| Machinery | Initiation of coverage | Germany |

Kuka AG

Ride the wave of Industry 4.0

Buy

Price 10/08/15	**€78.3**
12m target	**€99.0**
Upside to TP	**26.4%**
12m f'cast div	**€0.61**
12m TSR	**27.2%**

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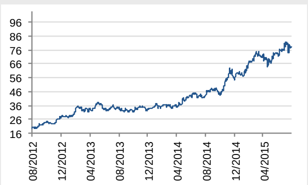
Sector stance
UNDERWEIGHT
Preferred stock
Volvo
Least preferred stock
Vallourec

Share price performance



Investment case As part of the expansion of our German coverage, we initiate coverage on Kuka, a Germany-based robotics and automation equipment supplier, with a Buy rating given a TSR of 27.2% (12m forecast dividend of €0.61) and €99 target price. We have a positive stance on Kuka for three reasons: 1) strong top-line growth from Industry 4.0, a mega trend that has just started, and additional increases in auto capex where we believe Kuka should gain more market share while moving further into the still-low automated final assembly stage; 2) the acquisition of Swisslog supports Kuka's accelerated move into general industry (up from 33% to 49% post merger) as it gives access to attractive growth markets such as healthcare and logistics; and 3) Kuka is also a self-help margin recovery story with a good track record in turning around challenging businesses. We expect the Swisslog EBITA margin to be lifted from 2.8% to 5.5% in 2017e and to 7.8% by 2020e. We are making a long-term call on Kuka that goes against the consensus. Note that only three other brokers out of 29 that cover the stock have Buy ratings on Kuka.

How we value the stock To capture Kuka's long-term growth and margin recovery potential from the Swisslog turnaround, we value the stock using a blend of a DCF-derived underlying valuation (€107, 8% norm. EBITA margin, 2.5% LT growth, 7.3% WACC) and a target multiple valuation based on 13.2x 2016e EV/EBIT of €90. We set our TP at the midpoint of these two valuations, i.e. €99. At our TP, Kuka would trade on 14.5x 2016e EV/EBIT, broadly in line with the peers we consider to be in the same quality bracket and at a 26% premium to a broader universe of small and midcap European industrials (see page 9 for peer group universe). We think Kuka deserves a premium to its midcap industrials peers as no other stock offers such pure exposure to the shift to Industry 4.0 which we expect to drive superior growth vs the sector, fuelling a margin recovery story. Although the shares have re-rated after the solid Q2 results and management has raised the 2015 guidance, we think the share price still does not fully value the group's impressive growth profile.

Events, catalysts & risks: Q3 results 11 November. Our 2015-17 estimates are 0-5% above Street on the top line and 14-26% above consensus EBIT and EPS. **Risk to TP**: overall slowing or deteriorating global economy causing a drop in global auto capex and general industry, which could result in lower revenues and earnings.

Share data			
RIC KU2G.DE, Bloom KU2 GR			
52-week range			81.5-43.0
EV 15 (€m)			2,724
Mkt cap. (€m)			2,796
Free float (%)			59.9
Performance (%)	**1m**	**3m**	**12m**
Ordinary shares	-1.7	11.9	88.1
Rel. Eurofirst 300	-4.4	12.2	54.9

Financial data	12/14	12/15e	12/16e	12/17e
Revenues (€bn)	2.10	2.89	3.09	3.34
EBIT margin (%)	6.9	6.5	7.3	7.9
Rep. net inc. (€m)	68.1	82.7	130	157
EPS (adj.) (€)	1.90	2.94	3.56	4.25
Dividend/share (€)	0.40	0.61	0.84	1.10
Payout (%)	21	26	23	25
Interest cover (x)	4.30	10.2	12.3	14.5
Net debt/equity (%)	nm	nm	nm	nm

Ratios	12/14	12/15e	12/16e	12/17e
P/E (x)	22.8	26.6	22.0	18.4
FCF yield (/EV) (%)	3.6	4.2	8.3	7.2
Dividend yield (%)	0.9	0.8	1.1	1.4
Price/book value (x)	2.95	4.39	3.75	3.20
EV/revenues (x)	0.78	0.94	0.83	0.73
EV/EBIT (x)	11.3	14.5	11.3	9.18
EV/IC (x)	2.5	4.1	4.1	3.7
ROIC/WACC (x)	2.9	2.6	3.4	4.0

EPS CAGR 14-17e: +30.6%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Kuka AG

Valuation (€m)	12/10	12/11	12/12	12/13	12/14	12/15e	12/16e	12/17e
Nb. of shares basic year end/outstanding	32.6	33.9	33.9	33.9	35.7	35.7	35.7	35.7
Share price (average)	12.4	16.2	19.5	33.2	43.3	78.3	78.3	78.3
Average market cap. (SG adjusted) (1)	403	548	661	1,127	1,547	2,796	2,796	2,796
Restated net debt (-)/cash (+) (2)	-131	-103	-39	73	-89	34	205	329
Value of minorities (3)	2	2	1	1	17	10	10	10
Value of financial investments (4)	1	0	0	0	23	47	47	47
Other adjustment (5)	0	0	0	0	0	0	0	0
EV = (1) - (2) + (3) - (4) + (5)	534	652	702	1,055	1,631	2,724	2,554	2,430
P/E (x)	nm	18.1	11.9	19.3	22.8	26.6	22.0	18.4
Price/cash flow (x)	nm	14.8	5.6	5.1	9.5	17.3	10.6	12.4
Price/free cash flow (x)	nm	83.1	8.57	7.67	21.8	30.6	15.7	19.3
Price/book value (x)	2.05	2.18	2.23	2.98	2.95	4.39	3.75	3.20
EV/revenues (x)	0.50	0.45	0.40	0.59	0.78	0.94	0.83	0.73
EV/EBITDA (x)	11.4	6.6	5.1	6.7	8.7	10.7	8.6	7.2
Dividend yield (%)	0.0	0.0	1.0	0.9	0.9	0.8	1.1	1.4
Per share data (€)								
SG EPS (adj.)	-0.28	0.89	1.64	1.72	1.90	2.94	3.56	4.25
Cash flow	-0.82	1.09	3.48	6.52	4.56	4.52	7.38	6.32
Book value	6.03	7.40	8.73	11.1	14.7	17.8	20.9	24.4
Dividend	0.00	0.00	0.20	0.30	0.40	0.61	0.84	1.10
Income statement (€m)								
Revenues	1,079	1,436	1,739	1,775	2,096	2,894	3,092	3,335
Gross income	211	290	393	445	529	731	781	842
EBITDA	47	99	139	159	188	254	296	338
Depreciation and amortisation	-22	-26	-29	-38	-44	-67	-70	-73
EBIT	25	73	110	120	145	187	226	265
Impairment losses	0	0	0	0	0	0	0	0
Net interest income	-29	-27	-20	-27	-29	-13	-13	-13
Exceptional & non-operating items	0	0	0	0	0	14	0	0
Taxation	-4	-16	-34	-35	-45	-45	-73	-85
Minority interests	0	0	0	0	0	1	0	0
Reported net income	-9	30	56	58	68	83	130	157
SG adjusted net income	-9	30	56	58	73	117	142	169
Cash flow statement (€m)								
EBITDA	47	99	139	159	188	254	296	338
Change in working capital	-19	-7	12	95	5	-15	72	-1
Other operating cash movements	-52	-56	-33	-33	-23	-65	-79	-90
Cash flow from operating activities	-25	36	118	221	170	175	289	247
Net capital expenditure	-13	-30	-41	-74	-94	-73	-90	-85
Free cash flow	-37	7	77	147	76	102	199	161
Cash flow from investing activities	0	0	0	-52	-272	32	0	0
Cash flow from financing activities	177	-42	-1	104	-114	-49	-22	-30
Net change in cash resulting from CF	142	-35	76	197	-303	91	177	131
Balance sheet (€m)								
Total long-term assets	297	297	300	328	798	801	811	813
of which intangible	27	29	33	33	205	263	260	258
Working capital	64	92	76	18	-101	-154	-226	-225
Employee benefit obligations	70	70	82	73	122	133	139	146
Shareholders' equity	197	251	296	378	524	637	745	872
Minority interests	2	2	1	1	17	10	10	10
Provisions	0	0	0	0	0	0	0	0
Net debt (-)/cash (+)	-60	-33	43	147	33	167	344	475
Accounting ratios								
ROIC (%)	6.9	17.6	24.6	26.9	21.2	18.6	24.6	28.8
ROE (%)	-4.8	13.3	20.3	17.3	15.1	14.3	18.8	19.4
Gross income/revenues (%)	19.6	20.2	22.6	25.1	25.3	25.3	25.3	25.3
EBITDA margin (%)	4.4	6.9	8.0	8.9	9.0	8.8	9.6	10.1
EBIT margin (%)	2.3	5.1	6.3	6.8	6.9	6.5	7.3	7.9
Revenue yoy growth (%)	19.6	33.1	21.1	2.0	18.1	38.1	6.9	7.8
Rev. organic growth (%)	19.6	33.1	21.1	-0.1	10.4	9.3	6.9	7.8
EBITDA yoy growth (%)	nm	nm	40.3	14.5	18.6	35.3	16.4	14.0
EBIT yoy growth (%)	nm	nm	51.2	9.7	20.1	29.6	20.6	17.1
EPS (adj.) yoy growth (%)	90.3	414.3	83.9	4.9	10.8	54.5	21.1	19.2
Dividend growth (%)	na	na	na	50.0	33.3	51.7	39.1	30.2
Cash conversion (%)	-15.7	67.8	119.7	nm	103.7	85.3	126.0	97.8
Net debt/equity (%)	30	13	nm	nm	nm	nm	nm	nm
FFO/net debt (%)	10.4	54.4	215.1	nm	128.2	nm	nm	nm
Dividend paid/FCF (%)	nm	0.0	8.8	6.9	18.8	21.3	15.2	24.3

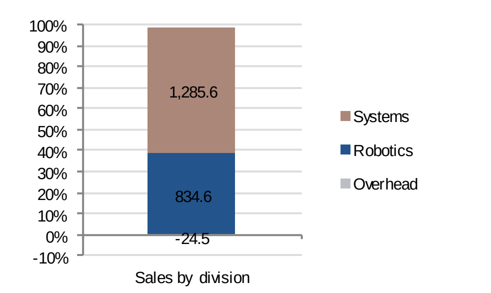
Source: SG Cross Asset Research/Equity

Contents

Group anatomy – business overview

Kuka is a leading provider of solutions in the automation of industrial processes. With its robotics and systems division, Kuka is a leading player in the field of mechanical and systems engineering. In 2014, Kuka acquired Swisslog, a leading Swiss based supplier of automation solutions for hospitals, warehouses, and distribution centres, covering the healthcare and e-commerce sector as well, boosting Kuka's general industry share from 33% to 49%.

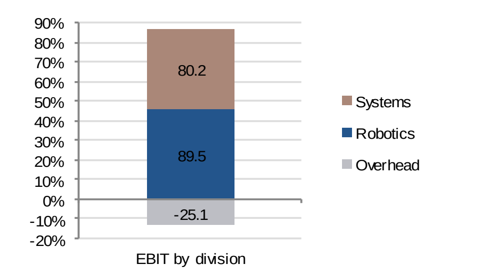
Sales/division 2014



Source: SG Cross Asset Research/Equity, company

Systems was the largest revenue contributor in 2014...

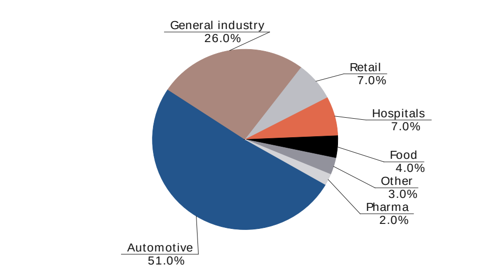
EBIT/division 2014



Source: SG Cross Asset Research/Equity, company

But robotics superior margins lead the division to be the strongest contributor to group EBIT

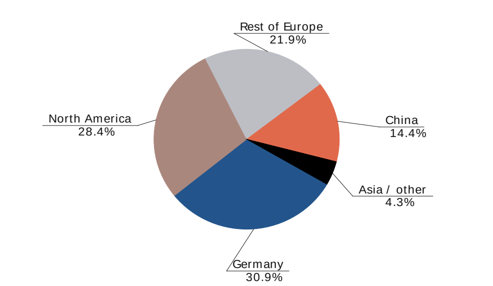
End-market exposure 2014 *pro forma*



Source: SG Cross Asset Research/Equity, company

General industry now accounts for almost half of Kuka's sales

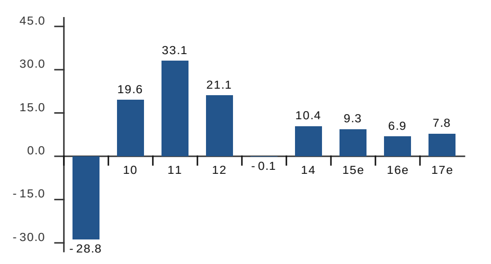
Sales/region 2014



Source: SG Cross Asset Research/Equity, company

China is becoming increasingly important for Kuka

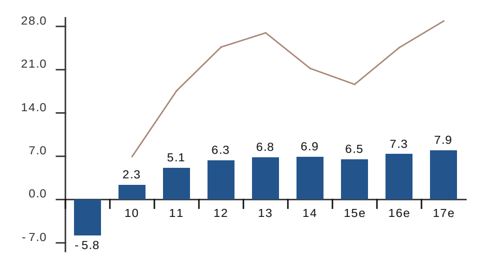
Revenues organic growth (%)



Source: SG Cross Asset Research/Equity

Kuka enjoys healthy organic growth

EBIT margin (blue) and ROIC (brown) (%)



Source: SG Cross Asset Research/Equity

Kuka's business requires a low capital employed, boosting ROIC

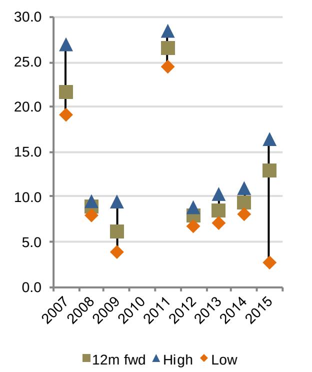
Competitive landscape

Business	Company market share	Sales CAGR (5y)	Company EBIT margin	Main players
Robotics	25-30% in automotive 5-10% in general industry	13.5%	10-12%	ABB, Fanuc, Yaskawa (Motoman) Stäubli, Nachi, Comau, Adept
Systems	c.20%	19.4%	5-7%	Comau, Thyssen, FFT, FBZ
Swisslog HCS	40% in AMTS (75-80% in North America, <10% in Europe and APAC) 2% in ADMS	-1.5%	6-10%	ADMS: CareFusion, Omnicell, AMTS: Aerocom, JBT Corporation, Sumetzberger, Pevco, Lamson, some niche player emerge
Swisslog WDS		4.0%	2-5%	Daifuku, Dematic, Jungheinrich, Kion (Egemin), Savoye, Schäfer, Sivaplan, Westfalia, Witron

Source: SG Cross Asset Research/Equity

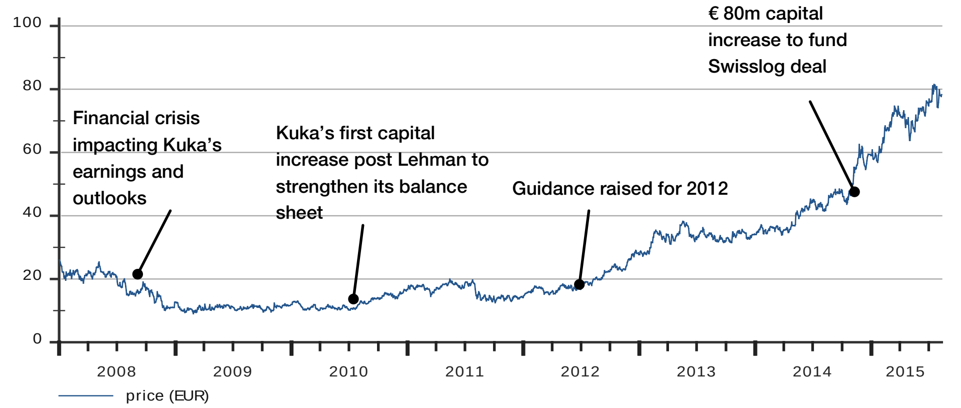
Share price drivers

EV/EBIT, 2007-15e



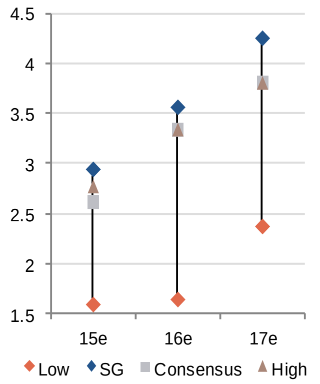
Source: SG Cross Asset Research/Equity

Kuka AG. Historical share price performance



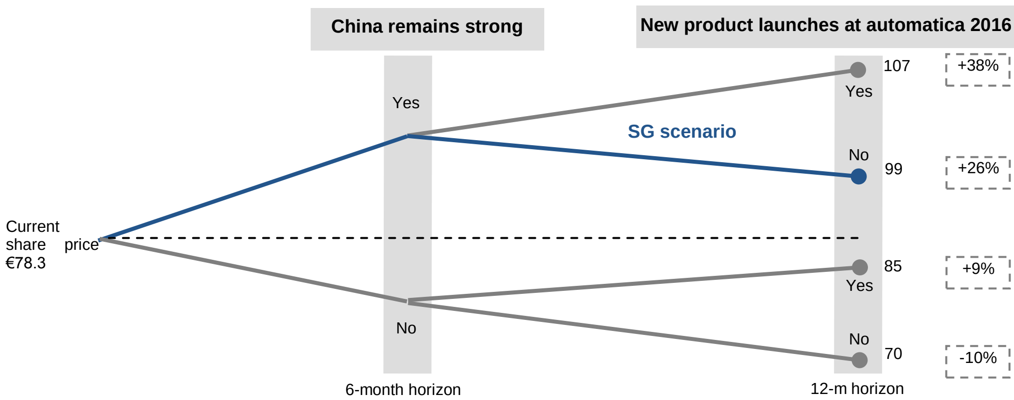
Source: SG Cross Asset Research/Equity, Bloomberg Best estimates

SG EPS vs consensus



Source: SG Cross Asset Research/Equity , Datastream

Different scenarios for the share price



Source: SG Cross Asset Research/Equity

Risks to our central scenario	TP impact
Bull	
(1) Strong auto orders from China	Ex H2 15E:
(2) Strong general industry orders	+€5-10
(3) Swisslog margins above 5%	
Bear	
(1) GDP weakening, spilling over to the auto and general industry	Ex: -€5-10
(2) Slow margin recovery at Swisslog	
(3) Integration problems at Swisslog	

Source: SG Cross Asset Research/Equity

Key share price catalysts	Potential timing
Positive	
• Quicker margin recovery at Swisslog	Ex: 2016e onwards
• Strong boost from general industry	Ex: 2016e onwards
Negative	
• Collapse of the Chinese auto market	
• Slowing of hospital capex	
• Collapse of Industry 4.0 theme	

Source: SG Cross Asset Research/Equity

Kuka within the sector and the market

Equity strategy

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Earnings momentum under pressure – Better cyclical newsflow in Europe would help European capital goods. Further euro weakness would be a support. US capex recovery has been already anticipated by the market: earnings momentum should remain in negative territory in the short term. Newsflow from China should not help as capex there is decelerating. The sector is not valued attractively: the 12-month forward P/E is back to the 10-year high at 17x, above the market average. Underweight reiterated.

