

12M rating **BUY (Initiate)**

12M TP **W38,000**

Up/downside **+42%**

Value	Growth	Turn around	Issue
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Stock Data

KOSPI (Oct 26, pt)	2,014
Stock price (Oct 26, KRW)	25,600
Market cap (USD mn)	412
Shares outstanding (mn)	18
52-Week high/low (KRW)	29,100/12,700
6M avg. daily turnover (USD mn)	2.5
Free float / Foreign ownership (%)	47.1/3.4
Major shareholders (%)	
Taewoong Holdings and 5 others	52.9
Shinyoung Asset Mgmt and 1 other	5.2

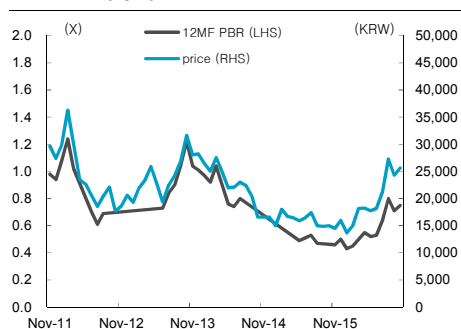
EPS revision (KIS estimates, KRW)

	Previous	Revised	(%)
2016F		725	-
2017F		1,666	-
2018F		3,132	-

Performance

	1M	6M	12M
Absolute (%)	1.0	42.2	60.5
Relative to KOSPI (%p)	2.6	42.5	62.2

12MF PB trend



Source: WISEfn consensus

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Splendid transformation

Recommend BUY with TP W38,000

We initiate coverage of Taewoong with BUY and a TP of W38,000 (1.2x 2011-2015 low-cycle avg. PB). We are bullish on the start of the steelmaking business and the brisk growth of the wind power market. With steelmaking beginning in 4Q16, Taewoong's top line would grow along with better profitability at the forging business on synergies with the new venture. And backed by the offshore wind power market's fast growth, upward earnings momentum should continue through 2020. With the ramp-up of steelmaking from 2017, OP and NP should deliver respective CAGR of 48.7% and 50.9% through 2020.

Forging unit gets a flashy makeover thanks to steelmaking

Taewoong added steelmaking capacity for internal raw materials procurement and to sell the materials externally. Taewoong plans to use the steelmaking unit to secure its raw materials needed for forging, and this would drive down the COGS-to-sales and profitability would improve. The reason is Taewoong can trim costs for raw materials, heating, electricity and logistics. And by selling the materials to other buyers, the company can lighten the fixed-cost burden stemming from massive investment and generate additional gains. While greater demand for forging would increase in-house raw materials output, a rise in steelmaking utilization would lead to bigger profits.

Offshore wind power a core driver for long-term growth

The global wind power market should continue to grow more than 10% through 2020. Specifically, although the offshore segment still makes up a marginal portion, going forward it should deliver big growth backed by 1) energy efficiency, 2) massive power generation and 3) locational merits. Offshore wind power generators require large forged products using specialty steel that is water corrosion resistant. Accordingly, Taewoong, a manufacturer of large forged products, should maximize benefits from a burgeoning offshore wind power market via its steelmaking business.

	2014A	2015A	2016F	2017F	2018F
Sales (W bn)	412	365	388	663	890
OP (W bn)	8	6	13	45	83
EBT (W bn)	9	10	15	46	87
NP (W bn)	7	8	12	36	67
EBITDA (W bn)	20	18	33	77	115
Net debt (W bn)	(119)	(34)	61	(18)	(159)
OP margin (%)	2.0	1.7	3.4	6.8	9.3
ROE (%)	1.3	1.3	1.9	5.3	9.3
Dividend yield (%)	-	-	-	-	-
EPS (KRW)	385	429	644	1,681	3,158
chg. (% YoY)	11.9	11.4	50.1	161.2	87.9
BPS (KRW)	31,651	32,038	30,832	32,477	35,599
DPS (KRW)	0	0	0	0	0
PE (x)	43.1	37.3	36.3	15.8	8.4
PB (x)	0.5	0.5	0.9	0.8	0.7
EV/EBITDA (x)	9.2	14.3	16.4	6.0	2.8

Company report focus

What is the report about?

