.8
Net profit change	(17.1)	5.1	1.9
Core EPS (FD) change	(17.1)	5.1	1.9

Source: Daiwa forecasts

Share price performance



12-month range	292,500-371,000
Market cap (USDbn)	25.54
3m avg daily turnover (USD	m) 72.31
Shares outstanding (m)	87
Major shareholder	National Pension Service (5.4%)

Financial summary (KRW)

Year to 31 Dec	13E	14E	15E
Revenue (bn)	61,933	64,248	66,458
Operating profit (bn)	3,206	3,793	4,150
Net profit (bn)	2,255	3,092	3,307
Core EPS (fully-diluted)	25,862	35,462	37,932
EPS change (%)	(5.5)	37.1	7.0
Daiwa vs Cons. EPS (%)	5.4	7.0	5.8
PER (x)	12.1	8.8	8.2
Dividend yield (%)	2.6	2.6	2.6
DPS	8,000	8,000	8,000
PBR (x)	0.6	0.6	0.6
EV/EBITDA (x)	6.8	6.2	5.9
ROE (%)	5.3	7.0	7.1

Source: FactSet, Daiwa forecasts



Global steel companies: valuation summary

																EV/EB	ITDA					Div.	yield		
BBG code			Share	Daiwa	Mkt cap	Α	bsolute	e (%)	**	Relativ	e (%)	PER	(x)	PBR	(x)	(X))	P/CF	F (x)	ROE	(%)	(%	6)	OPM	(%)
		Curr.	price	rating	(USDm)	YTD	1M	3M	YTD	1M	3M	13E	14E	13E -	14E	13E	14E	13E	14E	13E	14E	13E	14E	13E	14E
Korea	-		-													-				-					
POSCO*	005490 KS	KRW	312,500	Hold	25,509	(10.5)	(4.4)	(0.3)	(12.6)	(6.7)	(9.1)	12.1	8.8	0.6	0.6	6.8	6.2	4.4	5.2	5.3	7.0	2.6	2.6	5.2	5.9
Hyundai Steel*	004020 KS	KRW	87,000	Outperform	7,005	(0.9)	9.0	28.3	(3.0)	6.8	19.6	11.7	9.0	0.7	0.7	11.9	8.6	1.2	1.4	6.3	7.8	0.7	0.8	6.0	8.0
Hyundai Hysco*	010520 KS	KRW	40,100	Hold	3,127	(11.8)	(12.6)	5.8	(13.9)	(14.9)	(2.9)	10.8	8.9	1.5	1.3	5.0	4.4	0.5	0.6	15.0	15.7	0.7	0.7	5.2	5.3
Dongkuk Steel Mill	001230 KS	KRW	15,650	Not rated	912	14.2	7.6	25.2	12.1	5.3	16.5	(7.9)	(14.0)	0.4	0.4	14.0	13.4	3.6	4.5	(4.7)	(2.4)	3.2	3.1	0.9	1.4
Japan																									
Nippon Steel	5401 JP	JPY	343	Outperform	32,788	63.3	3.9	14.7	24.2	3.0	15.2	13.5	11.9	1.2	1.2	9.4	8.5	5.7	5.6	9.1	9.7	1.4	1.7	5.6	7.0
JFE Holdings	5411 JP	JPY	2,507	Hold	15,694	56.5	(3.4)	1.0	17.4	(4.3)	1.5	10.8	8.7	0.9	0.8	7.7	6.8	4.9	4.2	8.2	9.1	2.0	2.3	5.7	7.0
Kobe Steel	5406 JP	JPY	177	Hold	5,564	62.4	1.7	23.8	23.3	0.8	24.3	9.4	11.5	0.9	0.9	8.3	7.8	4.0	4.2	10.3	7.6	1.0	1.3	5.0	5.4
China																									
Baoshan Iron & Steel	600019 CH	CHY	4.2	Not rated	11,422	(13.7)	(5.8)	3.7	(11.1)	(4.6)	(3.7)	10.0	8.8	0.6	0.6	6.7	6.0	4.9	3.9	6.1	7.1	3.8	4.4	4.9	5.7
Angang Steel	347 HK	CHY	4.7	Buy	3,740	(16.9)	(11.3)	11.8	(19.4)	(12.6)	2.9	24.6	14.8	0.6	0.5	6.3	5.8	2.5	5.2	2.3	3.8	2.0	3.4	4.0	4.9
US																									
Nucor Corp	NUE US	USD	49.5	Not rated	15,744	14.6	2.4	9.3	(4.4)	1.8	8.4	36.3	15.5	2.1	1.9	12.4	7.8	13.0	9.9	5.5	12.4	3.0	3.0	4.7	8.8
United States Steel	X US	USD	23.5	Not rated	3,402	(1.4)	18.4	31.1	(20.4)	17.8	30.2	(16.6)	30.5	0.9	0.9	8.9	6.0	5.9	5.1	(5.5)	3.5	0.9	0.9	0.4	2.1
Steel Dynamics	STLD US	USD	17.2	Not rated	3,802	25.4	2.6	12.3	6.4	2.0	11.3	20.4	11.8	1.5	1.4	9.1	6.6	11.2	8.2	7.5	11.9	2.5	2.5	5.5	8.3
Other																									
Arcelor Mittal	MT NA	EUR	11.3	Not rated	26,508	(12.8)	7.2	22.3	(24.2)	5.9	18.1	(32.6)	12.7	0.4	0.4	7.0	5.8	4.9	3.7	(1.3)	2.6	1.9	2.3	2.4	3.9
Steel Authority Of India	SAIL IN	INR	57.5	Outperform	3,845	(36.6)	16.9	19.0	(42.3)	12.7	16.5	6.9	6.5	0.6	0.5	6.6	6.4	3.7	3.0	8.3	8.2	2.5	2.6	10.6	11.0
Tata Steel	TATA IN	INR	310.5	Buy	4,882	(27.5)	4.1	20.6	(33.3)	(0.0)	18.0	(4.3)	7.9	1.3	1.2	7.1	6.3	2.2	2.8	1.0	10.0	2.4	3.1	5.0	6.1
Global average					10,930	7.0	2.4	15.2	(6.7)	0.9	11.1	7.0	10.2	0.9	0.9	8.5	7.1	4.8	4.5	4.9	7.6	2.0	2.3	4.7	6.0
0 pl 1	× D + C																								