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Kuka is an average performer on key sustainability issues in the machinery sector, but shows a positive trend in its management of environmental and social issues. Having experienced a strong employee growth in 2014 (around +50%), the company reports stable accident rates but does not make gravity rates available, making benchmarking to industry standards difficult. Kuka's products contribute to energy efficiency and are partly used in clean technology industries (photovoltaic, solar thermal and wind energy) and the company states it implements sustainable construction principles in all new construction, expansion and modernization projects in the Augsburg site. Thanks to the decrease of heating energy and the use of more renewable energy sources, the site was able to reduce its CO_2 emissions by 17% in 2014. However, no global CO_2 and energy use figures and track records are made public – even though the company reports 53 locations (with 60% of employees located outside

Germany). In terms of governance, the company now displays a better transparency of executive remuneration, and the chairman and CEO functions are separated. The board has a good level of independence; however, the lack of disclosure of committee membership is below standards.

Valuation

Following the takeover of Swisslog, Kuka's group profitability will be diluted given Swisslog's current EBIT margin of just 2.9% in 2014 (2.3% in Q1 15 and 1.5% in Q2 15) which is well below that of Kuka's group margin of 6.9% in 2014, which, according to our estimates impact this year's EBIT margin, causing it to fall to 6.2%, before recovering from 2016. Excluding the Swisslog acquisition, Kuka's margin would have been above 7% in Q1 and 9.3% in Q2 (with Q4 typically being the strongest quarter).

To capture Kuka's long-term growth profile and margin potential from the Swisslog turnaround, we value the stock using a blend of a DCF-derived underlying valuation of €107 (8% normalised EBITA margin, 2.5% LT growth and 7.3% WACC) and a target multiple valuation based on 13.2x 2016e EV/EBIT of €90. We set our TP at the midpoint of these two valuations; i.e. €99.

Our target multiple has been derived as follows:

$$\frac{EV}{EBIT} = \frac{Cash\ conversion\ rate\ -\ tax\ rate}{WACC - growth} = \frac{92.7\% - 30.0\%}{7.3\% - 2.5\%} = 13.2\text{x}$$

using Kuka's normalised cash conversion rate, based on an mid-cycle ROIC of 24.1%, thus:

$$Cash\ conversion\ rate = 1 + \frac{growth}{ROIC} \text{x} \left(tax\ rate - 1\right)$$
$$= 1 + \frac{2.5\%}{24.1\%} \text{x}(1 - 30\%) = 1 + 10.4\% \text{ x} - 70\% = 92.7\%$$

At TP, Kuka would trade on 14.5x 2016e EV/EBIT, broadly in line with those peers that we consider in the same quality bracket and on a 26% premium to the universe of small and midcap European industrials as listed on page 8. We think Kuka deserves to trade at a premium to midcap industrials as no other stock offers such pure exposure to Industry 4.0, which we believe should drive superior growth compared to the sector, fuelling the margin recovery story. Although the shares have re-rated after the solid set of Q2 results and management has raised the 2015 outlook and sounds upbeat on H2, we think that, at the current trading levels, the share price fails to discount Kuka's impressive growth profile.

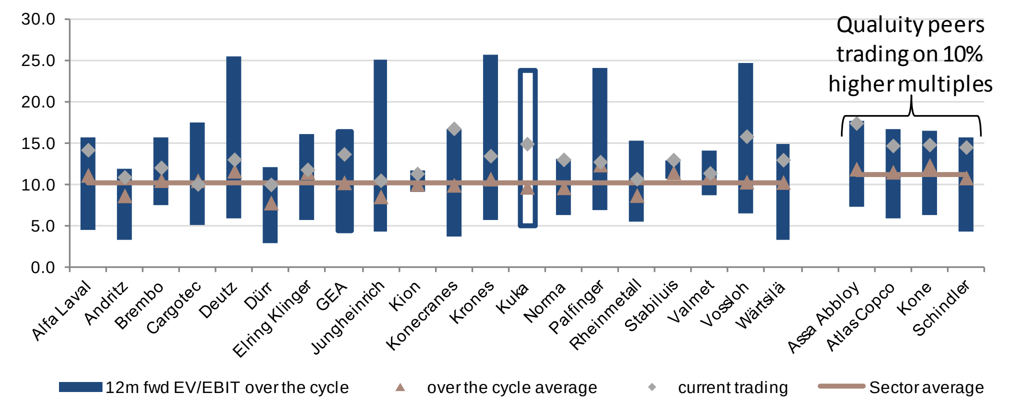
Given Kuka's various end-markets, it is tough to find a perfect peer. Therefore, we have put Kuka into the context of three different peer groups (see page 9 for details) that we think best match its profile in terms of market cap bracket, industry exposure, and quality of the company and management.

1. Universe of pan-European small and midcap industrials
2. Other auto capex suppliers
3. Other stocks which we regard as high quality names

Over the cycle, the universe of pan-European small and midcap industrials trades on 10.3x 12m fwd EV/EBIT, with 5.6x at trough levels and 16.0x at the peak. Currently the sector trades on 12.7x 12m fwd EV/EBIT, a 23% premium to the mid-cycle valuation, but still some 21% below peak valuation.

Based on consensus estimates, Kuka currently trades on 15.1x 12m fwd EV/EBIT, broadly in line with the premium-peers and at a 56% premium to its over the cycle valuation of 9.7x 12m fwd EV/EBIT but still some 37% below its peak valuation, recorded in 2010 when its earnings were suppressed.

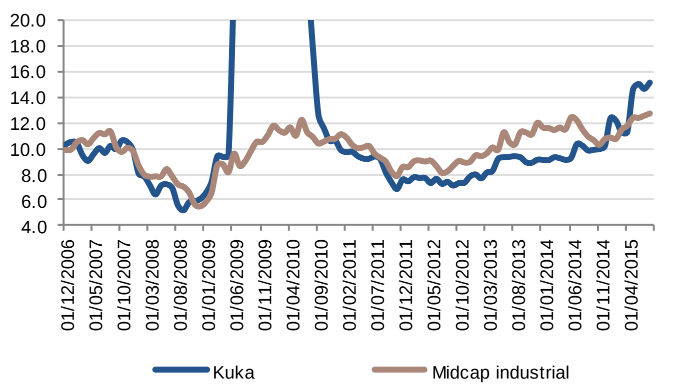
Sector valuation 12m fwd EV/EBIT over the cycle*



Source: SG Cross Asset Research/Equity, * negative values and values >30 have been eliminated

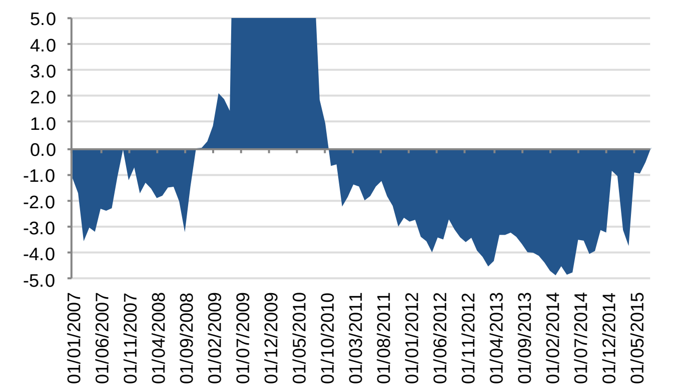
Based on our estimates, Kuka trades on 12.4x 12m fwd EV/EBIT and on 11.1x 2016e EV/EBIT. Given Kuka's superior growth profile on both the top and EBIT lines, we think Kuka should trade on a premium to the universe of small and midcap industrials and also move up its own over the cycle valuation range towards those names that we regard as high quality names, given its excellent track record over the past six years. On our estimates, Kuka still trades on a c.21% discount to those peers, and marginally below based on consensus estimates which we believe are too cautious.

Kuka vs European midcap industrials 12m fwd EV/EBIT



Source: Datastream, SG Cross Asset Research/Equity

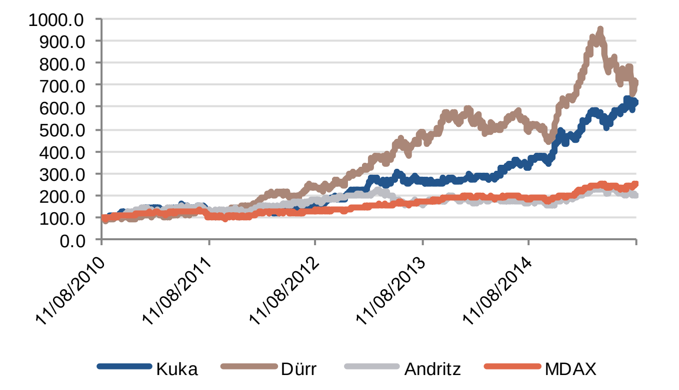
Kuka valuation vs quality peers 12mfwd EV/EBIT



Source: Datastream, SG Cross Asset Research/Equity

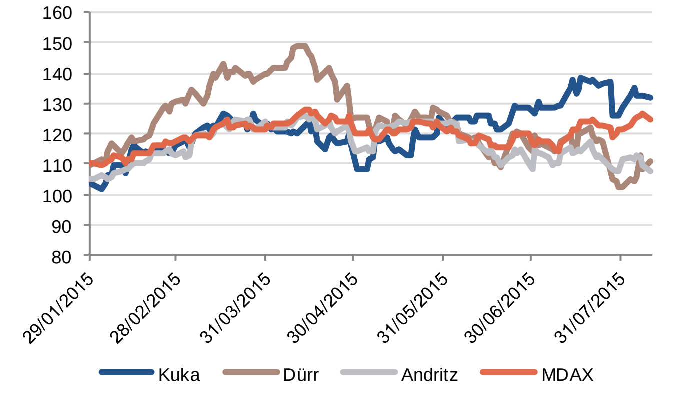
Fuelled by the strong auto capex recovery after Lehman, Kuka's shares have made significant gains, up 778% from its trough on 25 February 2009 and up 618% over the past five years, outperforming the MDAX by 367% and 370% respectively. YTD, Kuka has outperformed its peers Dürr (SGe Buy TP €102 and Andritz (SGe Buy, TP €62), the two other auto capex plays, which we believe is partly due to its changed business mix after the Swisslog integration, now that it has better access to fast growing end-markets in the general industry and gets support from being a pure play on Industry 4.0. Nonetheless, in our view the share price does not adequately reflect Kuka's earnings growth and still attractive risk/reward profile.

Kuka vs selected peers and MDAX -5Y



Source: Datastream, SG Cross Asset Research/Equity

Kuka vs selected peers and MDAX YTD



Source: Datastream, SG Cross Asset Research/Equity

Kuka's relative valuation vs other industrials and quality names, 2015-17e

(1) Small & Midcap industrials

Company	Price	Currency	EV/Sales			EV/EBITDA			EV/EBIT			P/E		
			2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e
Alfa Laval	158.80	SK	2.06	2.03	1.91	10.9	10.9	10.2	13.9	14.2	12.9	16.2	16.9	16.4
Andritz	42.74	€	1.13	1.04	0.95	6.9	6.2	5.4	11.9	10.6	9.0	16.8	14.8	12.7
Brembo	41.85	€	1.37	1.24	1.12	8.5	7.7	6.9	12.9	11.3	10.2	17.5	15.9	14.4
Cargotec	33.10	€	0.72	0.69	0.64	8.1	7.2	6.5	10.9	9.3	8.2	12.7	11.4	10.5
Deutz	5.55	€	0.56	0.47	0.40	5.5	4.4	3.7	17.5	10.2	8.1	21.4	13.2	10.3
Dürr	81.06	€	0.83	0.77	0.71	8.7	7.7	7.2	10.6	9.1	8.1	17.0	14.2	13.4
ElringKlinger	24.52	€	1.42	1.32	1.22	8.5	7.6	6.8	13.0	11.2	9.7	14.3	12.7	11.4
GEA	37.91	€	1.57	1.46	1.34	13.4	10.5	8.8	16.0	12.2	10.0	26.2	17.7	15.0
Jungheinrich	66.83	€	0.86	0.80	0.75	6.2	5.6	5.3	11.1	10.0	9.2	16.8	15.2	13.8
KION (consensus)	42.74	€	1.13	1.04	0.95	6.9	6.2	5.4	11.9	10.6	9.0	16.8	14.8	12.7
Konecranes	28.02	€	0.84	0.79	0.77	10.0	8.1	7.4	14.8	11.0	9.8	17.3	14.1	12.4
Krones	105.50	€	0.99	0.91	0.85	10.1	9.1	8.4	14.5	12.9	11.8	21.9	20.2	18.6
Norma	48.38	€	2.18	2.00	1.85	10.8	9.7	8.8	14.3	12.4	11.3	18.1	16.5	15.2
Palfinger	27.25	€	1.07	1.01	0.96	9.6	8.6	8.0	13.2	12.1	10.9	17.4	14.8	13.5
Rheinmetall	55.95	€	0.61	0.59	0.53	6.6	6.0	5.2	12.0	10.3	8.4	15.6	12.6	10.8
Stabilus	34.49	€	1.71	1.54	1.47	9.7	8.4	8.0	13.2	12.7	12.0	16.2	13.7	12.2
Valmet	10.80	€	0.64	0.56	0.55	8.0	6.4	6.3	12.7	9.7	8.9	15.0	13.5	12.4
Vossloh	62.71	€	0.77	0.73	0.69	10.9	8.6	7.2	21.3	14.0	11.0	43.1	22.5	16.7
Wärtsilä	40.82	€	1.64	1.53	1.45	11.5	10.5	9.7	13.5	12.4	11.3	17.1	15.8	14.6
Average			**1.16**	**1.08**	**1.01**	**9.0**	**7.9**	**7.1**	**13.6**	**11.5**	**10.0**	**18.8**	**15.3**	**13.5**
Median			**1.07**	**1.01**	**0.95**	**8.7**	**7.7**	**7.2**	**13.2**	**11.2**	**9.8**	**17.0**	**14.8**	**13.4**

(2) other auto capex suppliers

Company	Price	Currency	EV/Sales			EV/EBITDA			EV/EBIT			P/E		
			2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e
Dürr	81.06	€	0.83	0.77	0.71	8.7	7.7	7.2	10.6	9.1	8.1	17.0	14.2	13.4
Andritz	42.74	€	1.13	1.04	0.95	6.9	6.2	5.4	11.9	10.6	9.0	16.8	14.8	12.7
Taikisha	2950.00	Y	0.30	0.27	0.25	5.3	4.7	4.3	5.9	5.2	4.8	16.5	15.1	14.6
Average			**0.75**	**0.69**	**0.64**	**7.0**	**6.2**	**5.6**	**9.5**	**8.3**	**7.3**	**16.7**	**14.7**	**13.6**
Median			**0.83**	**0.77**	**0.71**	**6.9**	**6.2**	**5.4**	**10.6**	**9.1**	**8.1**	**16.8**	**14.8**	**13.4**

(3) Quality names

Company	Price	Currency	EV/Sales			EV/EBITDA			EV/EBIT			P/E		
			2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e
Alfa Laval	158.80	SK	2.06	2.03	1.91	10.9	10.9	10.2	13.9	14.2	12.9	16.2	16.9	16.4
Andritz	49.07	€	0.75	0.70	0.67	8.7	7.9	7.4	11.8	10.3	9.5	18.1	16.4	15.6
Assa Abloy	176.90	SK	3.04	2.80	2.56	16.5	15.0	13.7	18.5	16.7	15.3	24.9	22.5	20.8
Atlas Copco	237.60	SK	2.99	2.80	2.61	12.9	11.8	10.8	15.4	14.1	12.9	19.4	18.1	16.5
Kone	39.46	€	2.19	2.03	1.91	14.2	13.2	12.2	15.3	14.2	13.0	22.0	20.8	19.5
Schindler	157.30	SF	1.58	1.48	1.38	13.1	11.9	10.8	15.4	13.6	12.8	24.5	22.2	20.8
Wärtsilä	40.82	€	1.64	1.53	1.45	11.5	10.5	9.7	13.5	12.4	11.3	17.1	15.8	14.6
Average			**2.03**	**1.91**	**1.78**	**12.5**	**11.6**	**10.7**	**14.8**	**13.7**	**12.5**	**20.3**	**19.0**	**17.7**
Median			**2.06**	**2.03**	**1.91**	**12.9**	**11.8**	**10.8**	**15.3**	**14.1**	**12.9**	**19.4**	**18.1**	**16.5**

Kuka (consensus)	78.29	€	0.98	0.91	0.83	12.0	10.2	9.0	18.4	13.9	11.9	30.0	23.4	20.6
Kuka (SG estimates)	**78.29**	**€**	**0.9**	**0.8**	**0.7**	**10.7**	**8.6**	**7.2**	**13.6**	**11.1**	**9.4**	**26.6**	**22.0**	**18.4**
Kuka versus small and midcap industrials			-19%	-23%	-27%	19%	9%	1%	0%	-3%	-6%	41%	44%	36%
Kuka versus other auto suppliers			13%	8%	3%	55%	39%	34%	29%	22%	16%	59%	49%	38%
Kuka versus quality names			-54%	-59%	-62%	-17%	-27%	-33%	-11%	-21%	-27%	37%	22%	12%

Source: Datastream, SG Cross Asset Research/Equity, based on closing prices as of 10 August 2015

SG vs consensus

While we are broadly in line with consensus on the top line for 2015-17e, we differentiate on EBIT. Given the still low profitability at Swisslog and the negative impact on this year's earnings from the Japanese yen's weakness, we take a more conservative approach with regards to margin expansion this year. However, we have a positive stance on Kuka's margin expansion over the next two years, where we believe the consensus is too conservative. Our 2015-17 estimates are 0-5% above Street for the top line and 14-26% above consensus for EBIT.

SG versus consensus 2014-17e

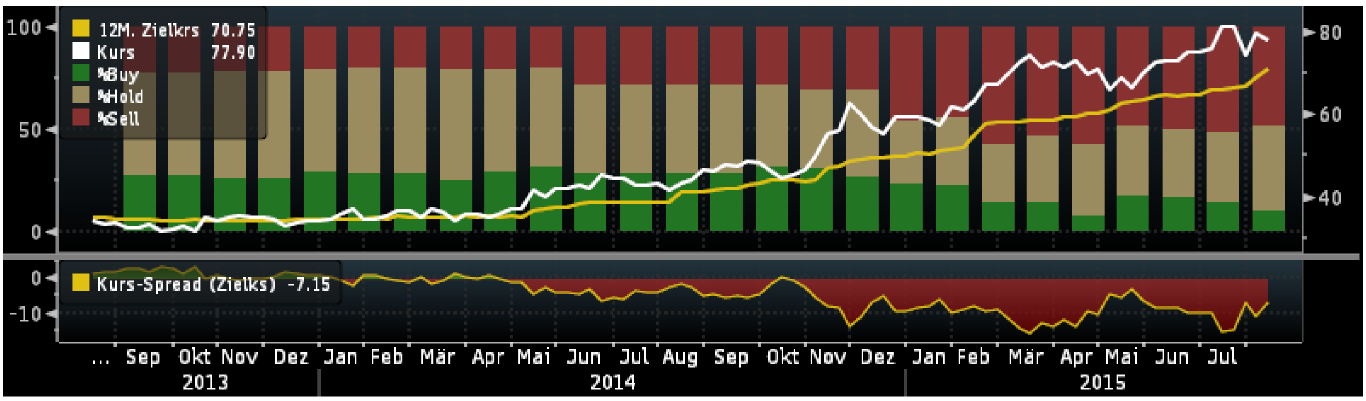
	Stated	SG estimates			Consensus estimates			Deviation		
	2014	2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e
New orders	2,229.0	2,946.8	3,181.0	3,411.0				NA	NA	NA
Sales	2,095.7	2,893.5	3,092.5	3,335.0	2,890.0	3,028.0	3,180.0	0%	2%	5%
EBITDA	187.5	254.4	296.1	337.6	239.0	262.0	288.0	6%	13%	17%
EBITA (before PPA)	144.6	187.4	225.9	264.6	149.0	198.0	227.0	26%	14%	17%
EBIT (reported)	144.6	141.8	215.9	254.6				NA	NA	NA
Adj. net income	68.1	112.3	137.0	164.2	83.8	116.0	134.1	34%	18%	22%
EPS (€, adjusted)*	1.99	3.14	3.84	4.60	2.7	3.3	3.7	19%	16%	24%
DPS (€)	0.40	0.61	0.84	1.10	0.51	0.77	0.93	19%	10%	18%
Sales growth	18.1%	38.1%	6.9%	7.8%	37.9%	4.8%	5.0%			
EBITDA margin	8.9%	8.8%	9.6%	10.1%	8.3%	8.7%	9.1%			
EBIT margin	6.9%	6.5%	7.3%	7.9%	5.2%	6.5%	7.1%			
Dividend yield	0.5%	0.8%	1.1%	1.4%	0.7%	1.0%	1.2%			

Source: Kuka (for stated figured), Bloomberg, Factset, SG Cross Asset Research/Equity *EPS adjusted but not diluted
* based on a share price of €77.29 as of 10 August 2015

Consensus rating and target price distribution

Kuka is a consensus Sell with fourteen brokers having a Sell rating on Kuka. Besides us, there are only three other brokers with a Buy rating on Kuka. Twelve analysts have a Hold recommendation on Kuka. The average target price from thirty analysts is €70.75, some 29% below our target price of €99 per share.