- Seek investment ideas by examining Taewoong's structural growth potential backed by the commencement of steelmaking operations and the wind power market's growth
- Break down the effects of steelmaking vertical integration by presenting specific figures
- Examine the sales potential of materials from its steel mills

Key assumptions and valuation

- Earnings should grow on the start of steelmaking and the growth of the wind power market
- Higher steelmaking utilization would push up OP growth
- TP equals 1.2x low-cycle avg. PB

Earnings outlook

(W bn, %)

	2015	2016F	2017F	2018F	2019F	2020F
Sales	365	388	663	890	1,041	1,187
OP	6	13	45	83	115	149
NP	8	12	35	66	92	121
Steelmaking utilization	NA	NA	67%	78%	85%	85%

Source: Korea Investment & Securities

Sensitivity & scenario analysis

- Among earnings swing factors, the impact would be greater in the order of the KRW/USD, forging utilization and steelmaking utilization
- For every 1% rise in the KRW/USD, forging utilization and steelmaking utilization, 2017F EPS would rise 3.6%, 2.7% and 0.8%, respectively

Earnings sensitivity

(W bn, %)

		Assumptions				1% rise		
		Variable	Sales	OP	NP	Sales	OP	NP
KRW/USD	2017F	1,194	663	45	35	0.7%	4.2%	3.6%
	2018F	1,194	890	83	66	0.7%	3.0%	2.5%
Forging (%)	2017F	72	663	45	35	1.4%	2.7%	2.7%
	2018F	77	890	83	66	1.3%	2.2%	2.2%
Steelmaking (%)	2017F	67	663	45	35	1.1%	0.8%	0.8%
	2018F	78	890	83	66	1.0%	0.5%	0.5%

Source: Korea Investment & Securities

Risks/opportunities

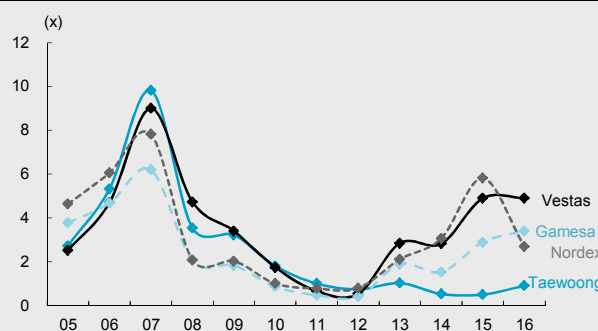
- Given the warrants issued in conjunction with bonds in December 2011 are set to expire on December 22, 2016, all warrants will likely be exercised through the date, resulting in a share overhang
- Positives include greater top line and better bottom line in line with steelmaking vertical integration and the growth of the offshore wind power business

Company highlights

1) Historical valuation

- Forging companies entered a downcycle from 2009 but turned to an upcycle from 1H16

Global wind turbine manufacturers and Taewoong: 10-year trailing PB



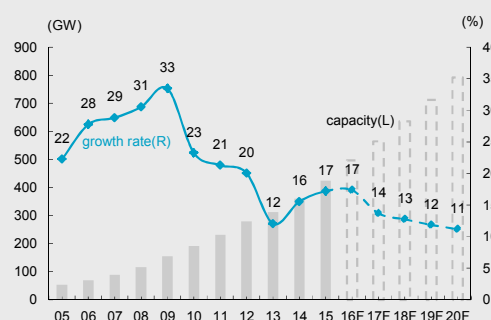
Note: 2016F adj. PB for Nordex due to its acquisition of Acciona's wind energy division in 2015

Source: Bloomberg, Korea Investment & Securities

2) Taewoong's key growth driver: Steadily growing wind power generation

- Wind power market to grow ~10% through 2020
- Steelmaking business to help maximize benefits from the expanding offshore wind power market

Global wind power generation capacity and growth



Source: BNEF, GWEC, Korea Investment & Securities

Peer comparison

- Based on 2016F earnings, Taewoong trades at 36.3x PE and 0.9x PB with 2.1% ROE; Although its valuation is not attractive, shares appear undervalued compared to global peers given the 2017-2020 EPS growth potential backed by a higher steelmaking utilization and the growing forging business
- See the global peer valuation table on page 4