Source: Bloomberg, *Daiwa forecasts

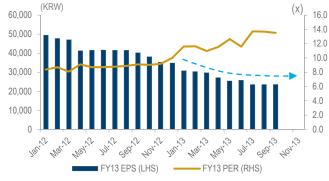
Note: 1) Share prices are as at 15 October 2013 (US and others as of 14 October 2013), 2) **Relative to each country index

POSCO: 3Q13 earnings preview

(KRWbn)	3Q13E Daiwa	3Q13E BBG	Diff (%)	3Q12	YoY (%)	2Q13	QoQ (%)
Revenue	15,111	15,539	(2.8)	15,739	(4.0)	15,603	(3.2)
Operating profit	695	734	(5.3)	997	(30.3)	903	(23.0)
Operating-profit margin (%)	4.6	4.7		6.3		5.8	
Net profit	634	643	(1.5)	723	(12.4)	241	163.5
NP margin (%)	4.2	4.1		4.6		1.5	

Source: Company, Bloomberg, Daiwa forecasts

POSCO: consensus EPS and PER forecast revisions



Source: Bloomberg

POSCO: major changes to assumptions

		2013E			2014E				
	New	Prev.	% Chg	New	Prev.	% Chg	New	Prev.	% Chg
Total shipments ('000 tonnes)	34,162	34,267	0%	35,317	33,893	4%	36,916	36,086	2%
Carbon steel ASP ('000 KRW)	793	810	-2%	788	818	-4%	790	818	-3%
HRC shipments ('000 tonnes)	7,481	7,728	-3%	8,262	8,060	3%	8,579	8,148	5%
HRC ASP ('000 KRW)	696	680	2%	695	677	3%	695	660	5%
Iron ore: input price (USD/tonne)	127	128	-1%	127	137	-8%	121	138	-12%
Coking coal: input price (USD/ tonne)	165	172.0	-4%	150	182	-18%	148	182	-19%
COGS (KRWtn)	53,658	55,529	-3%	54,722	56,163	-3%	56,983	58,094	-2%

Source: Daiwa forecasts

China HRC export prices & iron-ore spot prices



Source: Bloomberg

Note: Iron ore spot prices = China import iron ore fines 62% Fe from Australia



Financial summary

Year to 31 Dec	2008	2009	2010	2011	2012	2013E	2014E	2015E
HRC price (KRW '000/tonne)	n.a.	708,061	783,937	847,419	758,418	695,947	695,348	695,345
HRC shipment ('000 tonne)	n.a.	7,642	7,757	8,036	8,136	7,481	8,262	8,579
CRC price (KRW '000/tonne)	n.a.	833,081	924,329	1,026,734	943,059	827,234	806,696	776,622
CRC shipment ('000 tonne)	n.a.	10,568	12,779	13,084	13,544	14,175	13,870	14,189
Iron Ore price (USD/tonne)	n.a.	69	113	163	132	121	120	119
Coking coal price (USD/ tonne)	n.a.	141	173	290	213	159	148	14
Profit and loss (KRWbn)								
Year to 31 Dec	2008	2009	2010	2011	2012	2013E	2014E	2015
Steel / Support	0	0	46,666	57,251	52,869	47,931	49,000	51,01
Trading	0	0	9,410	28,623	26,414	25,066	25,818	26,14
Other Revenue	41,743	36,855	4,562	(16,935)	(15,679)	(11,064)	(10,570)	(10,698
Total Revenue	41,743	36,855	60,638	68,939	63,604	61,933	64,248	66,45
Other income	0	0	0	0	0	0	0	
COGS	(32,562)	(31,037)	(51,561)	(59,824)	(56,143)	(53,658)	(54,722)	(56,983
SG&A	(470)	(451)	(752)	(832)	(927)	(902)	(936)	(968
Other op.expenses	(1,537)	(1,499)	(2,587)	(2,816)	(2,881)	(4,167)	(4,798)	(4,356
Operating profit	7,174	3,868	5,738	5,468	3,653	3,206	3,793	4,15
Net-interest inc./(exp.)	(92)	(256)	(328)	(572)	(593)	(628)	(665)	(704
Assoc/forex/extraord./others	(987)	127	(72)	(113)	308	281	737	68
Pre-tax profit	6,096	3,739	5,338	4,782	3,368	2,859	3,865	4,13
Tax	(1,734)	(536)	(1,113)	(1,068)	(983)	(604)	(773)	(82)
Min. int./pref. div./others	0	0	0	0	0	0	0	1-
Net profit (reported)	4,362	3,203	4,225	3,714	2,386	2,255	3,092	3,30
Net profit (adjusted)	4,362	3,203	4,225	3,714	2,386	2,255	3,092	3,30
EPS (reported)(KRW)	50,027	36,740	48,457	42,601	27,362	25,862	35,462	37,93
EPS (adjusted)(KRW)	50,027	36,740	48,457	42,601	27,362	25,862	35,462	37,93
EPS (adjusted fully-diluted)(KRW)	50,027	36,740	48,457	42,601	27,362	25,862	35,462	37,93
DPS (KRW)	10,000	8,000	10,000	10,000	10,000	8,000	8,000	8,00
EBIT	7,174	3,868	5,738	5,468	3,653	3,206	3,793	4,15
EBITDA	9.367	5,834	9,001	9.087	7,052	6,516	7,226	7,70
	-,	-,	- ,	-,	,		, .	, -
Cash flow (KRWbn)								
Year to 31 Dec	2008	2009	2010	2011	2012	2013E	2014E	2015
Profit before tax	6,096	3,739	5,338	4,782	3,368	2,859	3,865	4,13
Depreciation and amortisation	2,193	1,966	3,263	3,620	3,399	3,310	3,433	3,55
Tax paid	(1,734)	(536)	(1,113)	(1,068)	(983)	(604)	(773)	(82)
Change in working capital	(3,291)	124	1,321	(4,318)	2,160	261	(984)	(1,170
Other operational CF items	423	3,340	(6,784)	(1,398)	(626)	381	(290)	(274
Cash flow from operations	3,687	8,633	2,025	1,619	7,319	6,206	5,251	5,41
Сарех	(4,093)	(6,407)	(5,896)	(5,331)	(7,055)	(7,231)	(4,339)	(4,122
Net (acquisitions)/disposals	(1,411)	(3,398)	2,774	(43)	(522)	(502)	(573)	(60
Other investing CF items	(299)	88	(3,768)	(143)	1,407	(37)	(376)	(376
Cash flow from investing	(5,803)	(9,717)	(6,890)	(5,517)	(6,169)	(7,770)	(5,287)	(5,098
Change in debt	3,785	1,339	5,868	5,634	68	1,206	1,266	1,32
Net share issues/(repurchases)	0	0	0	0	0	0	0	,-
Dividends paid	(755)	(689)	(693)	(771)	(752)	(697)	(697)	(69)
Other financing CF items	87	212	504	37	(224)	2,334	(32)	(374
Cash flow from financing	3,117	862	5,679	4,900	(908)	2,843	536	25
Forex effect/others	0	002	0	4,300	(300)	2,045	0	25
Change in cash	1,001	(222)	814	1,002	243	1,278	500	57