Consensus rating and target price distribution



Source: Bloomberg, as per 10 August 2015

Investment summary

We initiate coverage with a Buy rating

As part of the expansion of our German coverage, we initiate coverage on Kuka, a Germany-based robotics and automation equipment supplier, with a Buy rating and €99 target price.

We have a positive stance on Kuka for three reasons: 1) strong top-line growth from Industry 4.0, a mega trend that has just started and additional increases in auto capex where we believe Kuka should gain more market share while moving further into the still low automated final assembly stage; 2) the acquisition of Swisslog supports Kuka's accelerated move into general industry (up from 33% to 49% post merger) as it gives access to attractive growth markets like healthcare and logistics; and 3) Kuka is also a self-help margin recovery story with a good track record in turning around challenging businesses. We expect the Swisslog EBITA margin to be lifted from 2.8% to 5.5% in 2017e and to 7.8% by 2020e.

To capture Kuka's long-term growth profile and margin recovery from the Swisslog turnaround, we value the stock using a blend of a DCF-derived underlying valuation of €107 (using an 8% normalised EBITA margin, 2.5% LT growth and 7.3% WACC) and a target multiple valuation, based on 13.2x 2016e EV/EBIT of €90. We set our TP at the midpoint of these two valuations, i.e. €99.

We think Kuka deserves a premium to its peers, since no other company is such a pure play on Industry 4.0, which we believe should drive superior growth compared to the sector, fuelling the margin recovery story. Despite Kuka shares having rerated somewhat after management raised its 2015 outlook with the Q2 results and sounded upbeat on H2, we think that, at the current trading levels, they do not discount Kuka's impressive growth profile. We are making a long-term call on Kuka that goes against the consensus; besides us, there are only three other brokers out of 29 with a Buy rating on Kuka.

A pure play on Industry 4.0

For decades, Kuka has been setting milestones in factory and production automation, but we think the real breakthrough is just ahead with smart factories, for which Kuka is providing key technology that enables Industry 4.0. In our view, intelligent robotics is the heart of the digitised value creation chain as it can be used as a versatile tool for unlimited production flexibility.

Kuka was the first robot company on the market to launch a sensor-based robot, the LBR iiwa (intelligent industrial work assistant) that is safe and can directly collaborate with human workers without safety fences. Other robot makers have taken the approach of either slow-moving robots or robots with arms wrapped in soft padding to absorb impacts, like ABB's YuMi® robot that is also designed for human/robot collaboration; in our view, these solutions are inferior to Kuka's products, which we believe are some three to five years ahead of those of its competitors.

Human robot collaboration can boost productivity by up to 30%

With its sensitive, lightweight robots, mobile platforms, and smart platforms such as controllers and software, Kuka is well positioned in our view to offer human/robot collaborative assistance systems, automation solutions, and production processes that mark the dawn of a new area for smart factories. Through implementation of human/robot collaboration, production can be "semi-automated" and production flows can be optimised in many areas. This could boost output by up to 30% compared to standard production. In our view, Kuka is a pure play on Industry 4.0 that should be one of the biggest beneficiaries of this mega trend that just has emerged.

Accelerated growth into general industry

Although industrial robots have been used for decades, their high costs only led to productivity improvements in industries that were using low skilled but highly paid workers in the developed world, performing jobs that were dangerous, dirty, and dull, like welding in automobile manufacturing. Robot efficiency has vastly improved in recent years, and now consume by far less energy and require less space. In our view, we have reached a stage where robotics have started to “cross the chasm” as early adopters such as the car industry have paved the way for broader robot use.

We expect the automotive industry to continue to be the innovator, but the growing global demand for electronic products, new products (like the iPad) and new production technologies (Industry 4.0) will not only boost investments for retooling of existing production processes and facilities but will also open the door for expansion of production capacity or new production capacity in the electrical and electronics (3C markets) industries, particularly in Asia. We see Kuka as well positioned for this. To improve efficiency further and to remain competitive, especially in regions of high wage inflation and ageing workforces, such as emerging markets, we think that general industry will have to catch up with the automotive industry, where robot density is 7-16x higher.

In our view, the Swisslog acquisition is a perfect fit into Kuka’s strategy to become a global automation powerhouse. Swisslog enlarges its product offering and accelerates the move into general industry. With the acquisition of Swisslog, Kuka not only boosted its sales exposure to the general industry immediately from 33% to 49% but also diversified its customer and end-market exposure significantly. Kuka products could now enter attractive growth markets such as warehouse logistics (e-commerce) and healthcare, not only replacing third-party equipment but also making use of Swisslog’s customer base and sales channels and vice versa. By combining products from Kuka and Swisslog, we think totally new applications and markets could be created that should generate additional demand, like the iPad did after its launch, further fuelling Kuka’s growth in general industry.

Swisslog – a self-help margin recovery story

We think Kuka is the right owner of the Swisslog business to restore higher levels of profitability, as they did in their own systems division a few years ago, as the two companies’ systems businesses are similar in many respects.

In 2010, systems EBIT was back in the black with an EBIT margin of 2.9%, just above the average margin of 2.7% over the period 2003-08. Thanks to the implementation of consistent actions in the systems division, Kuka was able to more than double margins within three years to 5.8% reaching new highs over the past two years. Excluding the initially earnings dilutive acquired businesses from Reis, Alema, and Faude, the organic EBIT margin stood at 7.6% in 2014, a record high that almost no one in the capital markets believed could ever be achieved. According to Kuka, sharing services based in SAP as well as optimising joint procurement could result in 1-2 percentage points of cost savings, considering combined purchasing volumes. Overall, Kuka expects cost savings from synergies to the tune of CHF10m annually.

Through the combination of Kuka’s restructuring expertise and the restructuring measures already initiated by Swisslog’s former management, we think there is a strong basis for a margin recovery story. Given Kuka’s excellent track record in its systems restructuring and the successful turnaround of loss-making Reis robots within just three quarters, we believe Kuka will be able turn Swisslog around as well, not only restoring historical EBIT margins to just below 5% but perhaps even surpassing the targeted 5% threshold. In our view, this margin recovery potential is not reflected in the current valuation.

Healthy automotive capex and moving into final assembly

Given Kuka's leading position in the automotive industry, its global and European number one position in robots, and number one in the US systems business following the Utica enterprises acquisition (number two in Europe), we think Kuka is well positioned to participate in the strong auto capex cycle. Our SG autos team expects growth in automotive capex to accelerate again following a breather in 2014, with total auto capex of European OEM increasing by another 15% by 2017e, resulting in total capex some 54% above pre-crisis levels and more than double trough levels seen in 2009 and 2010.

We think that in addition to overall strong auto capex, Kuka has the opportunity to enlarge its exposure within the automotive industry into final assembly lines, where the degree of automation is still very low (10-20 robots per segment) compared to fully automated body-in-white production (400-600 robots per segment).

At the Automatica trade fair in 2014, Kuka showcased several opportunities to use its LBR iiwa, such as the assembly of hoses and cables, the precise assembly of parts while detecting the correct installation position, and the assembly of automotive parts, performing non-ergonomic and monotonous tasks such as inserting plugs into a car body, but with the same perfection 24/7. During a pilot project with Daimler that started in 2009, more than 500,000 rear-axle gear boxes were produced with the help of Kuka's lightweight robot. In the past, such jobs were carried out only by workers, as the assembly of such complex units was too complicated to use robots.

And, robots are competitive. To cope with a shortage of personnel due to an ageing workforce, VW intends to replace human workers with robots for routine tasks, thereby boosting VW's competitiveness as robots cost VW between €3 and €6 per hour over a robot's lifetime including maintenance and energy costs, compared to more than €40 per hour in labour costs per worker in Germany (incl. wages, pension, and healthcare costs) versus €11 in eastern Europe and (currently) less than €10 in China.

Other investment considerations

Alternative scenarios and risks

Kuka is continuously optimising its corporate structure. Following the Swisslog acquisition and the ensuing increase in general industry exposure, Kuka recently announced the divestment of its HLS engineering group and its tools and dies business to Porsche (still subject to antitrust authority approval) to reshape the group further towards robot-based automation solutions. Given Kuka's strong cash generation, we think that bolt-on M&A is always on Kuka's agenda. Moreover, we believe Kuka is developing small low-cost robots, to enter the low-end robotics segments and take market share from local players in emerging markets, such as China.

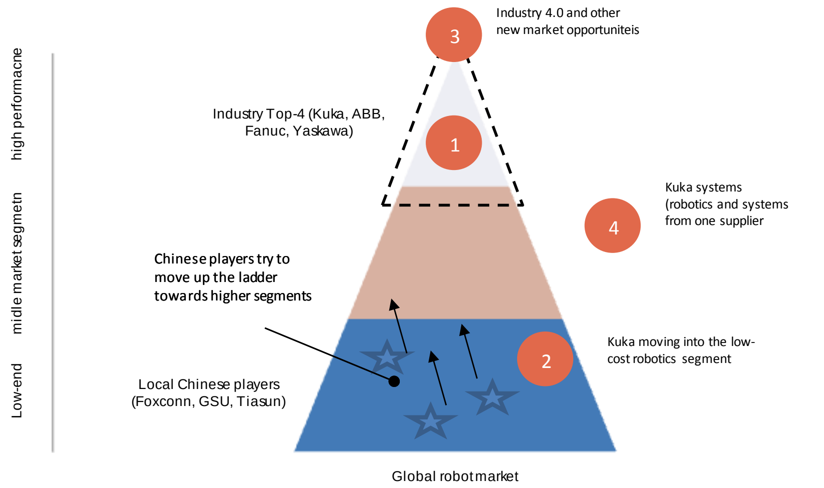
Downside risk to our TP: We regard an overall slowing or even deteriorating of the global economy as the largest risk to our positive call on Kuka as this could also spill over into the global car industry as well as general industry, which could result in lower revenues and earnings. For more risks, please refer to the separate risk section of this document.

Investment thesis

Kuka's growth opportunities in a nutshell

While Kuka competes with the three other global robot makers in the market of high-end robots (1), the potential to outperform of the market seems limited. However, we have identified three other areas of growth, which we believe, should support Kuka in gaining market share in the medium term. We see growth potential for Kuka in moving into the low-end segment (2), gaining on Industry 4.0 and defining new markets and applications (3) as well as benefitting from the automated solutions offering, outside the pure robots industry (4), as illustrated in the chart below.

Kuka's growth potential in a nutshell



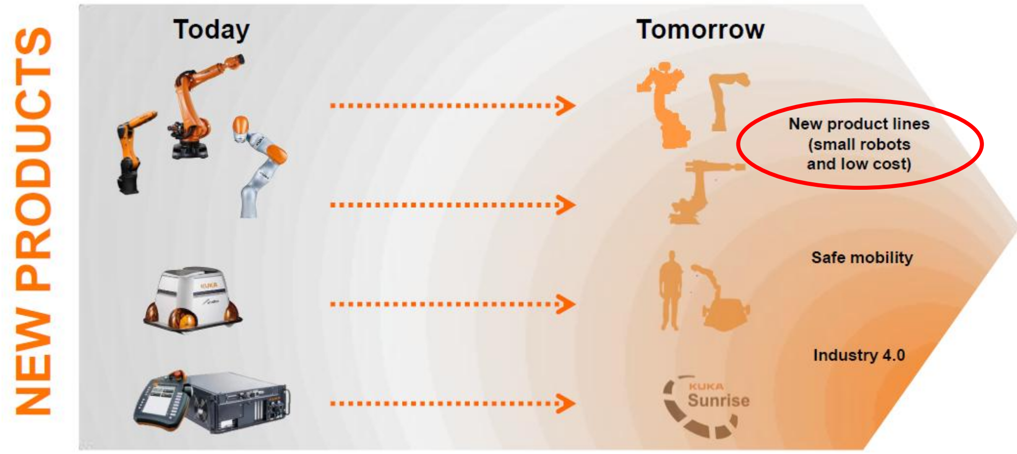
Source: SG Cross Asset Research/Equity

1) As one of the global Top-4 players in the area of high-performance robots, Kuka mainly competes with other global players such as ABB, Fanuc and Yaskawa for global market share in the market of high performance robotics. In our view, it is difficult for Kuka to gain significantly more market share in this market segment, in particular in the current business environment of a weak Japanese yen, which makes its Japanese competitors even stronger. The flattish global market share of c.14% in articulated robots over the past few years seems to cement this picture.

2) While many of the Chinese robot makers are trying to move their product offering up towards the middle market, encouraged by the Chinese government's plan to create three to five leading companies by 2020 with international competitiveness, we believe Kuka could upstage the Chinese robot industry while entering these players' core area, low-end robots, which are often designed for local needs. In its latest investor presentation, Kuka already hinted at the possibility of a small, low-cost robot, and we believe Kuka has already started to develop such a robot. In our view, such a move would not only make Kuka unique among the top industry players, but would also allow it to gain market share and enjoy tremendous growth.

In 2013, the robot supply into the Chinese market stood at 36,560 units, of which c.9,000 robots came from Chinese suppliers. In 2014, the number of robot deliveries reached more than 56,000, of which more than 26,000 robots were supplied by local players. While the overall Chinese robot market was up by 53% in 2014, the international suppliers had to content themselves with little as 9% growth, while Chinese robot deliveries almost tripled.

Kuka's new product offering, today and tomorrow



Source: Kuka

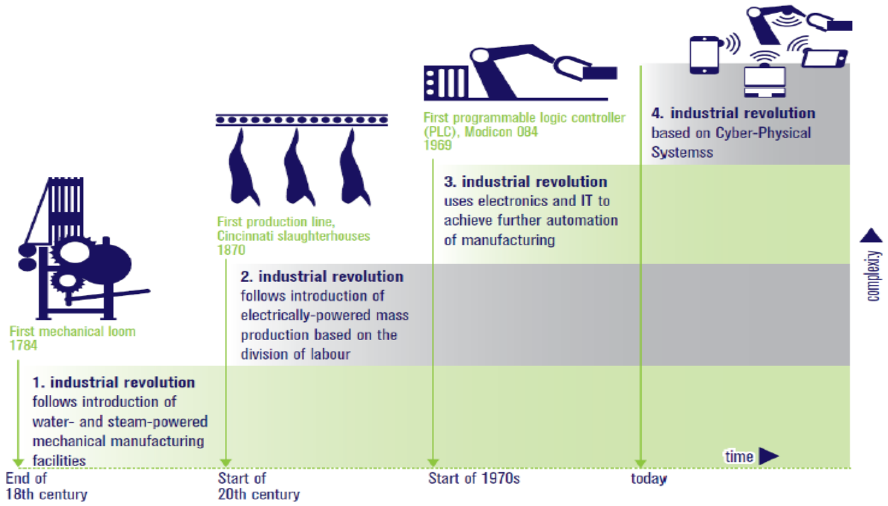
3) Aside from a potential move into the low-end segment, we believe Kuka looks set to outperform its peers while widening the market. With its new products, such as the LBR iiwa we see Kuka as an enabler of Industry 4.0, as discussed in the following section in more detail.

4) We also see growth for Kuka outside the pure robotics industry. Thanks to its systems division, Kuka has an excellent in-house system integrator which it has continuously reshaped through selective bolt-on acquisitions, like that of Alema, making Kuka a full-range supplier in the aircraft industry, or that of Reis, a technology-leading robotics specialist and systems integrator, supplying complete automation systems from a single source. While having used third-party robots in the past, Reis is currently focusing on integrating Kuka robotics into its solutions. Kuka has pooled these solutions under Kuka Industries, still part of the systems division. We believe Kuka is one of the few players that can offer, at the same time, complete robot and plant engineering solutions, which should, in our view, support additional growth potential for both Kuka's systems and robotics divisions in the areas of industrial applications such as casting technologies, welding and laser technologies.

A pure play on Industry 4.0

The fusion of the digital world with the real world of manufacturing, known as the fourth industrial revolution, has just begun. For decades, Kuka has been setting milestones in factory and production automation, but we think the real breakthrough is just ahead with smart factories, for which Kuka is providing key technology that enables Industry 4.0. In our view, intelligent robotics, in particular human/robots collaboration is the heart of the digitised value creation chain as robots can be used as a versatile tool for unlimited production flexibility.

4th industrial revolution has just begun



Source: VDMA

With its sensitive lightweight robots, mobile platforms, and smart platforms such as controllers and software, we think Kuka is well positioned to offer human/robot collaborative assistance systems, automation solutions, and production processes that mark the dawn of a new area for smart factories.

Smart factory product offering from Kuka systems

Source: Kuka

Human/robot collaboration

With the launch of its sensor-based, lightweight robot LBR iiwa, a seven axis sensitive robot with built-in torque sensors, Kuka has enabled direct human/robot collaboration that enables innovative automation solutions. This new robot is regarded as safe, i.e. it no longer has to operate behind safety fences which often cost as much as the robot itself. These robots can directly collaborate with workers and interact with them, which not only offers tremendous application opportunities but also helps optimise work space and reduce capex requirements.

In contrast to standard industrial robots, the LBR iiwa is able to learn from its human colleague; thanks to its built-in sensors, the robots can be programmed by recording movements carried out by the its human colleague. Through the collaboration of human workers and robots, production flows can be optimized in many areas and formerly production-interrupting processes can be eliminated, which could boost output by up to 30% by implementing human robot collaboration in the production chain compared to standard production.

Mobility

Industry 4.0 is not just about connecting data traffic with machines and humans, but also about flexibility in the production process and the flow of goods through the production cycle that requires new concepts of moving working pieces, machines or entire production units, including repositioning them to optimize the production process and efficiency.

With its product offering of mobile platforms that can autonomously move objects such as work machines that can weigh up to 90 tonnes or more, Kuka is paving the way for mobile robotics, in our view. The company offers a broad range of mobile robot solutions to various industries, like the aerospace industry and the wind turbine industry, where production units are heavy weight wise and transportation is difficult, almost impossible or extremely cost intensive. Mobile robots, moving themselves along the work piece and into the correct position, can carry out jobs more efficiently and cost effectively.

We even think that with the addition of Swisslog, Kuka is in a position to create completely new mobile solutions, like small robots on AGVs, etc., creating new markets needs like the iPad did a few years ago, and ultimately creating sales synergies and margin potential.