Contents

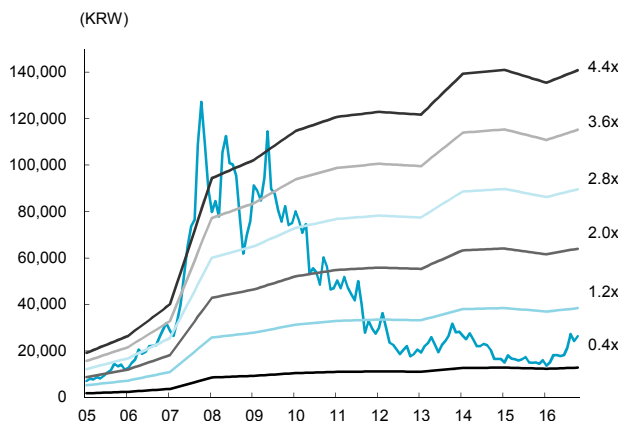
I. Investment ideas and valuation	2
II. Excellent timing for steelmaking investment	4
1. A god-like move in terms of timing: Fewer costs than normal	
2. Hiring at an opportune moment: Skilled workers	
III. Steelmaking vertical integration impact	6
1. Less raw material costs	
2. Less heating costs	
3. Less logistics costs	
4. Comprehensive analysis of steelmaking business effect	
IV. Likely seamless external sale of raw material steel	11
1. Forging ingots in short supply	
2. Even rival forging firms to buy Taewoong's round bloom	
3. Outlook for external sale of raw material steel	
V. Upcycle started for forging industry	14
1. Downcycle survived	
2. Upcycle driven by restructuring and turnaround of material prices	
3. Potential beneficiaries are carbon steel forging firms with scale and specialty steel forging firms	
VI. Wind power market to fuel forging demand	17
1. Ongoing rise of wind power	
2. Offshore wind power on a steep climb though still marginal	
3. Taewoong's future lies in offshore wind power	
VII. Earnings to deliver explosive growth for next four years	20
VIII. Earnings sensitivity analysis	24
IX. Risk factors	24
Company overview & Glossary	25

I. Investment ideas and valuation

**Initiate coverage with
TP W38,000 that equals
1.2x PB**

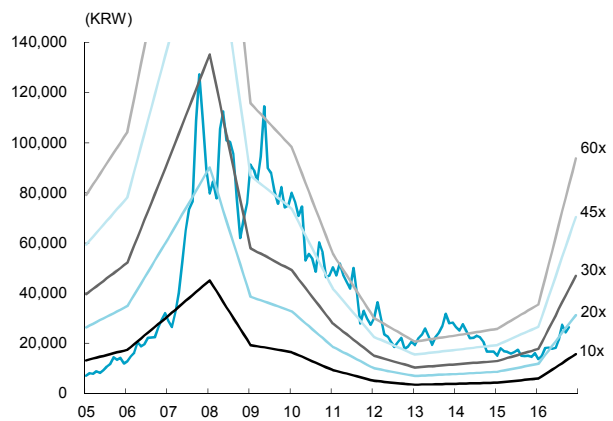
We initiate coverage of Taewoong with BUY and a TP of W38,000 by applying a target 1.2x PB (2011-2015 low-cycle avg.) to the 12MF BPS of W31,997. Our investment points are as follows. 1) With the steelmaking business firing up in 4Q16, Taewoong's top line would grow. 2) Synergies with the new venture would bolster profitability at the forging business. 3) Backed by the wind power market's growth, offshore in particular, sales and profit would deliver exponential growth through 2020.

Figure 1. PB band



Source: Korea Investment & Securities

Figure 2. PE band

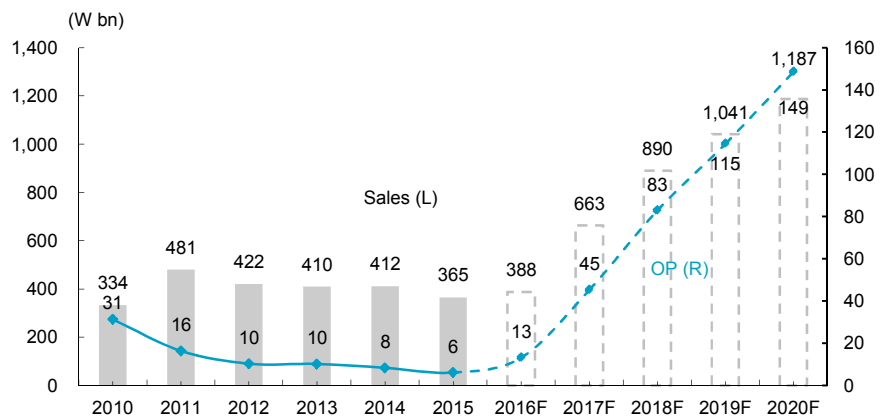


Source: Korea Investment & Securities

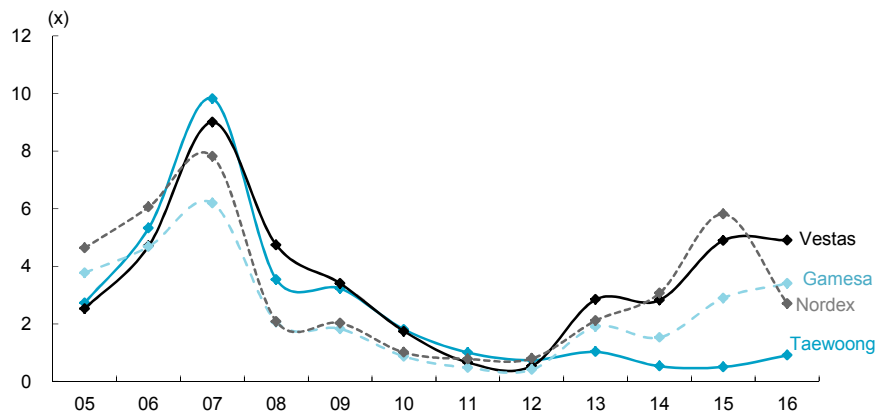
**Greater steelmaking
utilization to bolster
earnings in 2017**