Source: FactSet, Daiwa forecasts



Financial summary continued ...

Balance sheet (KRWbn)

A	,	0000	0040	0044	0040	00405	00445	00455
As at 31 Dec	2008	2009	2010	2011	2012	2013E	2014E	2015E
Cash & short-term investment	5,698	8,744	7,058	7,016	6,846	8,247	8,899	9,613
Inventory	8,662	5,153	9,803	12,284	10,585	11,030	11,096	11,555
Accounts receivable	6,433	5,593	8,681	12,557	12,541	10,666	11,243	11,630
Other current assets	1,295	740	1,181	1,700	1,595	1,675	1,758	1,846
Total current assets	22,088	20,230	26,723	33,557	31,566	31,618	32,997	34,644
Fixed assets	18,069	21,840	25,699	28,453	32,276	34,987	35,892	36,463
Goodwill & intangibles	724	630	3,161	5,245	5,662	5,945	6,243	6,555
Other non-current assets	6,080	7,612	12,362	11,154	9,761	10,511	11,324	12,207
Total assets	46,961	50,312	67,946	78,409	79,266	83,062	86,457	89,869
Short-term debt	3,586	3,543	8,780	10,363	9,610	10,091	10,595	11,125
Accounts payable	3,650	3,377	5,035	5,896	5,656	5,939	6,236	6,548
Other current liabilities	3,773	2,355	3,274	3,347	4,509	4,058	3,652	3,287
Total current liabilities	11,009	9,275	17,089	19,605	19,775	20,087	20,483	20,959
Long-term debt	6,960	8,290	10,678	16,394	14,504	15,229	15,990	16,790
Other non-current liabilities	648	1,083	2,977	1,679	2,558	4,837	4,750	4,320
Total liabilities	18,617	18,647	30,745	37,679	36,836	40,153	41,223	42,069
Share capital	482	482	482	482	482	482	482	482
Reserves/R.E./others	27,862	31,182	36,719	40,248	41,947	42,426	44,751	47,317
Shareholders' equity	28,344	31,664	37,201	40,730	42,429	42,908	45,234	47,800
Minority interests	0	0	0	0	0	0	0	0
Total equity & liabilities	46,961	50,312	67,946	78,409	79,266	83,062	86,457	89,869
EV	32,094	30,335	39,645	46,987	44,514	44,318	44,932	45,548
Net debt/(cash)	4,848	3,089	12,400	19,741	17,268	17,072	17,686	18,302
BVPS (KRW)	325,097	363,178	426,686	467,157	486,649	492,143	518,814	548,243
Key ratios (%)								
Year to 31 Dec	2008	2009	2010	2011	2012	2013E	2014E	2015E
Sales (YoY)	32.1	(11.7)	64.5	13.7	(7.7)	(2.6)	3.7	3.4
EBITDA (YoY)	42.2	(37.7)	54.3	1.0	(22.4)	(7.6)	10.9	6.6
Operating profit (YoY)	45.8	(46.1)	48.3	(4.7)	(33.2)	(12.2)	18.3	9.4
Net profit (YoY)	20.3	(26.6)	31.9	(12.1)	(35.8)	(5.5)	37.1	7.0
Core EPS (fully-diluted) (YoY)	20.3	(26.6)	31.9	(12.1)	(35.8)	(5.5)	37.1	7.0
Gross-profit margin	22.0	15.8	15.0	13.2	11.7	13.4	14.8	14.3
		1- 4						