Smart platforms

Kuka's latest generation of robot controllers, KR C4 and Sunrise, are integrated control modules that have a common database and infrastructure that they share intelligently. Kuka uses open and powerful data standards, such as OPC UA or Java® that even allow app-based programmes to control robots.

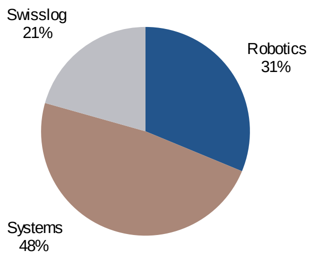
Connected to cloud systems, this new type of robot, such as the LBR iiwa, can also independently check, monitor, optimize and record the results of its own work, ensuring the highest level of transparency in the production process.

This leads us to believe that Kuka is a pure play on Industry 4.0 and hence amongst the largest beneficiary of the mega trend that just has emerged. Kuka is also helping shape the Industry 4.0 as it is actively involved in Industry 4.0 platform working groups in the VDMA as well as in other industry associations. Additionally, Kuka says it is on an ongoing search to find new partners, such as providers of cloud or automation technology.

Accelerated expansion into the general industry

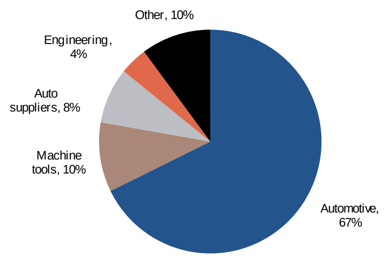
In our view, the Swisslog acquisition is fits perfectly with Kuka's strategy to become a global automation powerhouse, broadening its product offering and accelerating its move into the general industry.

Kuka *pro forma* sales by division, 2014



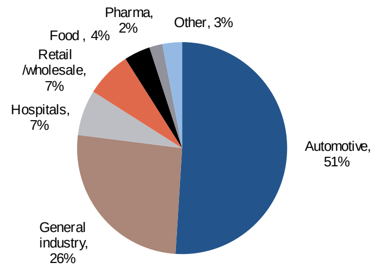
Source: Kuka, SG Cross Asset Research/Equity

Kuka end market exposure pre merger



Source: Kuka, SG Cross Asset Research/Equity

Kuka end market exposure post merger

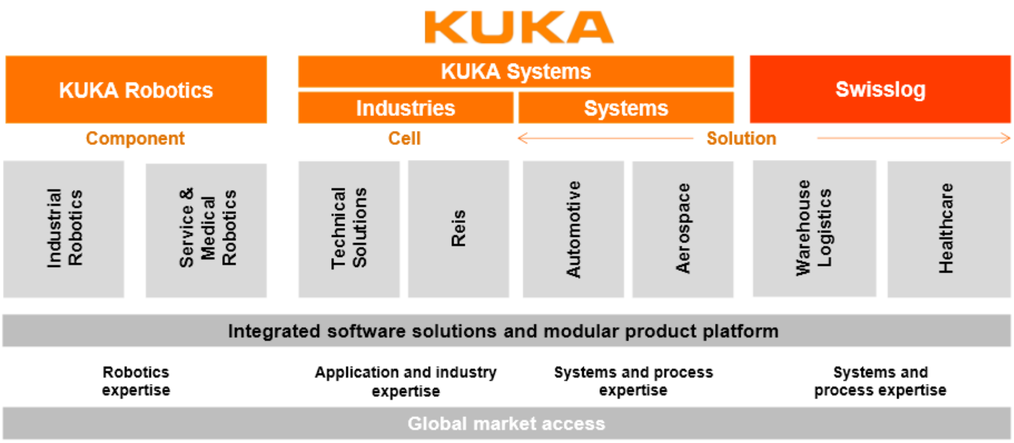


Source: Kuka, SG Cross Asset Research/Equity

In our view, the merger of Kuka and Swisslog is a win-win situation. With the acquisition of Swisslog, Kuka not only raised its exposure to the general industry immediately from 33% to 49%, but also diversified its customer and end market exposure significantly.

With the acquisition, Kuka's products could now enter attractive growth markets such as warehouse logistics and healthcare, not only replacing third-party equipment, but also making use of Swisslog's customer base, fuelling its growth in the general industry.

Swisslog adds attractive growth markets to Kuka

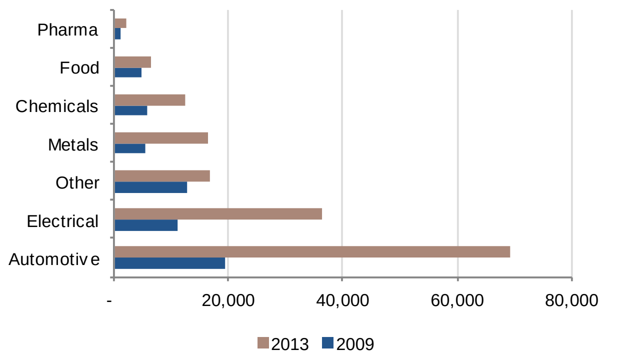


Source: Kuka

Other strong growing markets within the general industry are the aerospace industry and the electronics industry, the so-called 3C markets (computer, communication and consumer goods), where a lot of simple and often monotonous tasks for large batches are still being carried out by either unskilled or low educated workers. According to Kuka, approximately 1.6m workers of the 6.4m working in 3C markets belong to this category, offering huge potential for robot-based automation, especially for applications in the low payload range, in our view.

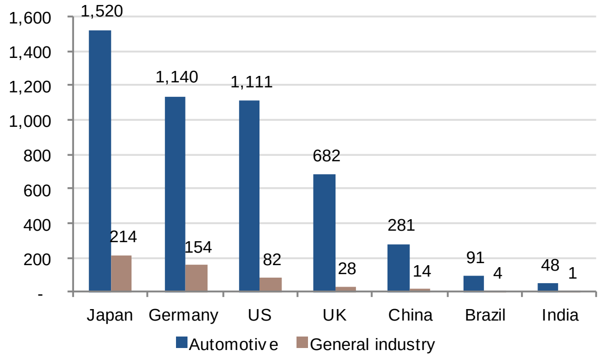
Over the past five years, the automotive industry was the main driver behind global robotics growth, accounting for 44% of robots shipped in 2013 versus 32% in 2009. The automotive industry has considerably increased robot volumes, which surged 266% from the 2009 trough level of 19,300 robots to 66,500 units in 2013. While global robot shipments were up 166% in 2013 versus 2009, robots shipped to the food and pharmaceutical industry were up just 28% and 69%, respectively. Hence the automotive industry has increased robot density further to levels that are well ahead of those in the general industry.

Robot shipments by industry, 2013 versus 2009



Source: IFR World Robotics 2013, SG Cross Asset Research/Equity

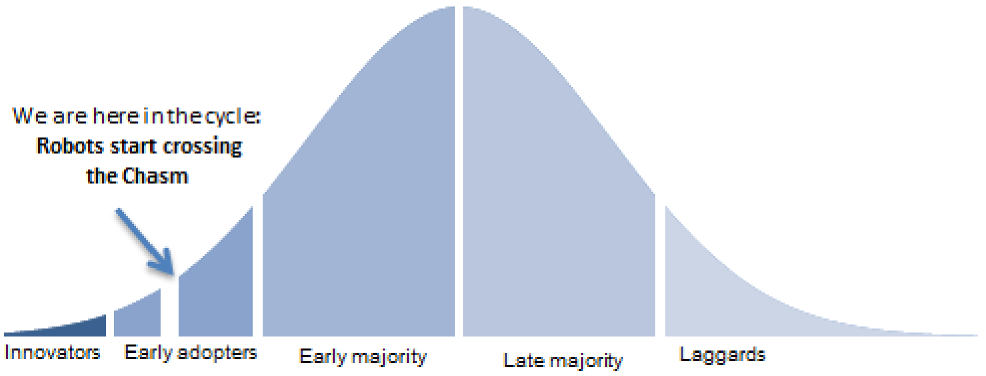
Robot density (robots per 10,000 employees) in automotive and general industry



Source: IFR World Robotics 2013, SG Cross Asset Research/Equity

Although industrial robots have been used for decades, their high cost only led to productivity improvements in industries that were using low skilled, but highly paid workers in the developed world, performing jobs that were dangerous, dirty and dull, like welding in auto production. In our view, we are now at a stage where robotics and the automation industry have started to "cross the chasm", as early adopters such as the car industry have paved the way for a broader use of robots. Therefore, we think that other industries will catch up with the automotive industry to improve their efficiency and remain competitive, especially in regions of high wage inflation and an ageing workforce.

Robots in the technology adoption life cycle



Source: SG Cross Asset Research/Equity; based on Geoffrey A. Moore Geoffrey A. Moore was the author of the book "Crossing the Chasm, developing this theory of marketing and selling disruptive products to mainstream customers

In the early days robots were not as flexible and easy to use as today's generation, which use state-of-the-art controllers, image and voice recognition software and sensors for motion, position tracking and torque. The speed, efficiency and effectiveness of robots increased by c.25%, while energy consumption and space requirements declined 25%.

Development of Kuka robots over time

Year	1980	2000	2010
Production costs	100%	30%	20%
Weight	100%	50%	40%
Number of parts	100%	30%	20%
Assembly hours	100%	20%	15%
Maintenance	100%	30%	30%
Performance	100%	200%	300%

Source: SG Cross Asset Research/Equity

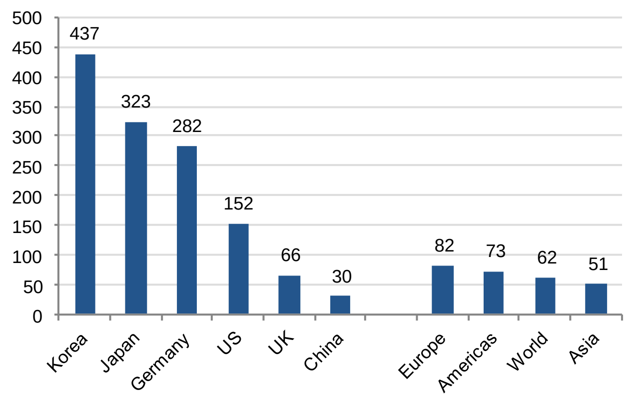
We see solid demand in both mature markets and developing markets. While in high-cost countries such as Germany the degree of automation in the general industry is relatively high compared to other countries, density is still very low compared to the automotive industry. On average, robot density is 7-16x higher in the automotive industry than in general industry, which demonstrates the tremendous potential for robotics installations outside the automotive industry.

But it is not only about wage costs, it is also about quality. To be able to produce products that are accepted in mature markets and meet the West's high quality requirements, we believe manufacturers in low-cost countries, including China, need to step up the degree of automation in their production processes, i.e. increase the use of high-tech robotics. The added advantage is that robots can improve work safety while taking over dangerous, tedious and dirty jobs that cannot be (safely) performed by humans. Another trend that drives the increasing need for automation is a trend towards further miniaturisation, which requires an extraordinary high degree of precision and cannot be handled by human workers.

In our view, the automation of China's production plants has just begun, as the degree of robots used per 10,000 employees is still low compared to the global average. However, China already became the world's single largest robot market in 2013, overtaking the US and even surpassing Europe in 2014, and now accounting for 24% of global robot shipments. According to IFR, China will remain the robot industry's growth engine, with the region growing at a CAGR of 26% over 2014-17e, double the pace of the global robot industry, which is itself expected to grow at a CAGR of 12% over 2014-17e according to the IFR.

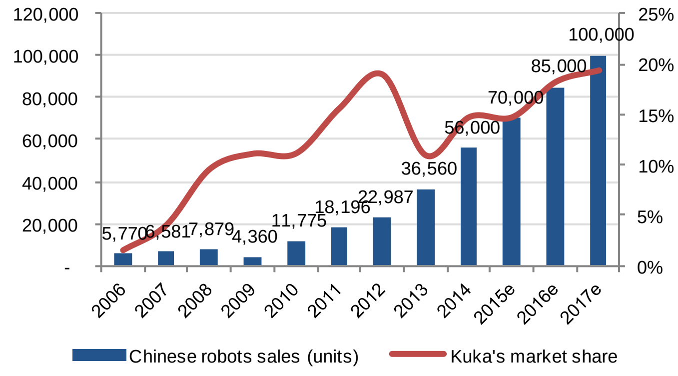
Four out of five robots shipped to China are from foreign manufactures, with the majority manufactured by Japanese players. Kuka is one of the market-leading players in China that has continuously increased its local market share, standing at c. 15% today. We think that Kuka is well positioned to participate in the tremendous growth of the Chinese robot market.

Global robot density (robots per 10,000 employees)



Source: IFR World Robotics 2013, SG Cross Asset Research/Equity

Chinese robot shipments, 2009-17e



Source: IFR World Robotics 2013, SG Cross Asset Research/Equity
Note: In 2012 some orders scheduled spilled into 2012, leading to misleading market shares

If China's robot density were to catch up with Europe's, an additional 1m robots would have to be installed, which is 20 times higher than the volume of 2014 installations.

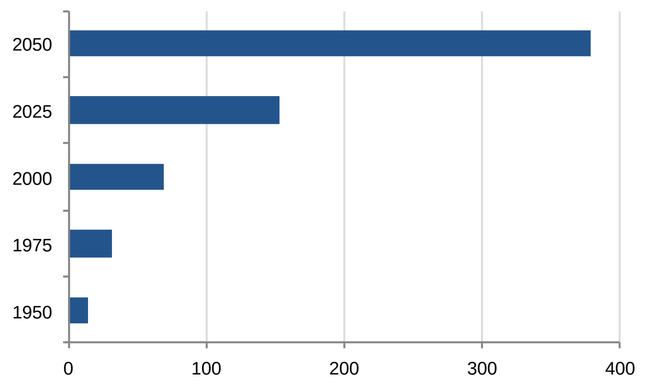
We believe the automotive industry will continue to be the innovator, but growing global demand for electronic products, new products (like the iPad) and new production technologies (Industry 4.0) should boost investments in retooling existing production processes and facilities. It should also open the door to expansion or new production capacity in the electrical and electronics (3C markets) industries, particularly in Asia, where we think Kuka is well positioned. By combining Kuka and Swisslog's products, we think totally new applications and markets could be created that should could in turn create new demand, like the iPad did after its launch.

Kuka and Swisslog joint product offering

Source: Kuka

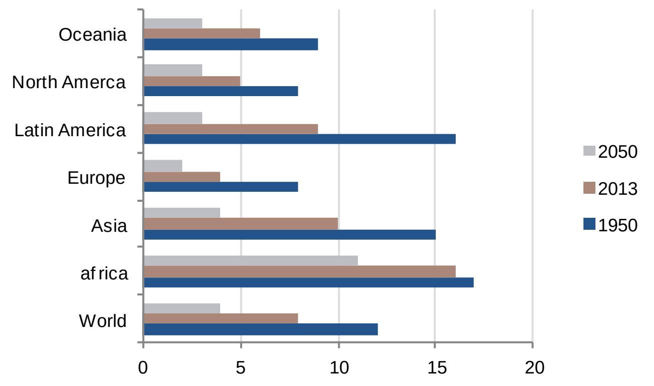
Amongst others, large assembly players such as Foxconn have heated up the discussion and talked about potentially replacing millions of workers with robots. Having used 10,000 robots in its factories in 2011, the company has been adding 30,000 industrial robots each year to its factories and expects to have 70% of its assembly work done by robots three years from now. We take this as a very strong statement, highlighting that automation and robots can be even more efficient than low-wage employees. A similar statement was made by Volkswagen, which views robots as the answer to Germany's ageing workforce dilemma with the expected retirement of the baby-boomer generation over the next 15 years and the lack of young people to replace them. The proportion of the world's population over 60 years old has increased from c.8% in 1950 to 12% in 2013 and is expected to reach 21% by 2050, with people aged 80 and over representing 1% of the population today and expected to reach 4% by 2050, according to the UN. This should not only fuel demand for industrial production, but also demand in the healthcare industry, including service robots.

Global population aged 80 or over, 1950-2050



Source: UN, SG Cross Asset Research/Equity

Old-age support ratio by major area, 1950, 2013 and 2050



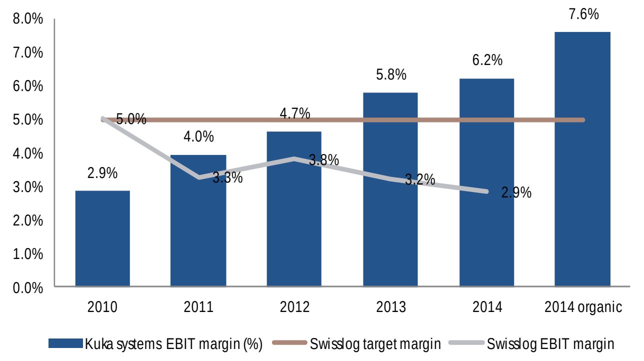
Source: UN World Population Ageing 2013, SG Cross Asset Research/Equity
The old-age support ratio is the number of working-age persons (aged 15-64 years) per older person (aged 65 years or over).

Swisslog – a self-help margin recovery story

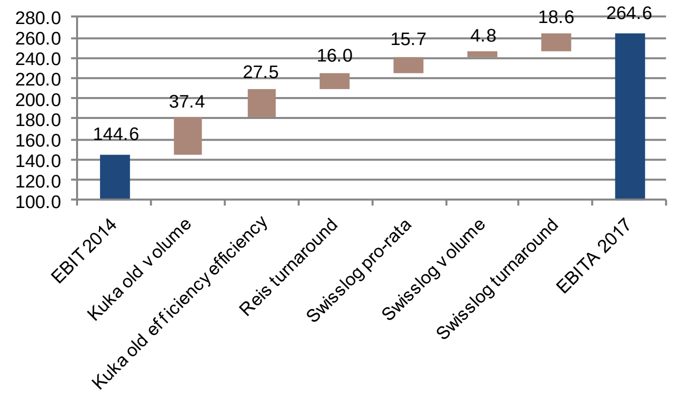
We see additional sales potential for Swisslog, as the latter gained access to Kuka's technology, customer base and sales and distribution network. We believe that the additional sales synergies should improve capacity utilization and result in improved scale efficiencies, thus better fixed cost absorption. This leads us to believe that Kuka should be able to generate above-sector top-line and earnings growth, which does not seem to be discounted in the shares.

We think Kuka is the right company to boost Swisslog's profitability, as it did in systems a few years ago, with the systems business comparable to Swisslog in many respects. In 2010, systems was back in the black at the operating level, with an EBIT margin of 2.9%, little above the average margin of 2.7% over the 2003-08 period. Thanks to the implementation of consistent actions at systems, Kuka was able to more than double margins within three years to 5.8%, reaching new highs over the past two years. Excluding the initially earnings-dilutive acquired businesses from Reis, Alema and Faude, the organic EBIT margin stood at 7.6% in 2014, a record high that almost no investors believed could be achieved.

Kuka systems / Swisslog EBIT margin development, 2010-14



Kuka EBIT(A) bridge, 2014-17e (€m)



Source: Kuka and Swisslog (for stated figures), SG Cross Asset Research/Equity

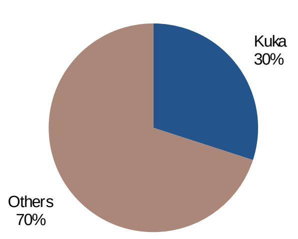
According to Kuka, sharing SAP-based services and optimizing joint procurement could result in 1-2% cost savings, considering combined purchasing volumes. Overall, Kuka expects cost savings from synergies of around CHF10m annually. As illustrated above, we expect 31% of the EBIT improvement in 2017 to stem from the turnaround of Reis and Swisslog, with Swisslog contributing an additional 19% from *pro rata* EBIT and volume growth, fuelled by sales synergies with Kuka.