Based on 2016F earnings, shares trade at 36.3x PE and 0.9x PB with 2.1% ROE. The valuation is not attractive as hopes for better earnings in line with steelmaking operations have been factored into the share price in advance. We believe steelmaking will bring dramatic changes to the company's fundamentals and the effect would steadily expand. The shares must not be deemed expensive by looking at 2016 earnings alone. With rising utilization at the steelmaking business, the 2017 earnings should substantially improve. We peg 2017F sales to reach W663.1bn (+70.8% YoY) and OP W45.2bn (+244.6% YoY). The brisk earnings growth should continue through 2020 backed by greater utilization at the steelmaking business and the forging division's growth.

Figure 3. 2010-2020 sales and OP outlook



Source: Korea Investment & Securities

Figure 4. Global wind turbine manufacturers and Taewoong: 10-year trailing PB

Note: 2016F adj. PB for Nordex (Germany) due to its acquisition of Acciona's (Spain) wind energy division in 2015
Source: Bloomberg, Korea Investment & Securities

Table 1. Global peer valuation

(USD mn, %, x)

Company		Taewoong	Dongkuk S&C	CS Wind	Vestas	Gamesa	Nordex	Goldwind	Inox Wind
Market cap	2016-10-26	412	424	375	17,482	6,478	2,483	6,024	726
Current price	2016-10-26	25,600	8,420	24,600	538	21	23	16	219
Sales	2015	323.0	186.8	262.7	9,349.6	3,889.2	2,697.4	4,750.1	673.8
	2016F	325.3	350.5	309.1	10,624.2	4,812.3	3,795.1	4,605.9	759.1
	2017F	555.6	365.6	398.5	10,646.2	6,768.4	4,179.1	5,012.4	783.8
EBITDA	2015	15.5	20.0	44.0	1,396.4	464.9	193.1	628.0	105.8
	2016F	27.3	37.2	24.6	1,800.1	719.6	318.5	708.3	116.7
	2017F	64.8	40.5	57.4	1,719.1	721.8	404.0	827.4	119.8
OP	2015	5.4	16.9	32.2	1,005.7	358.2	122.9	541.3	100.7
	2016F	11.0	31.4	14.6	1,333.2	469.8	207.6	573.0	88.7
	2017F	37.9	32.8	42.9	1,349.6	507.5	265.6	669.9	91.5
NP	2015	6.9	21.0	18.9	760.4	188.9	58.0	453.5	69.1
	2016F	11.0	24.2	10.0	981.1	300.6	128.6	487.4	73.6
	2017F	29.8	25.9	32.8	983.8	433.2	171.8	552.1	76.6
ROE (%)	2015	1.3	12.7	7.0	29.7	13.7	10.0	18.6	27.9
	2016F	2.1	10.0	10.4	26.0	15.4	16.8	17.7	20.4
	2017F	5.2	9.3	13.2	24.4	14.5	17.7	16.6	20.1
Valuation	PBR(x)	0.9	1.7	1.3	4.8	3.4	2.6	2.3	2.1
	PER(x)	36.9	17.9	38.7	17.9	21.5	18.8	13.0	9.8
	EV/EBITDA(x)	16.8	11.8	13.6	71.0	8.4	8.0	10.8	7.4

Note: 1) Current price in local currencies; Earnings and valuation indicators in USD

2) Valuation indicators as of 2016

Source: Bloomberg, Korea Investment & Securities

II. Excellent timing for steelmaking investment

1. A god-like move in terms of timing: Fewer costs than normal

Taewoong's steelmaking capex was W320bn at W267,000 per tonne; Cheaper than an ordinary EAF mill

Since 2013, Taewoong has invested W450bn to run the steelmaking business and is now set to complete the construction of a 120-tonne capacity electric-arc furnace (EAF) in November 2016. From the total amount, facility investment is estimated at W320bn. Given the annual steel production capacity of 1.2mn tonnes for an ordinary 120-tonne EAF (based on carbon steel), the per-tonne capex comes in at W267,000. This seems relatively cheap considering the per-tonne capex requirement of USD300 (W330,000) for an ordinary EAF. Compared to Taewoong, Dongbu Steel spent total capex of W864bn (W346,000 per tonne) to build two EAFs capable of producing 2.5mn tonnes of hot-rolled steel sheets. The mega-project worth W1,050bn proceeded during 2007-2009. The difference was a hot-roll mill was included in Dongbu Steel's investment, which was possible at a lesser cost per tonne thanks to the existence of basic facilities.