Operating profit (YoY)	45.8	(46.1)	48.3	(4.7)	(33.2)	(12.2)	18.3	9.4
Net profit (YoY)	20.3	(26.6)	31.9	(12.1)	(35.8)	(5.5)	37.1	7.0
Core EPS (fully-diluted) (YoY)	20.3	(26.6)	31.9	(12.1)	(35.8)	(5.5)	37.1	7.0
Gross-profit margin	22.0	15.8	15.0	13.2	11.7	13.4	14.8	14.3
EBITDA margin	22.4	15.8	14.8	13.2	11.1	10.5	11.2	11.6
Operating-profit margin	17.2	10.5	9.5	7.9	5.7	5.2	5.9	6.2
Net profit margin	10.4	8.7	7.0	5.4	3.8	3.6	4.8	5.0
ROAE	16.3	10.7	12.3	9.5	5.7	5.3	7.0	7.1
ROAA	10.5	6.6	7.1	5.1	3.0	2.8	3.6	3.8
ROCE	20.7	9.4	11.5	8.8	5.5	4.8	5.4	5.6
ROIC	17.4	9.8	10.8	7.7	4.3	4.2	4.9	5.1
Net debt to equity	17.1	9.8	33.3	48.5	40.7	39.8	39.1	38.3
Effective tax rate	28.4	14.3	20.8	22.3	29.2	21.1	20.0	20.0
Accounts receivable (days)	46.7	59.5	43.0	56.2	72.0	68.4	62.2	62.8
Current ratio (x)	2.0	2.2	1.6	1.7	1.6	1.6	1.6	1.7
Net interest cover (x)	78.2	15.1	17.5	9.6	6.2	5.1	5.7	5.9
Net dividend payout	20.0	21.8	20.6	23.5	36.5	30.9	22.6	21.1
Free cash flow yield	n.a.	8.2	n.a.	n.a.	1.0	n.a.	3.4	4.7

Source: FactSet, Daiwa forecasts

Company profile

POSCO is the world's fourth-largest steel company and the third-largest steel company in Asia, after Nippon steel and Baosteel. POSCO's total crude-steel production was 33.7m tonnes in 2010, making the company the largest steel producer in Korea. POSCO has high economies of scale, given that it produces a total quantity of 34m tonnes at only two plants (Pohang and Kwangyang) and has storage and docking facilities.



Share price and Daiwa recommendation trend

POSCO: share price and Daiwa recommendation trend



Source: Daiwa

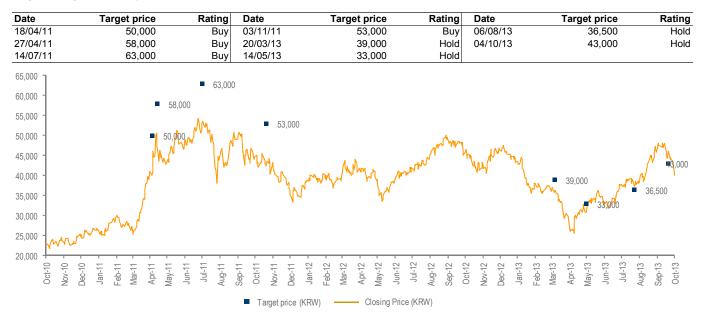
Hyundai Steel: share price and Daiwa recommendation trend

Date	Та	arget pri	ice		Rati	ng	Date				Targe	et pri	ice		Ra	ting	Da	ate			Та	rget	pric	e		Rating
28/01/11		165,0	000	Out	perfo	rm	10/02	2/12			1	05,0	000	Und	erperf	orm	19	/02/1	3			9	0,00	0		Hold
28/07/11		150,0	000	Out	perfo	rm	27/04	1/12			1	05,0	000		ŀ	lold	26	6/04/1	3			7	8,00	00		Hold
19/09/11		130,0	000	Out	perfo		12/06				1	05,0	000			Buy	01	/07/1	3			7	0,00	00		Hold
13/10/11		110,0	000	Out	perfo	rm	02/01	1/13			1	00,0	000	0	utperf	orm	10	/10/1	3			9	3,00	0	Ou	perform
180,000																										
160,000 -		165,00	00																							
		150,000				150,0	000																			
140,000 -		al d	NN,																							
†	135,000	Fhy	- ('n.	MY		130	0,000																		
120,000 -	N M	V.		In																						
	WW					M		110,0	00	_ <u>_</u> /	<u>w</u>															
100,000 -						1/1		M(\]	N M A	/ •	105,0	X00 ,	<u>ر</u>						■ 1	00,000)					
						V	lame	V V		•			١.	Δ.	m.	M			~		90,000)				93,000
80,000 -							W.						41)	√ [/] "	√*	M.	N	- n	~~	m.		78.000	n		m
																					v	yr~			1000	,
60,000						-			-				-											m ^m	-	
Oct-10	Jan-11 Jan-11	<u>,</u> <u>,</u>	<u></u>	May-11 Jun-11	Jul-11		Oct-11	<u>-</u>		Jan-12	Mar-12	Apr-12	May-12	Jun-12	Aug-12	-12	Oct-12	-1-1-	Jan-13	Feb-13	Mar-13	Apr-13	ulun-13	Jul-13	-13	Sep-13 Oct-13
100	Dec-10 Dec-10 Jan-11	Feb-11 Mar-11	Apr-11	May-11 Jun-11	Jul	Aug-11	Oct-11	Nov-11	Dec-11	Jar	Mar	Apr	May	Jun	Aug	Sep-12	Oct	Nov-12 Dec-12	Jan	Feb	Mai	Apr	und.	Jul	Aug-13	Sep-13 Oct-13