Through the combination of Kuka's expertise in restructuring businesses and the restructuring measures already initiated by Swisslog's prior management, we think the foundation for margin recovery has been laid. Given Kuka's excellent track record its systems restructuring and the successful turnaround of loss-making Reis robots within just three quarters, we believe Kuka will be able turn Swisslog around as well, restoring not only historical EBIT margins to just below 5%, but also to beyond the targeted 5% threshold. In our view, this margin recovery potential is not reflected in Kuka's current valuation.

Healthy automotive capex and moving into final assembly

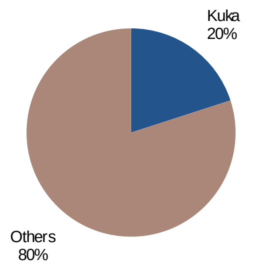
Given Kuka's leading position in the automotive industry, its number one position globally and in Europe in robots, its number one rank in the US systems business after Utica Enterprise's acquisition and its number two spot in the European systems business, we think Kuka is well positioned to participate in the strong auto capex cycle.

Kuka robots market share in automotive



Source: SG Cross Asset Research/Equity

Kuka systems market share in automotive

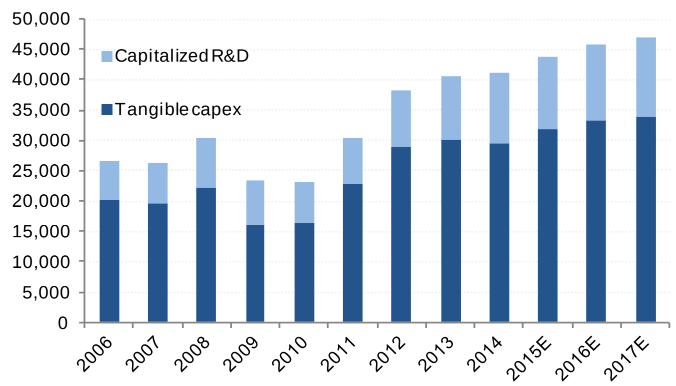


Source: SG Cross Asset Research/Equity

With still some 50% exposure to the automotive industry, Kuka is still influenced much by the automotive industry and its cyclicality, in particular with regards to automotive capex. Channel checks suggest that investors fear that the car market could dip and that automotive capex would become highly cyclical again as seen in previous cycles, especially during the period when auto capex dropped 27% but recovered 38% and 27% in 2011-12. After four years of strong investing and the US market recovery maturing, and with some weakness recently seen in China, these fears might be well founded.

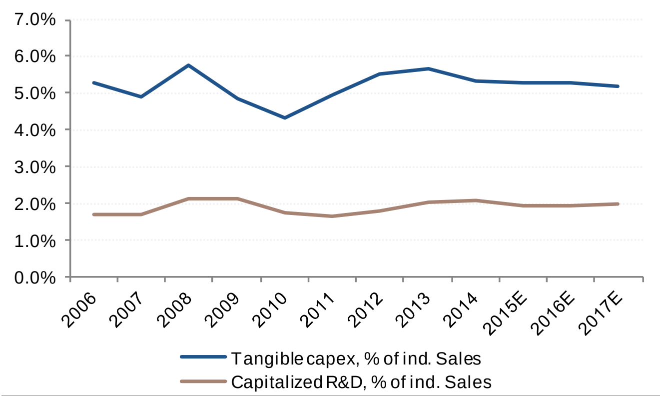
However, we do not believe there will be a capex downturn this year or over the next two years. Following a breather in 2014, our SG autos team expects growth in automotive capex to accelerate again with the total auto capex of European OEMs increasing by another 15% by 2017e, resulting in total tangible capex some 54% above pre-crisis levels and more than doubling from the trough levels seen in 2009 and 2010.

Capex development (€m) of major European OEMs, 2006-17e



Source: SG Cross Asset Research/Equity

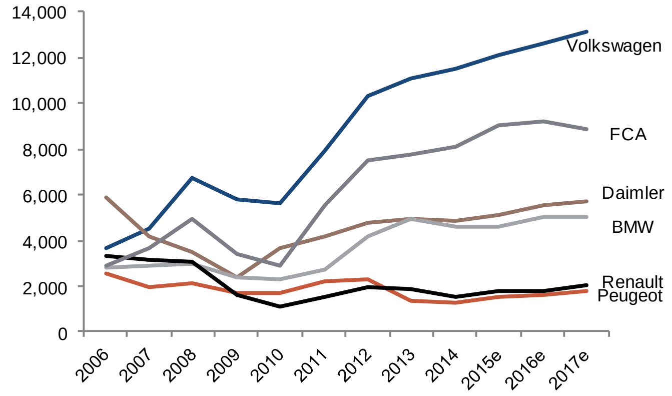
Capex as% of sales of European OEMs, 2006-17e



Source: SG Cross Asset Research/Equity

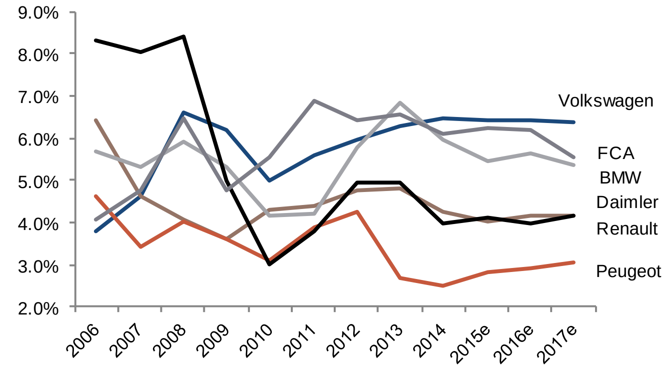
We think there is good reason to believe that the current auto capex cycle will last longer. We think that Volkswagen's ambitious capex plans are not only supportive of European auto capex overall, but will also have some knock-on effects on other OEMs.

Capex development (€m) of major European OEMs, 2006-17e



Source: SG Cross Asset Research/Equity

Capex as% of sales of European OEMs, 2006-17e



Source: SG Cross Asset Research/Equity

In November 2014, Volkswagen provided an update of its capex plans. At the time it said that it would spend €85.6bn for new car models, environmentally friendly technologies and production facilities over the following five years. About half of that capex is supposed to be spent on plant and equipment in Germany. In addition to that, Volkswagen announced that its Chinese JVs would spent an additional €22bn in 2015-19.

Following a strong recovery of the US economy, and with it, the auto market, we think automotive capex will continue to increase, but with a focus on modernisation rather than expansion, which we expect to drive auto capex in southeast Asia, particularly in South Korea and China. Channel checks suggest growing demand also comes from Chinese OEMs investing in overseas production facilities.

Therefore, we think the short-term risk/reward profile associated with automotive capex is positive and skewed to the upside more than to the downside, as we believe the long-term structural drivers for the automotive industry are intact. However, we do not believe that automotive capex cyclicality will disappear. Any disruption in car demand could cause at least some projects to be delayed. Additionally, the auto industry is well known to overshoot in one or the other direction.

Moving into final assembly offers additional opportunities within the auto industry

Moving into final assembly

As discussed above, the automotive industry has been the main driver of new robot installations over the past five years, with large investments having been made in North America and Brazil. However, the majority of new robots went into new capacities or retooling or increased existing capacities with a focus on the body shop, where the degree of automation is amongst the highest in the automotive industry.

We think Kuka is well positioned with its lightweight robot LBR iiwa to enter new areas within the car industry and other assembly tasks in the general industry, where the degree of automation is still very low.

Automation degree in auto production

	Power train	Press shop	Body Shop	Paint shop	Final assembly
Number of robots per segment	40-100	7-15	400-600	40-50	10-20
Robot applications	▪ Handling ▪ Assembly ▪ Welding ▪ Machining	▪ Handling ▪ Press linking	▪ Spot welding ▪ Laser welding ▪ Gluing ▪ Riveting ▪ Handling ▪ Body transfer ▪	▪ Painting ▪ Sealing	▪ Assembly ▪ Handling
Degree of automation	▪ Medium to high	▪ High	▪ Very high	▪ High	▪ Very low

Source: Kuka, based on production of 200,999 cars per year

During a pilot project with Daimler that started in 2009, more than 500,000 rear-axle gear boxes were produced with the help of Kuka's light-weight robot. In the past, such jobs were carried out only by workers, as the assembly of such complex units was too complicated to use robots for the assembly task at hand.

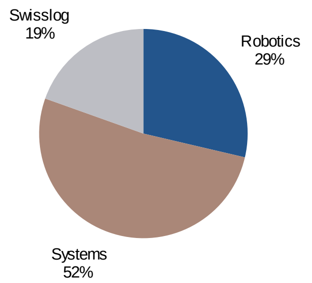
At the Automatica trade fair in 2014, Kuka showcased several opportunities for using its LBR iiwa, such as the assembly of hoses and cables, the precise assembly of parts while detecting the correct installation position or the assembly of automotive parts and the performance of non-ergonomic and monotonous tasks such as inserting plugs into a car body, but with the same perfection 24/7.

According to Horst Neumann, VW board member for human resources, VW would need to hire as many as 10,000 workers annually, which seems impossible. To cope with the lack of people, VW said it could replace workers with robots for routine tasks, thereby strengthening its competitiveness as robots cost VW between €3 and €6 per hour over the robot's lifetime, including maintenance and energy costs, compared to more than €40 per hour in labour costs per worker in Germany (incl. wages, pension and healthcare costs) versus €11 in Eastern Europe and (currently) less than €10 in China.

Divisional picture

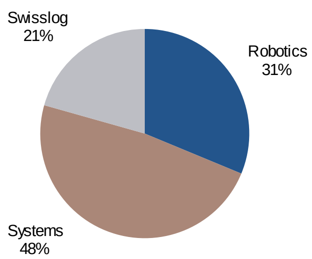
Kuka now operates in three divisions, with the robotics division being the main contributor to the group's EBIT, as margins within robotics are well ahead of those in systems and Swisslog. However, given the low levels of capital employed in systems, the divisional ROCE of 67.9% (77% organic) stood well above that of the robotics division at 53.5%.

Kuka new orders by division, *pro forma*



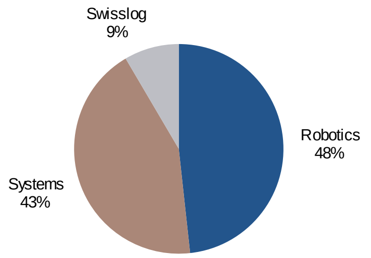
Source: Kuka, Swisslog, SG Cross Asset Research/Equity

Kuka sales by division, *pro forma*



Source: Kuka, Swisslog, SG Cross Asset Research/Equity

Kuka EBIT by division, *pro forma*



Source: Kuka, Swisslog, SG Cross Asset Research/Equity

Robotics (31% of *pro forma* sales, 48% of EBIT)

Kuka's robotics division is a global leading manufacturer of state-of-the-art industrial robots offering the world's largest product range with payloads of up to 1.3 tonnes. Kuka's robot offering is based on a modular concept, i.e. Kuka is able to customize robots to match its customer's needs, but keeping costs under control.

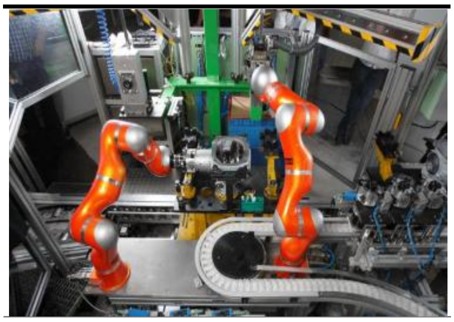
Kuka's robotic product portfolio (selection)

Source: SG Cross Asset Research/Equity

With this broad range of payloads, Kuka not only serves the automotive industry (40% of divisional orders), but also a broad range of general industries (39% of orders), including aerospace, foundries, metalworking, plastics, or clean-room applications such as the electronics and medical industries.

With its latest innovation, the light weight robot LBR iiwa, we think Kuka has started into a new area of automation, creating completely new robot-based applications in many different end-markets, as Kuka is closing the gap between manual work and fully automated workplaces, as this type of robot allows for the first-time the collaboration between robots and humans, which we believe is a key element of Industry 4.0. Even moving a camera in a TV news studio or putting tablets from a conveyor into a tray can be managed with such a robot.

LBR iiwa in assembly line



Source: Kuka

Medical robot

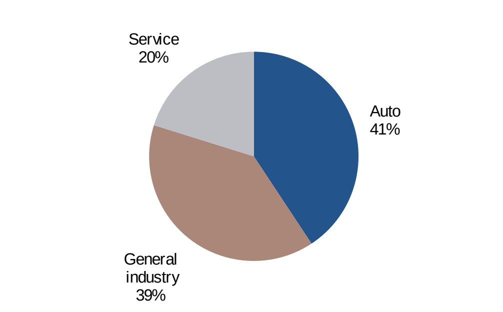
Source: Kuka

Kuka youBot – mobile robot

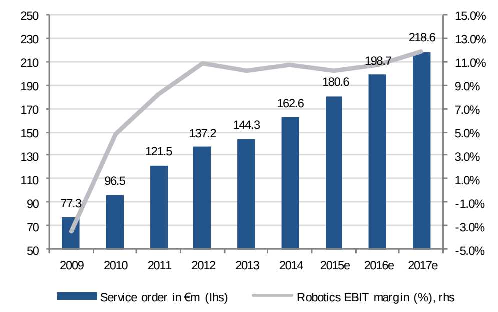
Source: Kuka

Kuka not only assembles robots, but also provides support to its customers during the planning and commissioning and the entire lifetime of the robot through its maintenance services, including upgrades and retrofits which account for c.20% of divisional orders. We believe this has a positive impact on its divisional earnings, as we expect the service margin to be in the mid-teens percentage points.

Kuka robotic orders by segment, 2014



Robotic service development and EBIT margin



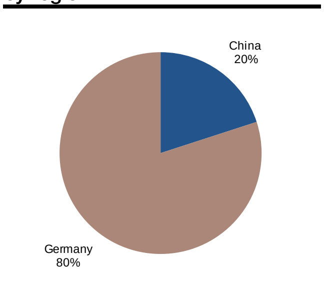
Source: Kuka, SG Cross Asset Research/Equity

In addition to the robots, Kuka offers a broad range of software solutions and controllers that are based on Windows™-compliant user interfaces.

Moving into China

Kuka recently increased its global annual assembly capacities to 25,000-27,000 robots, of which it has 5,000-robot capacity in China with the rest in Germany. According to Kuka, this could double its Chinese capacities by running three shifts and the weekend, putting them well ahead of competitors, which plan to have around 10,000 units assembly capacity by 2017. Kuka moved into China in as early as 1997 and had initially used factory space from its former anchor shareholder Grenzebach, before ramping up a local production site that started in March 2014 with kick-off orders for 1,375 robots from Chinese automotive customers.

Kuka's robot assembly capacity by region



Source: Kuka, SG Cross Asset Research/Equity

In our view, Kuka's robotics division is favourably positioned to capture growth in Asia and in particular from China, where it today operates an assembly capacity of 5,000 robots, which we expect to be fully loaded this year. Keep in mind that Kuka does not assemble its entire product range in China, but just a selection, i.e., while having assembled c.4,000 robots in China last year, Kuka sold more than 5,500 units into the Chinese market, which translates into a market share of c.14%, in articulated robots, that account for c63% of the overall robot shipments in China. We believe, Kuka is close to expand its local capacities, which makes us believe that management will provide an update soon, about the further progression of Kuka's presence in China. Channel checks suggest that Japanese robot makers have just capacities around 2,000 to 3,000 robots in China, which puts Kuka well ahead of its competitors, that are planning capacities of 10,000 to 12,000 robots by 2017, the earliest. According to Kuka, the assembly of robots in China is not significantly cheaper than in Europe, but to be accepted by local customers, one needs to be as Chinese as possible. Moreover, many parts such as gears stem from Japan, i.e. the local Chinese assembly site ideal located from a logistics point of view to shorten delivery times.

Key financials

We believe that Kuka will accelerate its growth into the general industry, also covering new areas such as the service robotics, and penetrating the health care industry, including surgery and rehab, further. Those customers typically just order a handful of robots, which have by far better margins than robots sold to OEMs, typically ordering hundreds of robots at once. This is why we believe Kuka will be able to increase its EBIT margin towards its 12% target EBIT margin by 2017.

Robotics key financials 2008-17e

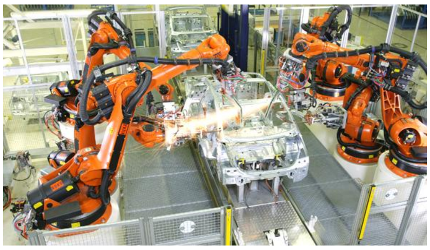
(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e	CAGR 2008-14	CAGR 2015-17e
New orders	**464.4**	**324.3**	**486.2**	**654.4**	**803.1**	**793.5**	**805.5**	**905.4**	**1,005.7**	**1,092.1**	**9.6%**	**9.8%**
Change yoy (%)	6.8%	-30.2%	49.9%	34.6%	22.7%	-1.2%	1.5%	12.4%	11.1%	8.6%		
Order backlog	100.2	93.9	149.0	184.4	248.7	280.7	241.5	260.3	320.1	370.8		
Sales	**474.4**	**330.5**	**435.7**	**616.3**	**742.6**	**754.1**	**834.6**	**900.0**	**960.8**	**1,041.4**	**9.9%**	**7.6%**
Change yoy (%)	14.9%	-30.3%	31.8%	41.5%	20.5%	1.5%	10.7%	7.8%	6.8%	8.4%		
EBIT	**42.0**	**-11.5**	**20.8**	**51.0**	**80.2**	**77.1**	**89.5**	**96.8**	**110.1**	**127.9**	**13.4%**	**15.0%**
EBIT margin (%)	8.9%	-3.5%	4.8%	8.3%	10.8%	10.2%	10.7%	10.8%	11.5%	12.3%		

Source: Kuka (for stated figures), SG Cross Asset Research/Equity

Systems (48% of *pro forma* sales, 42% of EBIT)

In its systems division, Kuka is a supplier of automated production and assembly solutions for industrial manufacturing processes, mainly serving customers of the automotive industry as a systems integrator that accounts approximately 80% of divisional sales. In the recent past, Kuka has gradually increased its exposure into other end-markets, which we believe are on the verge of adopting automated production systems.

While automotive customers will likely remain Kuka's bread and butter business within systems, we see substantial growth potential in industries such as aerospace, the rail vehicle production industry, energy (solar and wind) and especially in the consumer goods and electronics industries.

Body in white production	Aerospace: B777 fuselage assembly	Solar cell production
		
Source: Kuka	Source: Kuka, Boeing	Source: Kuka

Following the acquisition of Alema, Kuka's systems business has become a full-range supplier in the aircraft industry, now also offering drilling and rivet setting applications, which we believe has opened the door to high growth potential in the area of light automation. Together with Boeing (Hold) and LISI (Buy), Kuka has developed the Fuselage Automated Upright Build (FAUB), an automated assembly technology that improves workplace safety and increases productivity.

With the FAUB, the fuselage will be assembled by automated guided robots that will fasten the panels of the fuselage together, thereby drilling and filling more than 60,000 fasteners that are today installed by hand, with employees positioned inside and outside the fuselage, working synchronously. Boeing flagged that more than half of all injuries on the 777 programme have occurred during the phase of production that is getting automated soon. While still in a testing phase, replacing humans is superior to manual labour as the band of quality deviation is much narrower, according to Boeing, which plans to implement this technique over the next few years and use it in 777 and 777X production.

Smart factory Industry 4.0

With the help of its sensor-based LBR iiwa robot, we view Kuka's systems business as best positioned to shape the Industry 4.0 by filling the gap between manual work and fully automated workplaces. The factories of the future will no longer be a "digital place" where only one of the two ways of working exists, but rather a mixture of the two, where humans work together with robots, opening up entirely new applications.