Table 2. Per-tonne capex for EAF mill: Dongbu Steel vs. Taewoong

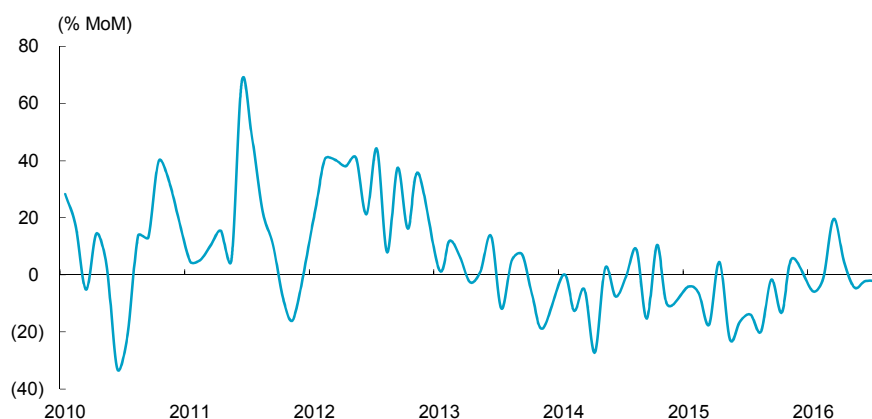
		Dongbu Steel	Taewoong
Investment period		2007-2009	2013-2016
Facilities	EAF	Two EAF (160-tonnes each)	One EAF (120-tonnes)
	Continuous casting	Slab	Ingot, bloom
	Rolling	Hot-roll	
Capacity ('000 tonnes; Translated to carbon steel)		2,500	1,200
Total capex (W bn)		864	320
Per-tonne capex (W '000)		346	267

Source: Korea Investment & Securities

Investment during the steel industry's downcycle led to cost savings

It appears Taewoong spent less capex as the investment was made after the steel industry's entry to the downcycle. At the time, the supply glut of steel products slowed facility investment and resulted in reduced facility costs. Of note, fixed assets investment growth in China, the biggest customer for steel mill builders, turned to contraction since 2H13.

Figure 5. Steel fixed assets investment growth in China



Source: CEIC, Korea Investment & Securities

**Additional depreciation
accompanied by the
start of steelmaking a
mere W16.3bn p.a.**

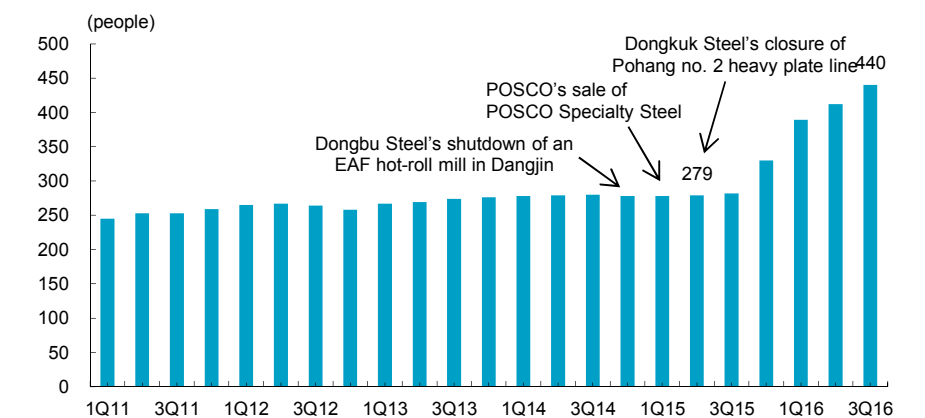
With less investment, the depreciation burden for the initial phase of the steelmaking business would not be heavy. For machinery and equipment, Taewoong employs straight-line depreciation over 10-20 years. Taking into account the W320bn investment, the remaining value of W80bn and useful life of 20 years, we estimate depreciation for the company's steelmaking machinery and equipment at W12bn p.a. Meanwhile, annual depreciation for buildings would amount to W4.3bn (W130bn/30yrs using the same method). Overall, we estimate additional depreciation from the steelmaking business at W16.3bn p.a. with a low depreciation rate of 3.6%.