Source: Daiwa



Hyundai Hysco: share price and Daiwa recommendation trend



Source: Daiwa



Disclaimer

This publication is produced by Daiwa Securities Group Inc. and/or its non-U.S. affiliates, and distributed by Daiwa Securities Group Inc. and/or its non-U.S. affiliates, except to the extent expressly provided herein. This publication and the contents hereof are intended for information purposes only, and may be subject to change without further notice. Any use, disclosure, distribution, dissemination, copying, printing or reliance on this publication for any other purpose without our prior consent or approval is strictly prohibited. Neither Daiwa Securities Group Inc. nor any of its respective parent, holding, subsidiaries or affiliates, nor any of its respective directors, officers, servants and employees, represent nor warrant the accuracy or completeness of the information contained herein or as to the existence of other facts which might be significant, and will not accept any responsibility or liability whatsoever for any use of or reliance upon this publication or any of the contents hereof. Neither this publication nor any content hereof, constitute, or are to be construed as, an offer or solicitation of an offer to buy or sell any of the securities mentioned herein in any country or iurisdiction nor supresserves expressly provided any recommendation or investment onion or advice. Any view, recommendation securities or investments mentioned herein in any country or jurisdiction nor, unless expressly provided, any recommendation or investment option or advice. Any view, recommendation, opinion or advice expressed in this publication may not necessarily reflect those of Daiwa Securities Capital Markets Co. Ltd., and/or its affiliates nor any of its respective directors, officers, servants and employees except where the publication states otherwise. This research report is not to be relied upon by any person in making any investment decision or otherwise advising with respect to, or dealing in, the securities mentioned, as it does not take into account the specific investment objectives, financial situation and particular needs of any person.

Daiwa Securities Group Inc., its subsidiaries or affiliates, or its or their respective directors, officers and employees from time to time have trades as principals, or have positions in, or have other interests in the securities of the company under research including derivatives in respect of such securities or may have also performed investment banking and other services for the issuer of such securities. The following are additional disclosures.

Japan

Daiwa Securities Co. Ltd. and Daiwa Securities Group Inc. Daiwa Securities Co. Ltd. is a subsidiary of Daiwa Securities Group Inc. Investment Banking Relationship

Within the preceding 12 months, The subsidiaries and/or affiliates of Daiwa Securities Group Inc. * has lead-managed public offerings and/or secondary offerings (excluding straight bonds) of the securities of the following companies: REXLot Holdings Limited (555 HK); Huadian Fuxin Energy Corporation Limited (816 HK); Chaowei Power Holdings Limited (951 HK); CITIC Securities Company Limited (6030 HK); China Outflitters Holdings Limited (1146 HK); The People's Insurance Company (Group) of China Limited (1339 HK); China Precious Metal Resources Holdings Company Limited (1194 HK); Jiangnan Group Limited (1366 HK); Blackgold International Holdings Ltd (BGG AU); Tosei Corporation (8923 JP); Modern Land (China) Co. Ltd (1107 HK). *Subsidiaries of Daiwa Securities Group Inc. for the purposes of this section shall mean any one or more of: Daiwa Capital Markets Hong Kong Limited, Daiwa Capital Markets Singapore Limited, Daiwa Capital Markets Australia Limited, Daiwa Capital Markets India Private Limited, Daiwa-Cathay Capital Markets Co., Ltd., Daiwa Securities Capital Markets Korea Co., Ltd.

Hong Kong This research is distributed in Hong Kong by Daiwa Capital Markets Hong Kong Limited ("DHK") which is regulated by the Hong Kong Securities and Futures Commission. Recipients of this research in Hong Kong may contact DHK in respect of any matter arising from or in connection with this research.

Ownership of Securities

For "Ownership of Securities" information, please visit BlueMatrix disclosure Link at https://daiwa3.bluematrix.com/sellside/Disclosures.action.

Investment Banking Relationship For "Investment Banking Relationship", please visit BlueMatrix disclosure Link at https://daiwa3.bluematrix.com/sellside/Disclosures.action.

Relevant Relationship (DHK) DHK may from time to time have an individual employed by or associated with it serves as an officer of any of the companies under its research coverage. DHK market making

DHK may from time to time make a market in securities covered by this research.

Korea

The developing analyst of this research and analysis material hereby states and confirms that the contents of this material correctly reflect the analyst's views and opinions and that the analyst has not been placed under inappropriate pressure or interruption by an external party.

Name of Analyst : Sung Yop Chung

Disclosure of Analysts' Interests

If an analyst engaging in or a person who exercises influences on the preparation or publication of a Research Report containing recommendations for general investors to trade financial investment instruments with regard to which the analyst or the influential person has personal interests and if the recommendations contained in the Report may have impacts on the personal interests, Daiwa Securities Capital Markets Korea Co., Ltd.("Daiwa Securities Korea") shall ensure that the Analyst or the influential person notifies that he/she has personal interests with regard to:

The equity, the equity-linked bonds and the instruments with the subscription right to the equity issued by the legal entity covered in the Research Report (or the legal entity subject to the investment recommendations);

The stock option granted by the legal entity covered in the Research Report (or the legal entity subject to the investment recommendations); or The equity futures, the equity options and the equity-linked warrants backed by the equity prescribed in the preceding Paragraph 1 as the underlying assets. 3.