Smart factory product offering from Kuka systems

Source: Kuka
1) HRC = Human robot collaboration

Key financials

Recently, Kuka has divested its tooling business (c.€80m annual sales and c.€6m EBIT) to Porsche (still subject to anti-trust authorities), which resulted in a low double-digit €m profit (SGe €15m, split €10m in Q2, €5m in Q3).

Systems key financials 2008,-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e	CAGR 2008-14	CAGR 2015-17e
New orders	**854.9**	**615.4**	**716.8**	**916.6**	**1,115.1**	**1,111.6**	**1,456.0**	**1,470.6**	**1,544.1**	**1,621.3**	**9.3%**	**5.0%**
Change yoy (%)	-8.8%	-28.0%	16.5%	27.9%	21.7%	-0.3%	31.0%	1.0%	5.0%	5.0%		
Order backlog	450.3	460.2	500.0	545.0	666.1	714.4	955.4	1,065.8	1,077.9	1,066.3		
Sales	**837.5**	**605.5**	**695.3**	**850.7**	**1025.3**	**1045.9**	**1285.6**	**1427.7**	**1531.9**	**1632.9**	**7.4%**	**6.9%**
Change yoy (%)	-6.9%	-27.7%	14.8%	22.4%	20.5%	2.0%	22.9%	11.1%	7.3%	6.6%		
EBIT	**26.8**	**-29.1**	**20.0**	**33.7**	**47.7**	**60.8**	**80.2**	**96.5**	**111.2**	**124.3**	**20.0%**	**13.5%**
EBIT margin (%)	3.2%	-4.8%	2.9%	4.0%	4.7%	5.8%	6.2%	6.8%	7.3%	7.6%		

Source: Kuka (for stated figures), SG Cross Asset Research/Equity

Swisslog (21% of *pro forma* sales, 10% of *pro forma* EBITA)

Swisslog was the latest addition to Kuka, which acquired the company in late 2014 for CHF1.35 per share, representing a purchase price of CHF338m and an enterprise value of CHF353m. The offer was priced at an 8.9% premium to the closing price on 24 September and a 15.4% premium over the 60-day volume-weighted average price of Swisslog shares. During the public tender, Kuka acquired more than 96% of Swisslog and recently requested a merger with cash compensation of CHF1.35 per share and a delisting of the Swisslog shares, which should be agreed on at the EGM scheduled on 28 July. Swisslog was consolidated by Kuka for the first time effective 1 January 2015.

Swisslog was founded in 1900 with headquarters in Buchs/Aargau in Switzerland and has 30 offices in more than 20 countries in Europe, North America, APAC and the Middle East, covering customers in over 50 countries. Swisslog operates in two business areas, healthcare solutions (HCS, 31% of sales) and warehouse & distribution solutions (WDS, 69% of sales).

Automated unit-dose systems (HCS)

Source: Swisslog

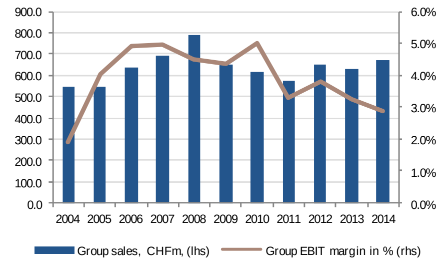
Swisslog autostore (WDS)

Swisslog

Automated item pick (Swisslog + Kuka)

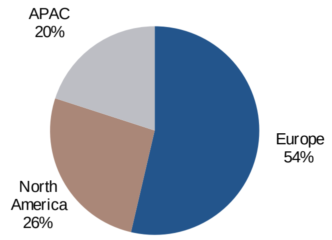
Before the takeover by Kuka, Swisslog generated CHF670m in revenues and reported an EBIT margin of 2.9% in 2014, excl. CHF4.4m in merger-related transaction costs, versus peak margins of 5.0%, reported in 2010.

Swisslog group sales and EBIT margin



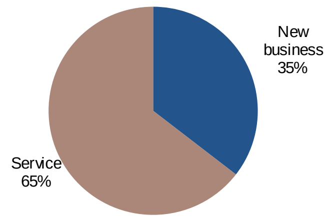
Source: Swisslog, SG Cross Asset Research/Equity

Swisslog sales by region, 2014



Source: Swisslog, SG Cross Asset Research/Equity

Swisslog service share, 2014



Source: Swisslog, SG Cross Asset Research/Equity

Hospitals with >150 beds

Global	**17,200**
Americas	3,650
EMEA	4,950
APAC	8,600

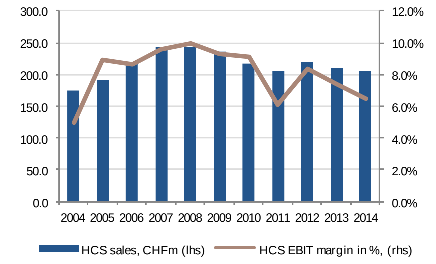
Source: Swisslog, SG Cross Asset Research/Equity

HCS

In HCS, Swisslog delivers best-in-class automation solutions for forward-thinking hospitals, increasing their efficiency, thereby not only enhancing the patient experience but also reducing the risk of miss-medication through its automated medication storage and retrieval systems, part of its automated drug management systems (ADMS). Other products mainly used to transport a wide range of goods and materials, such as tube systems, are grouped in the automated materials transport systems (AMTS). Swisslog targets some 17,200 large and medium-sized hospitals (>150 beds) in North America, Europe and APAC. Thanks to an installed base of around 3,000 hospitals with an increasing share of ADMS, the divisional customer service business gains importance, now representing 32% of sales (versus 28% in 2012).

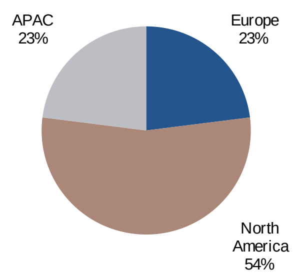
Historically the HCS business has been driven by the North American market, of which Swisslog controls approximately two-thirds compared to market shares below 10% in Europe and APAC. With demand weakening in the US, partly due to ObamaCare, growth opportunities are shifting towards APAC, with stable to slightly growing markets in Europe. According to Swisslog, the Asian markets for AMTS and ADMS are expected to grow 30% and 40%, respectively, with growth in Europe and North America at 0-3% and 8%, respectively.

HCS sales and EBIT margin



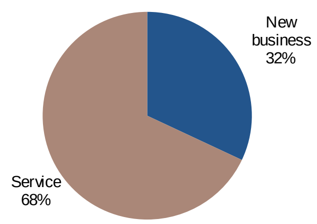
Source: Swisslog, SG Cross Asset Research/Equity

HCS sales by region, 2014



Source: Swisslog, SG Cross Asset Research/Equity

HCS service share, 2014

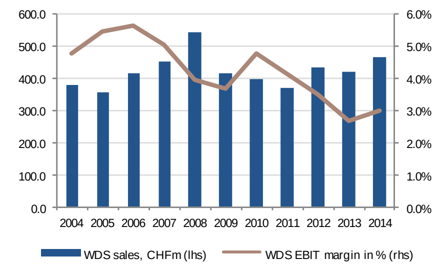


Source: Swisslog, SG Cross Asset Research/Equity

WDS

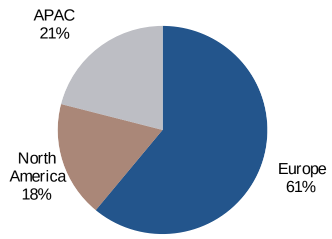
In WDS, Swisslog designs, develops and delivers state-of-the-art intralogistics automation solutions for warehouses and distribution centres, thereby focusing on the retail industry, including e-commerce, pharma as well as temperature-controlled food. With its autostore system, Swisslog offers flexible storage solutions which can increase the storage capacity by up to 150% while minimizing picking errors, according to Swisslog.

WDS sales and EBIT margin



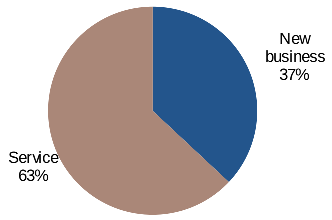
Source: Swisslog, SG Cross Asset Research/Equity

WDS sales by region, 2014



Source: Swisslog, SG Cross Asset Research/Equity

WDS service share, 2014



Source: Swisslog, SG Cross Asset Research/Equity

Kuka and Swisslog joining forces

According to Kuka, management sees significant sales and procurement synergies, a view we share. Although still at an early stage, the first jointly developed products were launched at the Hanover fair in May 2015, by combining Kuka's LBR iiwa robot with Swisslog's automated carrypick and autostore goods-to-person picking solutions into an interactive human robot-collaborating workstation.

In our view, this was just the beginning of a powerful partnership, which makes us believe that management's target to almost double Swisslog's revenues by 2020 to c.€1bn, looks reasonable, although we expect this to be more back-end loaded.

Key financials (€m)

Swisslog key financials 2005-14

(in €m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e	CAGR 2008-14	CAGR 2015-17e
EUR/CHF	1.59	1.51	1.38	1.23	1.21	1.21	1.22	1.02	1.07	1.11		
New orders	**376.9**	**425.3**	**442.5**	**565.3**	**524.6**	**579.6**	**550.0**	**603.4**	**663.7**	**730.1**	**6.5%**	**10.0%**
Change yoy (%)	-27.2%	12.8%	4.1%	27.8%	-7.2%	10.5%	-5.1%	9.7%	10.0%	10.0%		
Order backlog	281.1	295.6	290.3	421.4	404.3	448.1	517.2	546.4	558.5	571.8		
Sales	**495.6**	**430.4**	**445.2**	**466.2**	**540.9**	**522.8**	**551.0**	**614.5**	**651.7**	**716.8**	**1.8%**	**8.0%**
Change yoy (%)	17.1%	-13.2%	3.4%	4.7%	16.0%	-3.3%	5.4%	11.5%	6.0%	10.0%		
EBITA	**22.3**	**18.8**	**22.4**	**15.3**	**20.7**	**16.9**	**15.7**	**16.9**	**29.4**	**39.1**	**-5.6%**	**52.2%**
EBITA margin (%)	4.5%	4.4%	5.0%	3.3%	3.8%	3.2%	2.9%	2.8%	4.5%	5.5%		

Source: Kuka, Swisslog, SG Cross Asset Research/Economics (for FX rates), SG Cross Asset Research/Equity

Kuka SWOT analysis

In our view, Kuka is well positioned in the automotive industry, having a strong relationship (70% market share) with many German OEMs, which we believe belong to the most solid OEMs at the moment. Also, we think that Kuka's innovative products, such as the LBR iiwa stands out. No other company is such a pure play on robotics and hence on industry 4.0 like Kuka. On the weak side, its systems business is much exposed to the automotive industry (80% of sales) which has lower margins than in robotics. Also, as a pure play, Kuka is much smaller than most of competitors which run the robotics business as one of their divisions. The high power of its major buyers, the OEMs, is another weakness which also applies to its peers.

Kuka SWOT analysis

Low threat from new entrants	High buyer power
High start up costs & need of development competence	Small number of buyers place large orders
Established customer relationship and economies of scale	High price sensitivity but costly to change supplier
Potential growth and JV partners	Little back- and forward integration

Rivalry in the robotics industry

Moderate to high power of suppliers	Moderate threat of substitutes
Size of supplier and oligopoly threat	Human capital
Robot producers dispensability, moderate swinging costs	Other automation solutions
Little back- and forward integration	Other robots

Source: SG Cross Asset Research/Equity

Competitive edge

Kuka operates in an environment that is highly competitive, especially in times of a weaker Japanese Yen, which has recently been a major cost advantage for its Japanese peers, Fanuc Yaskawa and Kawasaki. However, as the number of key component suppliers is limited and the majority is sourced from Japanese player Nabtesco, Kuka also gains on a weaker Yen, which limits the impact on margins, but volumes could be impacted. While the pricing power of the suppliers is moderate to high, the pricing power of buyers is still high but could become moderate in the future when more general industry customers enter the market that typically place smaller orders and are less price aggressive than OEMs, which typically have a dual or even triple sourcing strategy, placing large package orders including installation, training and maintenance, but are very price sensitive amongst the established robot suppliers.

Porter's five forces in the robotics industry

Low threat from new entrants	High buyer power
High start up costs & need of development competence	Small number of buyers place large orders
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Rivalry in the robotics industry

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Source: Porter, SG Cross Asset Research/Equity

Typically the Japanese robot makers have strong and long-lasting relationships with Japanese and Korean OEMs, while the European players are more established amongst the European OEMs. Indeed, Kuka is number one in Europe. We regard the barrier to entry into the robot industry as high, as we see the long-standing customer relationships as key in the robotics industry, weakening the threat of new entrants. Another softening factor for the threat of new entrants is the high start-up costs and the required development competence to start developing robots from scratch.

Robot reliability and availability is also key, as robots are required to perform 24/7 without any failure. Kuka robots have technical availability of 99.9%, and with its service offerings, Kuka guarantees response times of two hours, ensuring 99% availability, setting benchmarks in the industry. Kuka has robots in its product offering that guarantee 40,000 hours of production, while having some of the highest repeatability numbers of less than ± 0.03mm. Since Kuka's robot controllers are based on Windows®, we believe they are amongst the easiest to adopt, especially with regard to new customers in the general industry, putting Kuka head of major competitors.

While there are globally just around 200 robot manufacturers, the industry is highly consolidated as c.70% of the market is dominated by six players, with Kuka, Fanuc, Yaskawa, Stäubli and ABB being the largest.

Kuka versus selected industry peers – key metrics, 2014

Robotic company	Kuka	ABB	Fanuc	Yaskawa	Kawasaki	Siasun Robot & Automation
Company profile (currency)	EUR	CHF	JPY	JPY	JPY	CNY
Group sales (in local currency, m)	2,095.7	39,830.0	729,760.0	400,153.0	1,486,100.0	1,520.0
Group sales (€m)	2,095.7	32,647.5	5,199.5	2,851.1	10,588.5	186.3
% of sales from robotics and systems	100%	3%	25%	34%	9%	28%
Robotics & systems sales (€m)	2,095.7	979.4	1,296.7	968.7	963.6	52.2
Robotics & systems EBIT margin	6.9%			7.8%		
Installed base (units)	>150,000	250,000	220,000	270,000	64,000	
Chinese capacity (current)	5,000	-	-	3,000	2,000	5,000
Chinese capacity (potential)	10,000	-	-	12,000	10,000	
Geographic exposure 2014						
Asia / China	14%	27%	54%	33%	17%	95%
Europe	53%	34%	12%	12%	8%	0%
North America	28%	29%	17%	18%	24%	0%
Japan			17%	36%	42%	
ROW	4%	10%	0%	1%	9%	5%
Key customers	Daimler	BMW	General Motors	Honda	Toyota	Delphi
	BMW	Volkswagen	Nissan	Hyundai Motor	Nissan	Shanghai Jiao Yun
	Volkswagen	Honda	Foxconn		Subaru	ZF Friedrichshafen
	Foxconn	General Motors			Ford	
		Toyota				
		Foxconn				
Key activity	Robotics Systems	Power equipment Automation	Robotics CNC - automation	Robotics Motion controls	Robotics Automation	Robotics

Source: Company, SG Cross Asset Research/Equity

ABB

ABB has supplied electrically powered industrial robots since 1974, serving various end-markets such as automotive, packaging and palletising and consumer electronics. According to ABB, its global installed base of robots is c.250,000 units. Like Kuka, ABB has started to redefine the robotics industry with the launch of its YuMi® robot, a dual-arm, force-sensing technology, collaborative-based robot which is designed for a new era of automation; for example, in small parts assembly, where people and robots safely work alongside each other on the same tasks.

Fanuc

Fanuc is a Japanese-based robotics and automation company that operates in three divisions: FA (49% of sales, focussing on CNC systems), Robot (32% of sales, focussing on industrial robots) and Robomachine (19% of sales, focussing on small machining centres). With an installed base of more than 220,000 robots, Fanuc is amongst the world's leading robot makers. Fanuc has only production capacities in Japan.

Yaskawa

Yaskawa is a Japanese-based robot maker that is currently expanding its global robotic centres from 30 sites at the end of FY2013 to 39 sites by the end of FY2015 to seek better understanding of industrial robotics and to educate potential customers. This strong push by Yaskawa underlines the importance of the robotics industry expanding into the general industry. Yaskawa has a Chinese capacity designed for 12,000 robots, with 3,000 units for the time being.

Kawasaki

Kawasaki Robotics is a division of Kawasaki Heavy Industries (KHI) Ltd., a global industrial and technological business leader. KHI was established as a ship builder in 1896 and today is composed of more than 100 companies in Japan and around the world. KHI employs nearly 29,000 people worldwide and has a sales volume of more than $10.5 billion. Kawasaki entered the robotics business in 1968 with a technology license agreement with Unimation and started manufacturing and selling robots in Japan. Kawasaki founded its Chinese subsidiary in 2006 and is currently enrolling its production capacities into China with an initial capacity of 2,000 units that should reach 10,000 by 2017. In 2013, Kwasaki launched its medical and pharmaceutical robot.

Stäubli

Stäubli is a Swiss-based mechatronics solutions provider with three dedicated divisions: Textile, Connectors and Robotics. In its robotics division, Stäubli is focussing on small- to medium-sized picker robots and 4-axis as well as 6-axis robots with payloads up to 190kg. The group generated revenues of above CHF1bn with more than 4,000 employees.

Chinese competitors

Today, the competition from Chinese players is very limited, with Shanghai-based Siasun Robot & Automation being the only large Chinese player, focussing on Chinese OEMs. The company designs, manufactures and sells robots as well as storage and automation solutions. The company enjoyed tremendous sales growth of 227% over 2009-14. However, channel checks suggest that due to different qualities, Siasun robots sell at a discount to international peers. Another player, still at an early stage is Estun robotics. However, the Chinese government has released a document regarding its promotional policy for the robot industry, which sets forth the targets for the Chinese robot industry to create three to five leading companies by 2020 with international competitiveness.

Systems

In systems, Kuka mainly competes with Comau, part of Fiat Automotive and the systems business of ThyssenKrupp.

Swisslog

HCS

Swisslog competes mainly with CareFusion, Omnicell Emerson and McKesson within its ADMS segment, where as in AMTS, it competes with Aerocom, JBT Corporation, Sumetzberger, Pevco, Lamson as well as some smaller niche players that have recently emerged on the scene.

WDS

Within its **WDS business**, Swisslog mainly competes with other logistics specialists such as Daifuku, Dematic, Jungheinrich, Kion (Egemin), Savoye, Schäfer, Sivaplan, Westfalia and Witron.

Financials

Kuka, 2020e – medium-term financial guidance

Following the Swisslog takeover, Kuka has redefined its medium-term targets. By 2020, management expects revenues to double to €4.0-4.5bn with an EBIT margin above 7.5%, which implies an EBIT of €300-338m by 2020 versus €145m in 2014.

A large proportion of this growth should come from the acquisition of Swisslog, which not only adds €626m to revenues already in 2015 based on our estimates, accounting for one-third of the anticipated growth. For Swisslog, Kuka aims to almost double its 2014 revenues of €551m (CHF669.6m, avg. FX EUR/CHF 1.215 in 2014) to c.€1.0bn by 2020.

Over the next three to five years, management aims to increase the robotics margin to at least 12%, and in systems to at least 6%, bringing the Swisslog margin to the 5% target level. Over that period, management plans to expand its Asian activities and targets to achieve c.30% of sales from Asia versus c.19% in 2014.