2. Hiring at an opportune moment: Skilled workers

**Inflow of experienced
workers facilitated by
industry restructuring**

Taewoong's employees ballooned from 279 at end-2Q15 to 440 at end-3Q16 on the steady hiring spree for the steelmaking business. As it is a new venture for Taewoong, the company lacks in-house technology expertise, which fueled concern about the business. However, Taewoong was able to secure skilled workers without much difficulty who are essential for core processes such as running the EAF, specialty steelmaking and continuous casting. Skilled workers migrated from major steelmakers following their restructuring moves such as 1) Dongbu Steel's shutdown of an EAF hot-roll mill in Dangjin in November 2014, 2) POSCO's sale of POSCO Specialty Steel (renamed SeAH CSS) to SeAH Group in March 2015 and 3) Dongkuk Steel's closure of Pohang no. 2 heavy plate line in August 2015.

Figure 6. Hiring spree at Taewoong



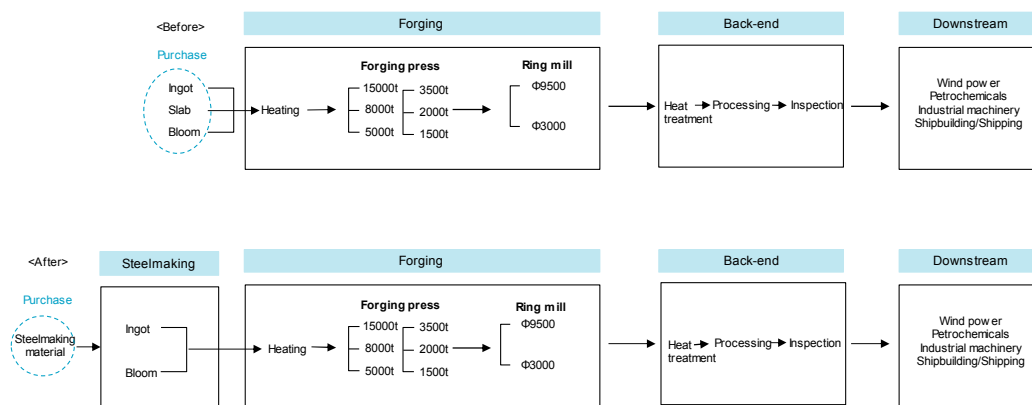
Source: Korea Investment & Securities

III. Steelmaking vertical integration impact

In-house procurement of necessary raw materials for forging through steelmaking

Taewoong uses ingots, slabs and blooms as raw materials for forging and has purchased these items from steelmakers. With the addition of the steelmaking business, the company is now positioned to procure the necessary materials in-house, which would bring several changes. To analyze the potential major effects, we assume that Taewoong began steelmaking in 2015 and procured raw materials for forging 100% in-house from the year.

Figure 7. Processes with the presence and absence of steelmaking business



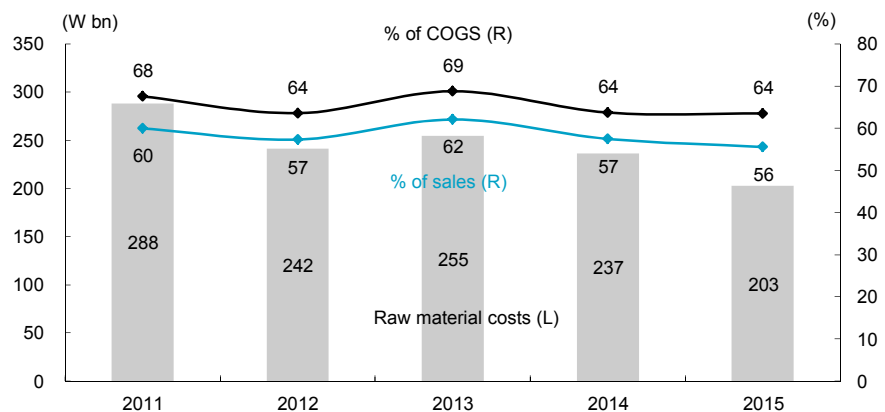
Source: Korea Investment & Securities

1. Less raw material costs

Reduction in raw material procurement costs a profit swing factor

Taewoong's raw material costs in 2015 were W203bn that accounted for 56% of sales and 64% of COGS. This shows raw material procurement cost is the most crucial factor for Taewoong's profits. Reducing the cost was the very reason for its foray into the steelmaking business despite the burden of massive investment. Major effects are described in the following section.