Legal Entities subject to Research Report Coverage Restrictions Daiwa Securities Korea hereby states and confirms that Daiwa Securities Korea has no conflicts of interests with the legal entity covered in this Research Report:

In that Daiwa Securities Korea does NOT offer direct or indirect payment guarantee for the legal entity by means of, for instance, guarantee, endorsement, provision of collaterals or the acquisition of debts;

- acquisition of decisity
 In that Daiwa Securities Korea does NOT own one-hundredth (or 1/100) or more of the total number of outstanding equities issued by the legal entity;
 In that The legal entity is NOT an affiliated company of Daiwa Securities Korea pursuant to Sub-paragraph 3, Article 2 of the Monopoly Regulation and Fair Trade Act of Korea;
 In that, although Daiwa Securities Korea offers advisory services for the legal entity with regard to an M&A deal, the size of the M&A deal does NOT exceed five-hundredths (or 5/100) of the total asset size or the total number of equities issued and outstanding of the legal entity;
- the total asset size or the total number of equites issued and outstanding of the legal entity; 5. In that, although Daiwa Securities Korea acted in the capacity of a Lead Underwriter for the initial public offering of the legal entity, more than one-year has passed since the IPO date; 6. In that Daiwa Securities Korea is NOT designated by the legal entity as the 'tender offer agent' pursuant to the Paragraph 2, Article 133 of the Financial Services and Capital Market Act or the legal entity is NOT the issuer of the equity subject to the proposed tender offer; this requirement, however applies until the maturity of the tender offer period; or 7. In that Daiwa Securities Korea does NOT have significant or material interests with regard to the legal entity.

Disclosure of Prior Distribution to Third Party This report has not been distributed to the third party in advance prior to public release.

The following explains the rating system in the report as compared to KOSPI, based on the beliefs of the author(s) of this report.

- "1": the security could outperform the KOSPI by more than 15% over the next six months.
 "2": the security is expected to outperform the KOSPI by 5-15% over the next six months.
 "3": the security is expected to perform within 5% of the KOSPI (better or worse) over the next six months.
 "4": the security is expected to underperform the KOSPI by 5-15% over the next six months.
 "5": the security could underperform the KOSPI by more than 15% over the next six months.

"Positive" means that the analyst expects the sector to outperform the KOSPI over the next six months. **"Neutral"** means that the analyst expects the sector to be in-line with the KOSPI over the next six months **"Negative"** means that the analyst expects the sector to underperform the KOSPI over the next six months

Additional information may be available upon request.



Singapore

Singapore This research is distributed in Singapore by Daiwa Capital Markets Singapore Limited and it may only be distributed in Singapore to accredited investors, expert investors and institutional investors as defined in the Financial Advisers Regulations and the Securities and Futures Act (Chapter 289), as amended from time to time. By virtue of distribution to these category of investors, Daiwa Capital Markets Singapore Limited and its representatives are not required to comply with Section 36 of the Financial Advisers Act (Chapter 110) (Section 36 relates to disclosure of Daiwa Capital Markets Singapore Limited's interest and/or its representative's interest in securities). Recipients of this research in Singapore may contact Daiwa Capital Markets Singapore Umited is memore of cany mother write and on the securities with the presentative's interest in securities). Singapore Limited in respect of any matter arising from or in connection with the research.

Australia

This research is distributed in Australia by Daiwa Capital Markets Stockbroking Limited and it may only be distributed in Australia to wholesale investors within the meaning of the Corporations Act. Recipients of this research in Australia may contact Daiwa Capital Markets Stockbroking Limited in respect of any matter arising from or in connection with the research. Ownership of Securities

For "Ownership of Securities" information, please visit BlueMatrix disclosure Link at https://daiwag.bluematrix.com/sellside/Disclosures.action.

India

This research is distributed by Daiwa Capital Markets India Private Limited (DAIWA) which is an intermediary registered with Securities & Exchange Board of India. This report is not to be considered as an offer or solicitation for any dealings in securities. While the information in this report has been compiled by DAIWA in good faith from sources believed to be reliable, no representation or warranty, express of implied, is made or given as to its accuracy, completeness or correctness. DAIWA its officers, employees, representatives and agents accept no liability whatsoever for any loss or damage whether direct, indirect, consequential or otherwise howsoever arising (whether in negligence or otherwise) out of or in connection with or from any use of or reliance on the contents of and/or omissions from this document. Consequently DAIWA expressly disclaims any and all liability for, or based on or relating to any such information contained required for the contents of and/of offissions from this document. Consequently DATWA expressive disclamas any and an inability for, of based off of relating to any store information contained in this document. The data contained in this document is subject to change without any prior notice DATWA reserves its right to modify this report as maybe required from time to time. DATWA is committed to providing independent recommended to seek your own legal, tax or other advice and should relaxed on or preview and analysis, in evaluating the information in this document. The data contained in this document is subject to change without any prior notice DATWA reserves its right to modify this report as maybe required from time to time. DATWA is committed to providing independent recommendations to its Clients and would be happy to provide any information in response to any query from its Clients. This report is strictly confidential and is being furnished to you solely for your information. The information chained in this document should not be reproduced (in whole or in part) or redistributed in any form to any other person. We and our group companies, affiliates, officers, directors and employees may from time to time, have long or short positions, in and buy sell or redistributed in any form to any other person. We and our group companies, annates, onicers, directors and employees may from time to time, have fong or short positions, in and our group companies, annates, onicers, directors and employees may from time to time, have fong or short positions, in and our group companies, annates, onicers, directors and employees may from time to time, have fong or short positions, in and our group companies, annates, onicers, directors and employees may from time to time, have fong or short positions, in and our group companies, and the positions, in the position of the companies of the position of the companies and employees may recommendation and related information or opinion. DAIWA prohibits its analyst and their family members from maintaining a financial interest in the securities or derivatives of any companies that the analyst cover. This report is not intended or directed for distribution to, or use by any person, citizen or entity which is resident or located in any state or country or jurisdiction where such publication, distribution or use would be contrary to any statutory legislation, or regulation which would require DAIWA and its offlicts of companies to any use of the product of account of the product of possible to account the terms of the product of account of the product of account of the product of account of the product of affiliates/ group companies to any registration or licensing requirements. The views expressed in the report accurately reflect the analyst's personal views about the securities and issuers that are subject of the Report, and that no part of the analyst's compensation was, is or will be directly or indirectly, related to the recommendations or views expressed in the Report. This report does not recommend to US recipients the use of Daiwa Capital Markets India Private Limited or any of its non – US affiliates to effect trades in any securities and is not supplied with any understanding that US recipients will direct commission business to Daiwa Capital Markets India Private Limited.