Q2 15 results review

Solid set of Q2 results released on 5 August

Kuka reported another set of solid Q2 numbers, with new orders +22% (organically flat) to €696m. China new orders surged by over 80% in Q2 to €55m, more than compensating for the 25% slump in Q1, and now accounting for 20% of new orders. Sales rose 50% (organic +9.7%) to €758m, the order backlog increased 40% to €1,786m and the adj. EBITA (excl. €17m PPA related to Swisslog and €7.9m book gain) was up 44% to €50.0m, representing an EBITA margin of 6.6%, marginally above the 6.5% reported in Q1. Excluding the dilutive impact from Swisslog, Kuka's group EBIT margin would have been at a record-high level of 9.3%. Kuka booked a €7.9m gain related to the latest divestments from its tools and dies businesses, resulting in reported EBIT of €40.9m. Thanks to lower financing costs, net income and adjusted net income more than doubled to €26.8m and €30.8m, respectively, as the book gain was not taxable. Reported EPS stood at €0.75, with adj. EPS at €0.86 and diluted adj. EPS of €0.79.

Divisional picture

In **robotics,** new orders were +6% to €220m, sales +7% to €217m, with the order backlog -17% to €267m and EBIT +10% to €24.0m, representing an EBIT margin of 11.1%. In **systems**, new orders were -4.4% to €360m, sales +25% to €382m, the order backlog +9% to €1,050m, and EBIT +143% to €39.4m with clean EBIT (excl. €7.9m book gain) at €31.5m, representing a record-high EBIT margin of 8.2%. For **Swisslog,** Kuka reported new orders +1% to €123m with sales +20% to €168m, the order backlog at €478m and adj. EBITA (excluding €17.0m PPA) of €285, representing an EBIT margin of 1.5%.

2015 guidance raised

Management sounded upbeat on H2 15 and raised its 2015 outlook for sales from c.€2.8bn to c.€2.9bn sales (versus SGe and consensus €2.89bn). Guidance for the EBIT margin was also raised from c.5.5% to a range 6.5-7.0%, excluding €60m PPA related to Swisslog, but including the c.€15m book gain (SGe €14.4m) on the disposal of HLS and its tools and dies business. While we still think it is too early to call for a quick margin turnaround at Swisslog this year, we believe Kuka is executing well in robotics and systems, more than offsetting Swisslog's weak performance, which should be a clear margin driver over the next three years.

New orders and order backlog

Following the financial crisis, Kuka faced a severe drop in new orders in both robotics and systems orders, with orders falling at both segments by more than 30% peak to trough. In robotics, orders from the general industry and service have held up somewhat better than automotive, which dropped 38% in 2008m but recovered by 93% in 2010. In systems, the recovery post Lehman was little bit slower than in robotics.

Kuka's new orders and order backlog, 2008-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e	CAGR 2009-14	CAGR 2015-17e
Robotics	**464.4**	**324.3**	**486.2**	**654.4**	**803.1**	**793.5**	**805.5**	**905.4**	**1,005.7**	**1,092.1**	**20.0%**	**9.8%**
Change yoy (%)	6.8%	-30.2%	49.9%	34.6%	22.7%	-1.2%	1.5%	12.4%	11.1%	8.6%		
Systems	**854.9**	**615.4**	**716.8**	**916.6**	**1,115.1**	**1,111.6**	**1,456.0**	**1,470.6**	**1,544.1**	**1,621.3**	**18.8%**	**5.0%**
Change yoy (%)	-8.8%	-28.0%	16.5%	27.9%	21.7%	-0.3%	31.0%	1.0%	5.0%	5.0%		
Swisslog	**376.9**	**425.3**	**442.5**	**565.3**	**524.6**	**579.6**	**550.0**	**603.4**	**663.7**	**730.1**	**5.3%**	**10.0%**
Change yoy (%)	-27.2%	12.8%	4.1%	27.8%	-7.2%	10.5%	-5.1%	9.7%	10.0%	10.0%		
Overhead	-39.4	-36.4	-60.7	-18.0	-28.6	-23.2	-32.5	-32.5	-32.5	-32.5		
Group	**1,279.9**	**903.3**	**1,142.3**	**1,553.0**	**1,889.6**	**1,881.9**	**2,229.0**	**2,946.8**	**3,181.0**	**3,411.0**	**19.8%**	**7.6%**
Change yoy (%)	-4.8%	-29.4%	26.5%	36.0%	21.7%	-0.4%	18.4%	32.2%	7.9%	7.2%		
Group order backlog	**542.3**	**543.5**	**630.5**	**724.0**	**909.4**	**991.6**	**1,185.3**	**1,872.5**	**1,956.6**	**2,008.9**	**16.9%**	**3.6%**
Change yoy (%)	2.5%	0.2%	16.0%	14.8%	25.6%	9.0%	19.5%	58.0%	4.5%	2.7%		

Source: Kuka and Swisslog (for stated figures); SG Cross Asset Research/Equity
*Note: Swisslog will be consolidated for the first time effective 1 January 2015. Historical numbers were not part of Kuka and are just shown to illustrate Swisslog's performance

P&L

Order lead times vary quite a bit at Kuka, from a few months for a single piece of machinery and smaller robots sold to the general industry, up to one or two years for large-frame contracts / projects within systems. At projects, revenues typically following an S-curved shape, i.e. low revenues at the beginning and the end of project, with the majority of sales generated in 12-18 months of the project time, which is in contrast to profits, which are booked more towards the end of a project. Revenues are recognised in the P&L on delivery and risk is transferred to the customer with revenues for long-term contracts recognized as a percentage of completion. This data line stood at €1.043m in 2014, representing c.50% of group sales.

Kuka divisional revenues, 2008-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e	CAGR 2009-14	CAGR 2015-17e
Robotics	**474.4**	**330.5**	**435.7**	**616.3**	**742.6**	**754.1**	**834.6**	**900.0**	**960.8**	**1,041.4**	**20.4%**	**7.6%**
Change yoy (%)	14.9%	-30.3%	31.8%	41.5%	20.5%	1.5%	10.7%	7.8%	6.8%	8.4%		
Systems	**837.5**	**605.5**	**695.3**	**850.7**	**1,025.3**	**1,045.9**	**1,285.6**	**1,427.7**	**1,531.9**	**1,632.9**	**16.3%**	**6.9%**
Change yoy (%)	-6.9%	-27.7%	14.8%	22.4%	20.5%	2.0%	22.9%	11.1%	7.3%	6.6%		
Swisslog	**495.6**	**430.4**	**445.2**	**466.2**	**540.9**	**522.8**	**551.0**	**614.5**	**651.7**	**716.8**	**5.1%**	**8.0%**
Change yoy (%)	17.1%	-13.2%	3.4%	4.7%	16.0%	-3.3%	5.4%	11.5%	6.0%	10.0%		
Overhead	-45.8	-33.9	-52.4	-31.4	-28.7	-25.5	-24.5	-48.6	-52.0	-56.1		
Group	**1,266.1**	**902.1**	**1,078.6**	**1,435.6**	**1,739.2**	**1,774.5**	**2,095.7**	**2,893.5**	**3,092.5**	**3,335.0**	**18.4%**	**7.4%**
Sales growth yoy (%)	-1.6%	-28.8%	19.6%	33.1%	21.1%	2.0%	18.1%	38.1%	6.9%	7.8%		

Source: Kuka and Swisslog (for stated figures); SG Cross Asset Research/Equity
*Note: Swisslog will be consolidated for the first time effective 1 January 2015. Historical numbers were not part of Kuka and are just shown to illustrate Swisslog's performance

Following the financial crisis, when Kuka's operating profits turned negative in both robotics and in systems mainly as a function of sharply reduced volumes and hence underutilization of its factories, Kuka restructured and streamlined its operation swiftly to restore not only historical margins, but also to step those up to the next level. The margin erosion in robotics in 2013 was partly driven by increased Japanese competition, which took advantage of the weaker Japanese yen and increased R&D, laying the fundamentals for further growth. In robotics, the EBIT margin was continuously improving, even after the acquisition of initially margin-dilutive Reis, which generated a loss of c.€7.5m in 2014. Even though Reis has been turned around and is now profitable, the investments into a new PLM (product lifecycle management) and ERP (enterprise resource planning) system should weigh on the systems margin this year, which we believe will contribute positively from next year, as it allows for more shared services and better utilization of resources/purchasing synergies, amongst others.

Kuka divisional EBIT(A) and EBIT(A) margins, 2008-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015	2016e	2017e	CAGR 2008-14	CAGR 2015-17e
Robotics	**42.0**	**-11.5**	**20.8**	**51.0**	**80.2**	**77.1**	**89.5**	**96.8**	**110.1**	**127.9**	**13.4%**	**15.0%**
EBIT margin (%)	8.9%	-3.5%	4.8%	8.3%	10.8%	10.2%	10.7%	10.8%	11.5%	12.3%		
Systems	**26.8**	**-29.1**	**20.0**	**33.7**	**47.7**	**60.8**	**80.2**	**96.5**	**111.2**	**124.3**	**20.0%**	**13.5%**
EBIT margin (%)	3.2%	-4.8%	2.9%	4.0%	4.7%	5.8%	6.2%	6.8%	7.3%	7.6%		
Swisslog	**22.3**	**18.8**	**22.4**	**15.3**	**20.7**	**16.9**	**15.7**	**16.9**	**29.4**	**39.1**	**-5.6%**	**52.2%**
EBITA margin (%)	4.5%	4.4%	5.0%	3.3%	3.8%	3.2%	2.9%	2.8%	4.5%	5.5%		
Overhead	-16.8	-12.0	-16.0	-12.1	-18.1	-17.5	-25.1	-22.8	-24.7	-26.7		
Group	**52.0**	**-52.6**	**24.8**	**72.6**	**109.8**	**120.4**	**144.6**	**187.4**	**225.9**	**264.6**	**18.6%**	**18.8%**
EBIT(A) margin (%)	4.1%	-5.8%	2.3%	5.1%	6.3%	6.8%	6.9%	6.5%	7.3%	7.9%		

Source: Kuka and Swisslog (for stated figures); SG Cross Asset Research/Equity
*Note: Swisslog will be consolidated for the first time effective 1 January 2015. Historical numbers were not part of Kuka and are just shown to illustrate Swisslog's performance, Swisslog estimates are excluding PPA

According to Kuka, purchase price allocation (PPA) related to Swisslog should diminish already next year by c.€50m to c.€10m with an additional €2m reduction from 2018. By 2025, PPA should be as low as €1m, i.e. EBIT and EBITA should almost dovetail by then. Following the early redemption of its €202m high-yield bond (8.75% coupon) in May 2014, Kuka now has a €150m nominal value convertible bond issued with a 2% coupon maturing in February 2018. Given the initial conversion price of €36.8067, the bond is well in the money, which we have reflected in our diluted EPS, assuming c.€4.7m net-of-tax interest cost savings. Below we highlight Kuka's key P&L items on the group level.

Kuka key earnings highlights, 2008-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e	CAGR 2008-14	CAGR 2015-17e
Sales	**1,266.1**	**902.1**	**1,078.6**	**1,435.6**	**1,739.2**	**1,774.5**	**2,095.7**	**2,893.5**	**3,092.5**	**3,335.0**	**8.8%**	**7.4%**
Change yoy (%)	-1.6%	-28.8%	19.6%	33.1%	21.1%	2.0%	18.1%	38.1%	6.9%	7.8%		
Gross Profit	**260.8**	**159.2**	**211.2**	**290.1**	**393.2**	**445.2**	**529.3**	**730.8**	**781.0**	**842.3**	**12.5%**	**7.4%**
As % of sales	20.6%	17.7%	19.6%	20.2%	22.6%	25.1%	25.3%	25.3%	25.3%	25.3%		
EBITDA	**78.0**	**-29.5**	**47.0**	**98.7**	**138.5**	**158.4**	**187.5**	**254.4**	**296.1**	**337.6**	**15.7%**	**15.2%**
EBITDA margin (%)	6.2%	-3.3%	4.4%	6.9%	8.0%	8.9%	8.9%	8.8%	9.6%	10.1%		
EBIT	**52.0**	**-52.6**	**24.8**	**72.6**	**109.8**	**120.4**	**144.6**	**127.4**	**215.9**	**254.6**	**18.6%**	**41.4%**
EBITA margin (%)	4.1%	-5.8%	2.3%	5.1%	6.3%	6.8%	6.9%	4.4%	7.0%	7.6%		
EBT	47.0	-64.1	-4.5	46.0	89.7	93.7	113.3	127.0	203.1	241.8		
Net income to the shareholders	30.5	-75.4	-8.6	29.8	55.6	58.3	68.1	82.7	130.0	157.2		
Adj. net income	**30.5**	**-75.4**	**-8.6**	**29.8**	**55.6**	**58.3**	**68.1**	**112.3**	**137.0**	**164.2**	**14.3%**	**20.9%**
EPS (€, adjusted)	**1.18**	**-2.94**	**-0.28**	**0.89**	**1.64**	**1.72**	**1.99**	**3.14**	**3.84**	**4.60**	**9.1%**	**20.9%**
EPS (€, adjusted & diluted)	**1.18**	**-2.94**	**-0.28**	**0.89**	**1.64**	**1.72**	**1.90**	**2.94**	**3.56**	**4.25**	**8.3%**	**20.1%**
DPS (€)	**0.00**	**0.00**	**0.00**	**0.00**	**0.20**	**0.30**	**0.40**	**0.61**	**0.84**	**1.10**	**NM**	**34.6%**

Source: Kuka (for stated figures), SG Cross Asset Research/Equity

SG versus consensus

SG versus consensus 2014-17e

	Stated	SG estimates			Consensus estimates			Deviation		
	2014	2015e	2016e	2017e	2015e	2016e	2017e	2015e	2016e	2017e
New orders	2,229.0	2,946.8	3,181.0	3,411.0				NA	NA	NA
Sales	2,095.7	2,893.5	3,092.5	3,335.0	2,890.0	3,028.0	3,180.0	0%	2%	5%
EBITDA	187.5	254.4	296.1	337.6	239.0	262.0	288.0	6%	13%	17%
EBITA (before PPA)	144.6	187.4	225.9	264.6	149.0	198.0	227.0	26%	14%	17%
EBIT (reported)	144.6	141.8	215.9	254.6				NA	NA	NA
Adj. net income	68.1	112.3	137.0	164.2	83.8	116.0	134.1	34%	18%	22%
EPS (€, adjusted)	1.99	3.14	3.84	4.60	2.7	3.3	3.7	19%	16%	24%
DPS (€)	0.40	0.61	0.84	1.10	0.51	0.77	0.93	19%	10%	18%
Sales growth	18.1%	38.1%	6.9%	7.8%	37.9%	4.8%	5.0%			
EBITDA margin	8.9%	8.8%	9.6%	10.1%	8.3%	8.7%	9.1%			
EBIT margin	6.9%	6.5%	7.3%	7.9%	5.2%	6.5%	7.1%			
Dividend yield	0.5%	0.8%	1.1%	1.4%	0.7%	1.0%	1.2%			

Source: Kuka (for stated figured), Bloomberg, Factset, SG Cross Asset Research/Equity *EPS adjusted but not diluted
* based on a share price of €77.29 as of 10 August 2015

Cash flow snapshot

Capex

Kuka flagged that it would increase capex in 2015, mainly to prevent the exit of assets and the building of new facilities to support its expansion into the general industry as well as the construction of its new development and technology centre in Augsburg, which is expected to be completed in H2 15 and is intended to improve cooperation especially between R&D and other product-related departments currently located at different sites. Excluding financial investments, management expects a free cash flow in the mid- to double-digit million euro range for 2015.

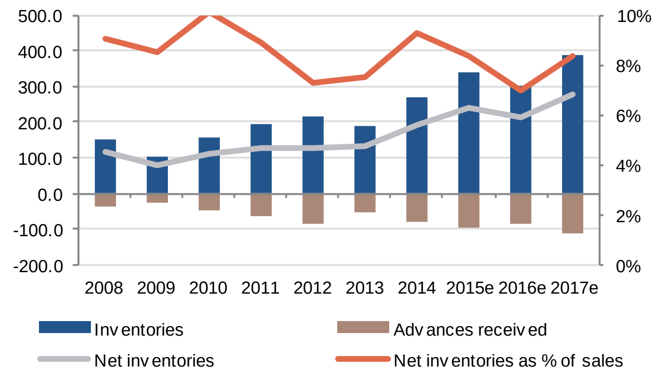
Kuka cash flow highlights, 2008-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e
Total D&A	**26.0**	**23.1**	**22.2**	**26.1**	**28.7**	**38.2**	**43.5**	**67.0**	**70.2**	**73.0**
Cash earnings	69.4	-43.4	23.4	65.9	92.4	115.3	127.3	270.2	210.2	240.2
Change in working capital	-80.7	44.2	-19.4	-6.6	11.9	95.0	4.5	-14.5	72.2	-0.6
Cash flow from operating activities	**-61.2**	**5.1**	**-24.8**	**36.4**	**117.9**	**221.0**	**167.0**	**208.1**	**289.0**	**246.6**
As % of sales	-4.8%	0.6%	-2.3%	2.5%	6.8%	12.5%	8.0%	7.2%	9.3%	7.4%
Capex	-32.5	-27.2	-15.4	-30.3	-42.8	-74.7	-94.3	-95.3	-90.3	-85.3
As % of sales	-2.6%	-3.0%	-1.4%	-2.1%	-2.5%	-4.2%	-4.5%	-3.3%	-2.9%	-2.6%
Cash flow from investing activities	-105.7	-27.0	-12.5	-29.9	-40.8	-125.6	-365.5	-41.8	-90.3	-85.3
Free cash flow	**-166.9**	**-21.9**	**-37.3**	**6.5**	**77.1**	**95.4**	**-198.5**	**166.3**	**198.7**	**161.3**
Dividends	-26.1	0.0	0.0	-0.1	0.0	-6.8	-10.2	-16.9	-21.7	-30.1
Cash flow from financing activities	-18.6	42.0	177.1	-41.8	-1.0	103.8	-114.0	-48.8	-21.7	-30.1
Changes in cash	**-185.6**	**20.1**	**139.8**	**-35.3**	**76.1**	**199.2**	**-312.5**	**117.5**	**177.0**	**131.1**

Source: SG Cross Asset Research/Equity

Thanks to pre-payments and milestone payments, Kuka's project business is a positive cash flow business from the beginning. Although, net inventories are up in absolute terms, we expect them to remain around 8% of revenues.

Kuka inventories and advances received (€m) development



Source: Kuka (for stated figures), SG Cross Asset Research/Equity

Kuka receivables and payables (€m) development

Source: Kuka (for stated figures), SG Cross Asset Research/Equity

Dividend policy

Kuka's dividend policy is to pay out between 25-30% of its net income, provided the business performance is good and general conditions are stable. Following a 20% payout ratio in 2014, we expect it to gradually increase towards 25% by 2017, given the integration of Swisslog weighing on Kuka's earnings short term.

Balance sheet highlights

Kuka's balance sheet is strong with an equity ratio of 26% and gearing (incl. €122m pensions) of 17%, following the Swisslog acquisition that turned Kuka's net cash position into net debt. In April 2015, Kuka has not only increased its syndicated loan by €70m to €230m, of which €90m is a working capital line that can also be used for sureties and guarantees, but also improved its terms significantly. The new loan matures in April 2020 and has two one-year extension options.