Figure 8. Weighting of raw material costs in sales and COGS



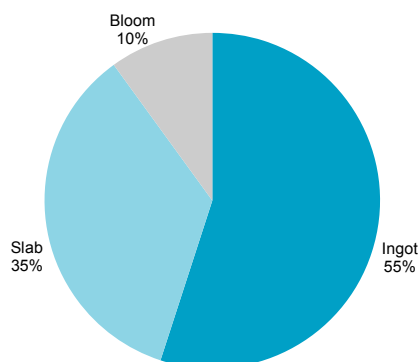
Source: Korea Investment & Securities

1) Yield improvement

With in-house steelmaking, major raw materials input would comprise 46% ingots and 54% round blooms

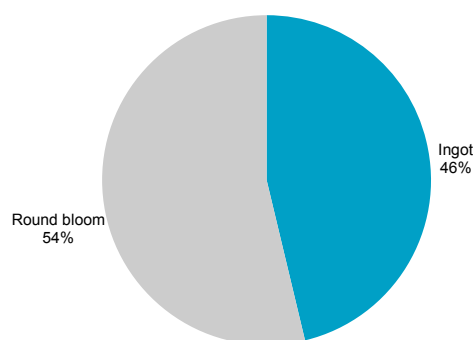
Taewoong purchases three types of raw materials (ingots, slabs and blooms) used for forging. But with steelmaking done in-house, ingots optimized for forging would be used while round blooms would take the place of some current ingots, slabs and blooms. Before the steelmaking capacity was added, ingots comprised 55% of the raw materials input, slabs 35% and blooms 10%. But after the addition, ingots would amount to 46% and round blooms 54%.

Figure 9. % of previous raw materials input



Source: Korea Investment & Securities

Figure 10. % of future raw materials input



Source: Korea Investment & Securities

Existing ingots, slabs and blooms replaced by round blooms

The most crucial change is that some current ingots, slabs and blooms would be completely replaced by round blooms. Taewoong's forged products are mostly circular. But ingots have a cylindrical shape (similar to a bell pepper) while slabs and blooms (except round) are rectangular. Until now, Taewoong had to first process raw materials into a round shape using a press to make circular forged products. Slabs and blooms are intermediate products for steel and they are processed to make a wide range of products such as heavy plates, hot-rolled coil, section steel and steel bars. Of note, steelmakers are in the business of supplying the aforementioned end-products, not intermediate products. And there is no need for steelmakers to focus on circular intermediate products for the sake of the forging companies' forged products (while there are some steelmakers that supply round blooms, it is hard to find companies like Taewoong that make round blooms used for large-scale forging). So until now, a process was needed to turn raw materials into a round shape and this created another cost. In addition, any change in steel properties weighed on production yields.

Figure 11. Raw material shapes

<Ingot>



<Slab>



<Bloom>



<Round bloom>



Source: Korea Investment & Securities

Figure 12. Press used to turn raw materials into a round shape



Source: Korea Investment & Securities

If round blooms are made via in-house steelmaking, better yields would reduce raw material costs

One of the reasons Taewoong decided to start its steelmaking business is to produce large round blooms that steelmakers cannot supply. By replacing ingots, slabs and blooms with round blooms, Taewoong can increase yields. If Taewoong uses 100% in-house raw materials, yields would improve and raw materials input would shrink 5.4% (see table 3 below). In particular, yield improvement is most pronounced when ingots are replaced with round blooms. In 2015, Taewoong's raw material costs reached W203bn. If the company had procured raw materials internally rather than externally, it would have saved W11bn (W203bn*5.4%) thanks to better yields.

Table 3. Raw materials input by procurement method

(tonnes)

Raw material	External			Raw material	Internal			Savings (1-E/A)
	Input (A)	Yield (B)	Output (C)		Output (C)	Yield (D)	Input (E=C/D)	
Ingot	45	70%	31.5	Ingot	31.5	72%	43.8	2.8%
Ingot	10	70%	7.0	Round bloom	7.0	92%	7.6	23.9%
Slab	35	88%	30.8	Round bloom	30.8	92%	33.5	4.3%
Bloom	10	90%	9.0	Round bloom	9.0	92%	9.8	2.2%
Total	100	78.3%	78.3	Total	78.3	82.8%	94.6	5.4%