Taiwan

This research is distributed in Taiwan by Daiwa-Cathay Capital Markets Co., Ltd and it may only be distributed in Taiwan to institutional investors or specific investors who have signed recommendation contracts with Daiwa-Cathay Capital Markets Co., Ltd in accordance with the Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers. Recipients of this research in Taiwan may contact Daiwa-Cathay Capital Markets Co., Ltd in respect of any matter arising from or in connection with the research.

Philippines
This research is distributed in the Philippines by DBP-Daiwa Capital Markets Philippines, Inc. which is regulated by the Philippines Securities and Exchange Commission and the Philippines
Stock Exchange, Inc. Recipients of this research in the Philippines may contact DBP-Daiwa Capital Markets Philippines, Inc. in respect of any matter arising from or in connection with the
research. DBP-Daiwa Capital Markets Philippines, Inc. recommends that investors independently assess, with a professional advisor, the specific financial risks as well as the legal, regulatory,
tax, accounting, and other consequences of a proposed transaction. DBP-Daiwa Capital Markets Philippines, Inc. may have positions or may be materially interested in the securities in any of
the markets mentioned in the publication or may have performed other services for the issuers of such securities.
For relevant securities and trading rules please visit SEC and PSE Link at http://www.sec.gov.ph/irr/AmendedIRRfinalversion.pdf and http://www.sec.gov.ph/irr/Amen

United Kingdom

United Kingdom This research report is produced by Daiwa Capital Markets Europe Limited and/or its affiliates and is distributed in the European Union, Iceland, Liechtenstein, Norway and Switzerland. Daiwa Capital Markets Europe Limited is authorised and regulated by The Financial Conduct Authority ("FCA") and is a member of the London Stock Exchange, Eurex and NYSE Liffe. Daiwa Capital Markets Europe Limited and/or its affiliates may, from time to time, to the extent permitted by law, participate or invest in other financing transactions with the issuers of the securities referred to herein (the "Securities"), perform services for or solicit business from such issuers, and/or have a position or effect transactions in the Securities or options thereof and/or may have acted as an underwriter during the past twelve months for the issuer of such securities. In addition, employees of Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of such securities of public methers. Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of public methers are action of such securities. Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of public methers. Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of public methers. Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of the securities of the securities of the past twelve months for the securities of public methers. Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of public methers of public methers. Daiwa Capital Markets Europe Limited and/or its efflictes methers provide the securities of the securitie affiliates may have positions and effect transactions in such securities or options and may serve as Directors of such issuers. Daiwa Capital Markets Europe Limited may, to the extent permitted by applicable UK law and other applicable law or regulation, effect transactions in the Securities before this material is published to recipients.

This publication is intended for investors who are not Retail Clients in the United Kingdom within the meaning of the Rules of the FCA and should not therefore be distributed to such Retail Clients in the United Kingdom. Should you enter into investment business with Daiwa Capital Markets Europe's affiliates outside the United Kingdom, we are obliged to advise that the protection afforded by the United Kingdom regulatory system may not apply; in particular, the benefits of the Financial Services Compensation Scheme may not be available.

Daiwa Capital Markets Europe Limited has in place organisational arrangements for the prevention and avoidance of conflicts of interest. Our conflict management policy is available at http://www.uk.daiwacm.com/about-us/corporate-governance-and-regulatory. Regulatory disclosures of investment banking relationships are available at https://daiwa3.bluematrix.com/sellside/Disclosures.action.

Germany

This document has been approved by Daiwa Capital Markets Europe Limited and is distributed in Germany by Daiwa Capital Markets Europe Limited, Niederlassung Frankfurt which is regulated by BaFin (Bundesanstalt fuer Finanzdienstleistungsaufsicht) for the conduct of business in Germany.

This research material is issued/compiled by Daiwa Capital Markets Europe Limited, Bahrain Branch, regulated by The Central Bank of Bahrain and holds Investment Business Firm – Category 2 license and having its official place of business at the Bahrain World Trade Centre, South Tower, 7th floor, P.O. Box 30069, Manama, Kingdom of Bahrain. Tel No. +973 17534452 Fax No. +973 535113

This material is provided as a reference for making investment decisions and is not intended to be a solicitation for investment. Investment decisions should be made at your own discretion and risk. Accordingly, no representation or warranty, express or implied, is made as to and no reliance should be placed on the fairness, accuracy, completeness or correctness of the information and opinions contained in this document, Content herein is based on information available at the time the research material was prepared and may be amended or otherwise changed in the future without notice. All information is intended for the private use of the person to whom it is provided without any liability whatsoever on the part of Daiwa Capital Markets Europe Limited, Bahrain Branch, any associated company or the employees thereof. If you are in doubt about the suitability of the product or the research material is market as Line and Capital Markets Europe Limited, Bahrain Branch retains all rights related to the content of this material, which may not be redistributed or otherwise transmitted without any indivent constant. without prior consent.