Kuka balance sheet highlights, 2008-17e

(€m)	2008	2009	2010	2011	2012	2013	2014	2015e	2016e	2017e
Net intangibles	74.2	79.2	76.5	78.8	82.9	92.5	430.4	429.3	416.4	403.6
-Of which Goodwill	49.6	49.6	49.6	49.6	49.6	59.4	225.9	165.9	155.9	145.9
Net PP&E	93.1	90.3	85.8	87.6	94.9	133.6	233.8	226.9	250.0	265.1
Fixed assets	**167.6**	**170.4**	**163.3**	**166.6**	**178.0**	**226.3**	**670.4**	**663.6**	**673.7**	**676.0**
Total non-current assets	**298.0**	**292.3**	**296.6**	**297.0**	**300.4**	**327.7**	**798.0**	**801.0**	**811.1**	**813.4**
Inventories	151.5	103.8	158.0	195.4	213.4	186.2	272.4	340.4	301.7	390.7
Trade receivables	164.4	114.2	125.7	145.5	141.7	167.5	273.8	361.7	412.3	444.7
Cash & equivalents	41.3	61.2	203.4	168.8	244.3	441.1	192.1	313.1	490.1	621.2
Total current assets	**567.5**	**433.9**	**688.1**	**781.0**	**837.0**	**1,049.4**	**1,181.5**	**1,542.9**	**1,782.1**	**2,078.3**
Total assets	**865.5**	**726.2**	**984.7**	**1,078.0**	**1,137.4**	**1,377.1**	**1,979.5**	**2,343.9**	**2,593.2**	**2,891.7**
Shareholder's equity	212.0	159.4	196.6	250.9	296.1	377.8	524.3	636.9	745.3	872.3
Minority interest	1.5	1.4	1.5	1.5	1.4	1.3	16.8	10.0	10.0	10.0
Total equity	**213.5**	**160.8**	**198.1**	**252.4**	**297.5**	**379.1**	**541.1**	**646.9**	**755.3**	**882.3**
Financial liabilities	61.3	63.8	192.8	194.0	194.9	288.1	137.0	138.9	138.9	138.9
Pensions	68.5	70.0	70.2	70.4	82.0	73.4	121.7	132.6	139.2	146.2
Total non-current liabilities	**156.0**	**168.7**	**294.9**	**297.7**	**316.5**	**400.7**	**342.2**	**345.6**	**352.2**	**359.2**
Financial liabilities	33.6	45.9	70.9	7.4	6.6	6.5	22.5	7.3	7.3	7.3
Trade payables	149.1	73.3	148.6	167.2	136.2	171.7	274.6	360.5	417.3	450.1
Total current liabilities	**495.9**	**396.7**	**491.7**	**527.9**	**523.4**	**597.3**	**1,096.2**	**1,351.3**	**1,485.7**	**1,650.2**
Total Liabilities	**865.5**	**726.2**	**984.7**	**1,078.0**	**1,137.4**	**1,377.1**	**1,979.5**	**2,343.9**	**2,593.2**	**2,891.7**

Source: SG Cross Asset Research/Equity

Addendum

Company background and history

The name Kuka is derived from the first letters of each word of the company's initial name "Keller und Knappich Augsburg". The company was founded in 1898 as an acetylene factory for domestic and municipal lighting but turned quickly into the welding business and developed the first electric spot-welding gun in Germany. In the 1970s Kuka built the first European welding transfer line with robots and developed the industrial robot with six axes. In 1979, Kuka was merged with Industrie-Werke Karlsruhe AG to become IWKA AG, which was formed into a public corporation with 100% free float in 1980, following the exit of the Quandt family.

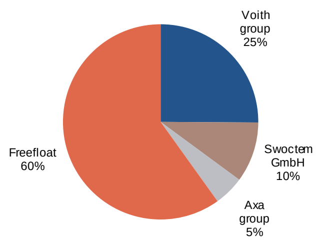
In 2004, IWKA refocused the group on automation technology with its core activities in robots and systems that lead to a divestment of its packaging activities until early 2007, partly forced by its active shareholder at the time, Guy Wyser-Pratte. Kuka was later renamed Kuka, with its headquarters relocated to Augsburg. In 2014, Kuka acquired Swisslog, an automation company for hospitals and the warehouse and logistics industry.

Shares and shareholder structure

Shares and shareholder structure

Kuka's signed in capital amounts to €92,841,619, divided into 35,708,315 shares without a nominal value, representing €2.60 per share. Kuka shares trades on the all-German stock exchanged and on Xetra.

Kuka shareholder structure



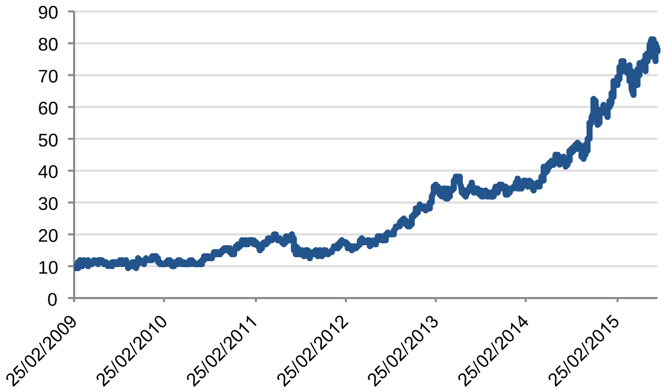
Source: Kuka, SG Cross Asset Research/Equity

On 3 December 2014, Voith acquired a 25.1% stake in Kuka, taking over the entire stake from its previous major shareholder Grenzebach, a privately held German small- and medium-sized engineering company that first invested in Kuka in December 2008 with a 5.43% stake, which was raised to 19% on 9 March 2009 and to 29.2% thereafter. Grenzebach acted as an anchor shareholder after the financial crisis. On 29 April 2009 Grenzebach appointed the current CEO, Till Reuter, to Kuka's supervisory board. Later, on 21 September 2009, he was elected by the supervisory board as Chairman. On 29 September, the supervisory board named him CEO of Kuka for up to one year before he became permanent CEO. Mr Reuter received the full support of Grenzebach in Kuka's restructuring after Lehman.

According to Voith, its stake in Kuka represents a strategic investment as it expects computerisation and automation to fundamentally change industrial production processes in the years ahead. Voith views robots as key to tomorrow's digitised industry and thus part of the Industry 4.0 megatrend. Voith supports Kuka's proven strategy and has confidence in the people who have played a major role in its exceptionally successful development in past years. With its 25.1% stake in Kuka, Voith's goal as a family business is to be a stable anchor shareholder with a long-term focus. Voith has committed to supporting Kuka and its workforce in a spirit of partnership.

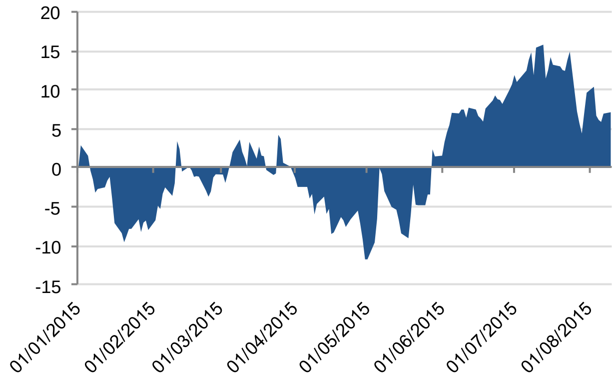
The shift in Kuka's shareholder structure has clearly reduced the share overhang risk of the past few years, keeping in mind that Grenzebach was well in the money with its stake. In our view, this has fuelled the share price further, similar to this year's Hanover trade fair, at which management cited Kuka's ability to ride on the wave of Industry 4.0 and which triggered the shares outperformance vs the German MDAX after a bumpy start to the year.

Historical share price performance since trough in 2009



Source: Datastream, SG Cross Asset Research/Equity

Relative share price performance vs MDAX YTD



Source: Datastream, SG Cross Asset Research/Equity

Management

CEO Dr Till Reuter joined Kuka in 2009, initially as member of the supervisory board and then as interim CEO for up to one year, before he was named permanent CEO. Before that, he worked as an investment banker at Morgan Stanley, Deutsche Bank and Lehman Brothers. With his investment vehicle Rinvest AG, he is also invested in Kuka. His contract lasts until 2020.

CFO Peter Mohnen joined Kuka in 2012 and is responsible for finance and controlling there. Before that, he held various managerial positions at E.ON and served as the CFO of its Hungarian activities. His contract lasts until 2020.

Supervisory board

Kuka's supervisory board consists of 12 members with Bernd Minning, president and CEO of Grenzebach, Chairman of the supervisory board. Following the change in shareholder structure, the president and CEO of Voith GmbH, Dr Hubert Lienhard, took a seat on the supervisory board, as did Friedhelm Loh, owner and CEO of Friedhelm Loh Group, invested in Kuka via his investment vehicle Swoctem.

Risks

Macro

The main risk to our positive view on Kuka with regard to growth and further margin improvement is a slowing or even deterioration of the global economy, which could spill over to the global car and general industry. This could in turn result in lower revenues and earnings. We regard the Swisslog business as more resilient, given its high exposure to structurally growing markets such as the health care industry.

Competition and pricing

Kuka operates in markets that are highly competitive. While markets such automotive are fairly consolidated, new market entrants in robotics could emerge in China, where the Government has set-up an incentive plan to grow three to five global players. If such players emerged quicker than expected, this could have a severe impact on Kuka's revenues and earnings.

Project execution

Aside from the overall macro risk, project execution is the single largest risk at Kuka, given that c.50% of its annual sales are generated by long-lasting projects. Such projects bear project related risks, such as delays, cost overruns, technical issues, matters of a political nature or strikes and can have a significant negative impact on Kuka's revenues and earnings. Although Kuka has lots of experience in project execution and mitigating risk, the margin of error in projects is close to zero.

New technologies and products

Although the overall penetration of industrial robots is still low in many industries and robots have just started to "cross the chasm", we think there is always the risk that new disruptive technologies such as 3D printing may revolutionise industrial production and change the face of production.

Commodities / resources

Since 2009, Kuka has centralised its purchasing for the group at its purchasing department, owing to the bad experience Kuka had in 2007 and 2008 when strong demand for raw materials, commodities and components at its heavily utilised suppliers resulted in price escalation and some delays. Having pooled all of its entire sourcing at one place, Kuka can not only better allocate resources, but has also gained purchasing power against its suppliers. As part of its international sourcing strategy, Kuka has signed agreements with suppliers in Eastern Europe, India and China, and these will be used extensively.

Politics

As some of Kuka's customers operate in emerging markets, Kuka also faces political risks that could have a negative impact on the project execution or could result in extraordinary costs, postponements or even cancellations.

Currencies

In the case of systems, a higher US dollar/euro exchange rate has a positive impact on business figures, because the North American sales market is the largest for this business segment. For robotics, the yen/euro exchange rate trend is particularly important. A weaker yen/euro exchange rate has a negative effect for robotics because the main competitors come, above all, from Japan. For Swisslog, the appreciation of the Swiss franc will have a slightly adverse effect overall, because the cost share of the division in Switzerland is slightly higher than the revenue share. However, here too, Kuka profits from a stronger US dollar/euro exchange rate because the Swisslog division generates many US dollar-based revenues. In the table below we provide the sensitivity to a 10% change in the euro to other relevant currencies for Kuka and Swisslog.

Kuka and Swisslog currency sensitivity, 2013 and 2014

	KUKA		Swisslog	
	2014	2013		2014
EUR/USD +10%	3.8	2.0	CHF/CNY +5%	-0.8
EUR/USD -10%	-4.6	-3.0	CHF/CNY -5%	0.7
EUR/JPY +10%	-2.0	-2.5	CHF/EUR +5%	-0.8
EUR/JPY -10%	2.5	2.5	CHF/EUR -5%	0.7
EUR/CNY +10%	4.0	0.3	CHF/SEK +5%	-0.1
EUR/CNY -10%	-0.5	-0.5	CHF/SEK -5%	0.1
EUR/HUF +10%	-0.5	-0.1	CHF/SGD +5%	-0.6
EUR/HUF -10%	0.6	0.7	CHF/SGD -5%	0.5
EUR/BRL +10%	-0.1	-0.1	CHF/USD +5%	-2.1
EUR/BRL -10%	0.1	0.1	CHF/USD -5%	1.7

Source: SG Cross Asset Research/Equity

Interest rates

A 100bp increase in market interest rates at December 31 2014 would have a positive effect on results of €1.7m (2013: +€4.3m). A 100bp decrease in market interest rates would have a negative effect on results of -€0.1m (2013: -€1.0m). This hypothetical effect results solely from the financial investments (borrowings) with variable interest rates totalling €191.2m in 2014 and €434.9m in 2013.

Impairment risk

Kuka always faces the risk of complete or partial goodwill impairments resulting from acquisitions, which could also negatively influence the group's earnings if the targeted financial goals for these companies cannot be reached. Also newly developed products might not reach the set goals or gain market access, which could result in impairments. However, Kuka typically shares risky developments of potentially non-marketable products and systems with partners, such as the German Aerospace Centre (DLR) or the Fraunhofer Institute. In addition, there is always some risk that partial or full impairment will have to be made for some accounts receivable.

Counterparties

Typically, Kuka secures bank guarantees and export insurance for the majority of orders. However, the risk of payment failure by customers remains. There is no guarantee that there will not be any individual payment failure that could have a substantial negative impact on the group's earnings.

In 2014, Kuka generated c.25% of its revenues with its two largest customers, each of them accounting for more than 10% of sales. In 2008, Kuka felt the impact of the financial crisis, when one of its US customers, Getrag Transmission Manufacturing LLC, filed for bankruptcy protection under Chapter 11, which resulted in an EBIT loss of €20.8m in 2008, based on a €23m order that was placed and executed before. In our view, Kuka should have learned its lessons from the past and should have improved its pre-payment and payment terms. However, such improvements can be tough to get accepted by its automotive customers, given the oligopolistic market structure in automotive with ongoing price-pressure.

Regulations

We think the risk arising from regulation is low for Kuka, if not even supportive, given its products improve the efficiency of industrial production. For the automotive industry, not only increasingly tighter emission rules are driving new car developments and shortening life cycle, but the entire car production process is being reviewed to reduce the carbon footprint. Currently the Green Carbody Technologies project, supported by the Federal Ministry of Education and Research, involves 60 companies tasked with developing improved and more efficient ways to produce cars, especially in view of Industry 4.0, where the importance of the efficient energy and resource usage in manufacturing is key. The central focus is on body-in-white production, where 24% of overall energy in car production continues to be spent. However, if environmental regulations impact Kuka's customers in a way that forces them to stop doing business, this could become a major risk for Kuka and its earnings.

APPENDIX

COMPANIES MENTIONED
ABB (ABBN.VX, Sell)
ARM Holdings (ARM.L, No Reco)
Baker Hughes Incorporated (BHI.N, Buy)
BMW (BMWG.DE, Buy)
Boeing (BA.N, Hold)
Brown-Forman (BFb.N, Hold)
Daimler (DAIGn.DE, Buy)
Deutsche Bank AG (DBKGn.DE, Sell)
E.ON (EONGn.DE, Buy)
Emerson Electric (EMR.N, Buy)
European Capital (nocode102, No Reco)
FCA (FCHA.MI, Hold)
Ford Motor Co (F.N, No Reco)
General Motors (GM.N, No Reco)
Honda (7267.T, No Reco)
Hyundai Motor Co (005380.KS, No Reco)
Kion Group (KGX.DE, Hold)
Kroger (KR.N, No Reco)
Kuka AG (KU2G.DE, Buy)
LISI (GFII.PA, Buy)
Morgan Stanley (MS.N, Hold)
Nissan Motor Co (7201.T, No Reco)
Porsche (PSHG_p.DE, Buy)
SAP (SAPG.DE, Buy)
Sunrise (SUN_SG, No Reco)
ThyssenKrupp (TKAG.DE, Buy)
Toyota Motor Corp (7203.T, No Reco)
Vallourec (VLLP.PA, Sell)
Volkswagen (Pref.) (VOWG_p.DE, Buy)
Volvo (VOLVb.ST, Buy)

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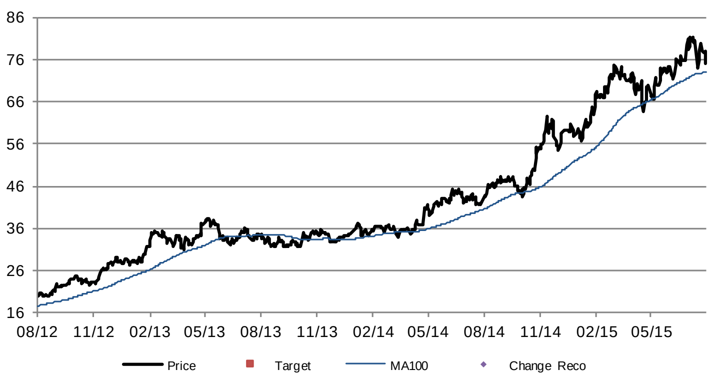
Historical Price: Kuka AG (KU2G.DE)



Source: SG Cross Asset Research/Equity

SG EQUITY RESEARCH RATINGS on a 12 months period

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HOLD: absolute total shareholder return forecast between 0% and +15% over a 12 month period.

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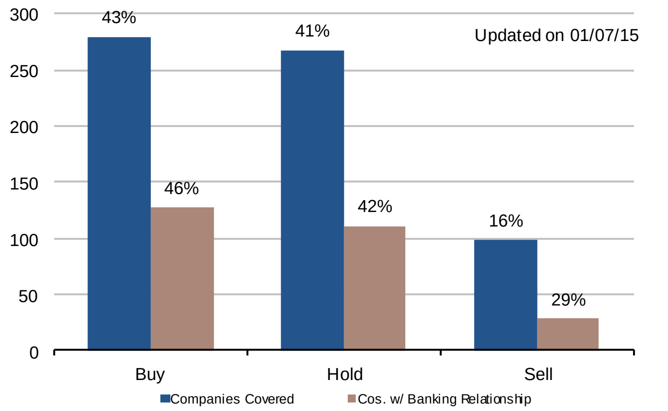
The Preferred and Least preferred stocks are selected by the covering analyst based on the individual analyst's coverage universe and not by the SG Equity Research Strategist.

Equity rating and dispersion relationship



Source: SG Cross Asset Research/Equity

All pricing information included in this report is as of market close, unless otherwise stated.

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Boeing	SG acted as co-manager in Boeing's bond issue (USD)
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Deutsche Bank AG	SG acted as co-lead manager on Deutsche Bank's bond issue (1.25% 08/09/2021 EUR).
FCA	SG acted as joint bookrunner in FIAT's Tap bond issue (TAP of the XS1088515207 bond).
FCA	SG makes a market in Fiat warrants
FCA	SG acted as co-manager in Fiat Chrysler Automobiles' bond issue (Senior, USD, 5NCL, 8NCL).
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Ford Motor Co	SG acted as co-manager in Ford Motor Co's bond issue
General Motors	SG acted as a co-manager in General Motors' bond issue.
General Motors	SG acted as co-manager in General Motors' bond issue
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Morgan Stanley	SG is acting as a co-manager in Morgan Stanley's bond issue (10yr)
Morgan Stanley	SG acted as co-manager in Morgan Stanley's bond issue (5yr,30yr)
Morgan Stanley	SG acted as a co-manager in Morgan Stanley's bond issue (USD, 1.875% 05/01/2018).
Morgan Stanley	SG acted as co-manager on Morgan Stanley's bond issue.
Nissan Motor Co	SG acted as joint bookrunner in Nissan Motor Acceptance Corp's bond issue
SAP	SG acted as passive bookrunner in SAP's bonds issues (EUR, 2,5,10yr).
SAP	SG acted as a bookrunner in SAP's bond issue
Toyota Motor Corp	SG acted as co-manager in Toyota Corp's bond issue
Toyota Motor Corp	SG acted as joint bookrunner in Toyota Motor Credit Corporation's bond issue (Dual Tranche Euro 3.5yr FRN and 7.5yr FXD).
Toyota Motor Corp	SG acted as co-manager on Toyota Motor Credit Corp's Bond Issue (7yr).
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Volkswagen (Pref.)	SG acted as joint bookrunner in Volkswagen's bond issue (triple tranche bond: 3.5y, 8y, 15y).

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