This report is distributed in the U.S. by Daiwa Capital Markets America Inc. (DCMA). It may not be accurate or complete and should not be relied upon as such. It reflects the preparer's views at the time of its preparation, but may not reflect events occurring after its preparation; nor does it reflect DCMA's views at any time. Neither DCMA nor the preparer has any obligation to update this report or to continue to prepare research on this subject. This report is not an offer to sell or the solicitation of any offer to buy securities. Unless this report says otherwise, any recommendation it makes is risky or propriate only for sophisticated speculative investors able to incur significant losses. Readers should consult their financial advisors to determine whether any such recommendation is consistent with their own investment objectives, financial situation and needs. This report does not recommend to U.S. recipients the use of any of DCMA's non-U.S. affiliates to effect trades in any security and is not supplied with any understanding that U.S. recipients of this report will direct commission business to such non-U.S. entities. Unless applicable law permits otherwise, non-U.S. customers wishing to effect a transaction in any securities referenced in this material should contact a Daiwa entity in their local jurisdiction. Most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as a process for doing so. As a result, the securities discussed in this report may not be eligible for sales in some jurisdictions. Customers wishing to obtain further information about this report should contact DCMA: Daiwa Capital Markets America Inc., Financial Square, 32 Old Slip, New York, New York 10005 (telephone 212-612-7000).

Ownership of Securities For "Ownership of Securities" information please visit BlueMatrix disclosure Link at https://daiwa3.bluematrix.com/sellside/Disclosures.action.



Investment Banking Relationships For "Investment Banking Relationships" please visit BlueMatrix disclosure link at https://daiwa3.bluematrix.com/sellside/Disclosures.action.

DCMA Market Making

For "DCMA Market Making" please visit BlueMatrix disclosure link at https://daiway.bluematrix.com/sellside/Disclosures.action.

Research Analyst Conflicts

For updates on "Research Analyst Conflicts" please visit BlueMatrix disclosure link at https://daiwa3.bluematrix.com/sellside/Disclosures.action. The principal research analysts who prepared this report have no financial interest in securities of the issuers covered in the report, are not (nor are any members of their household) an officer, director or advisory board member of the issuer(s) covered in the report, and are not aware of any material relevant conflict of interest involving the analyst or DCMA, and did not receive any compensation from the issuer during the past 12 months except as noted: no exceptions.

Research Analyst Certification

The sector Analysis Certification? and "Rating System" please visit BlueMatrix disclosure link at https://daiwa3.bluematrix.com/sellside/Disclosures.action. The views about any and all of the subject securities and issuers expressed in this Research Report accurately reflect the personal views of the research analyst(s) primarily responsible for this report (or the views of the firm producing the report if no individual analysts[s] is named on the report); and no part of the compensation of such analyst(s) (or no part of the compensation of the firm if no individual analysts[s] is named on the report); and no part of the compensation of such analyst(s) (or no part of the compensation of the firm if no individual analysts[s] is named on the report); and no part of the specific recommendations or views contained in this Research Report.

The following explains the rating system in the report as compared to relevant local indices, based on the beliefs of the author of the report. "1": the security could outperform the local index by more than 15% over the next six months. "2": the security is expected to outperform the local index by 5-15% over the next six months. "3": the security is expected to perform within 5% of the local index (better or worse) over the next six months. "4": the security is expected to underperform the local index by 5-15% over the next six months. "5": the security is expected to underperform the local index by 5-15% over the next six months. "5": the security could underperform the local index by 5-15% over the next six months.

Additional information may be available upon request.

Japan - additional notification items pursuant to Article 37 of the Financial Instruments and Exchange Law (This Notification is only applicable where report is distributed by Daiwa Securities Co. Ltd.)

If you decide to enter into a business arrangement with us based on the information described in materials presented along with this document, we ask you to pay close attention to the following items.

- In addition to the purchase price of a financial instrument, we will collect a trading commission* for each transaction as agreed beforehand with you. Since commissions may be included in the purchase price or may not be charged for certain transactions, we recommend that you confirm the commission for each transaction.
- In some cases, we may also charge a maximum of ¥ 2 million (including tax) per year as a standing proxy fee for our deposit of your securities, if you are a non-resident of Japan. For derivative and margin transactions etc., we may require collateral or margin requirements in accordance with an agreement made beforehand with you. Ordinarily in such cases, the

- For derivative and margin transactions etc., we may require collateral or margin requirements in accordance with an agreement made beforenand with you. Ordinarity in such cases, une amount of the transaction will be in excess of the required collateral or margin requirements. There is a risk that you will incur losses on your transactions due to changes in the market price of financial instruments based on fluctuations in interest rates, exchange rates, stock prices, real estate prices, commodity prices, and others. In addition, depending on the content of the transaction, the loss could exceed the amount of the collateral or margin requirements. There may be a difference between bid price etc. and ask price etc. of OTC derivatives handled by us. Before engaging in any trading, please thoroughly confirm accounting and tax treatments regarding your trading in financial instruments with such experts as certified public accountants. "The amount of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of the content of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of such transactions of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of such transactions of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of such transactions of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of such transactions of the trading commission cannot be trading the content of such transactions of the trading commission cannot be trading the content of such transactio each transaction etc.

When making an actual transaction, please be sure to carefully read the materials presented to you prior to the execution of agreement, and to take responsibility for your own decisions regarding the signing of the agreement with us

Corporate Name: Daiwa Securities Co. Ltd.

Jaiwa Securities co. Edu. Financial Instruments firm: chief of Kanto Local Finance Bureau (Kin-sho) No.108 Japan Securities Dealers Association, Financial Futures Association of Japan Memberships: Japan Securities Investment Advisers Association Type II Financial Instruments Firms Association