Source: Korea Investment & Securities

2) Less purchase costs

Trim purchase costs by internalizing steelmaking margins

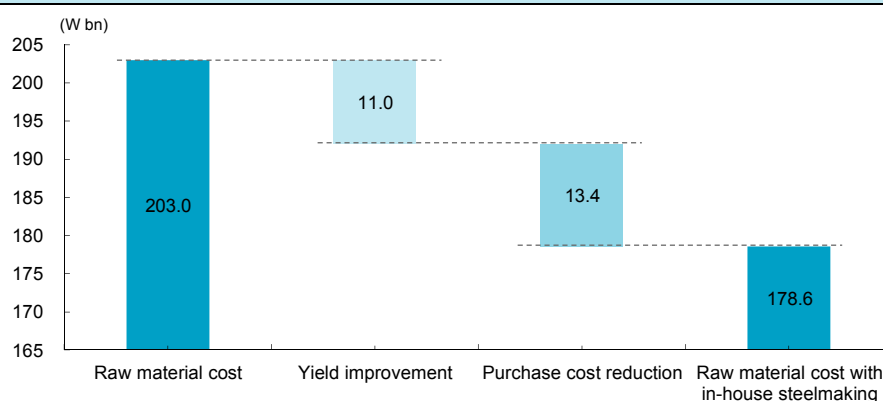
If Taewoong can procure raw materials from its steelmaking unit, it would be able to internalize the added value enjoyed by steelmakers. Typically, steelmakers enjoy ~7% margin on intermediate products such as ingots, slabs and blooms. If Taewoong had procured all raw materials internally in 2015, costs would not be W203bn but rather W188.8bn that reflects the absent ~7% steelmaking margin (W14.2bn).

3) Analyzing the combined effects of better yields and less purchase costs

Raw material costs shrink 12% on better yields and less purchase costs

Yield improvement and purchase cost savings materialize at the same time. If in-house raw materials are used, it means fewer raw materials would be used at a cheaper price. Given the combined effects, it was found that raw material costs would shrink 12% compared to external procurement. For example, assuming W100 is spent to procure raw materials from outside sources, less raw material purchases due to better yields would bring raw material costs to W94.6 (W100*(1-0.054)). And with the addition of purchase cost-saving effects, raw material costs would reach W88 (W94.6*(1-0.07)). If Taewoong had procured all raw materials internally in 2015, its raw material costs would have been W178.6bn, down W24.4bn from W203bn. This means the 2015 OP would spike from W6.1bn to W30.5bn. We believe the raw material cost savings driven by steelmaking vertical integration will help improve the company's fundamentals.

Figure 13. 2015 raw material cost savings comparison



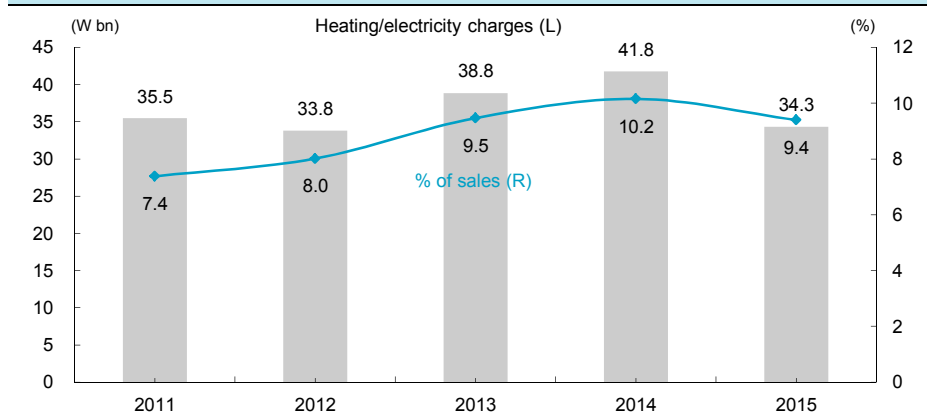
Source: Korea Investment & Securities

2. Less heating costs

Shorter heating time leads to less heating and electricity charges, enabling 70% cost cut compared to using materials stored at ambient temperature

Taewoong purchases raw materials stored at ambient temperature from steelmakers and heats the materials to more than 1,400°C (same as a blacksmith heating metal before hammering) before moving on to the forging process. In 2015, Taewoong spent W34.3bn on fuel and electricity for this process. But with the new steelmaking unit, the heated raw materials can be used in the forging process before they cool to ambient temperature. In this case, the raw materials that are still hot would only need additional heat treatment. This would mean a shorter heating time and thus reduced heating and electricity charges, enabling a 70% cut in raw material costs compared to using those stored at ambient temperature. But given that steel and forging mills are separately located, the materials would need to be transported using a specially equipped vehicle. As such, we believe only 50% of the internally sourced raw materials will be used for the forging process. That is, if Taewoong procures all raw materials on its own, it could reduce heating fuel and electricity costs by 35% (heated raw material input 50%*raw material cost reduction 70%). If Taewoong had procured all raw materials internally in 2015, heating fuel and electricity costs would have been W34.3bn, down W12bn.

Figure 14. Heating and electricity charges and % of sales



Source: Korea Investment & Securities

3. Less logistics costs

Less transport and other extra costs via internal procurement

When raw materials are procured from outside sources, transport and other extra costs amount to W25,000 per tonne in Korea and W75,000 per tonne in other countries. As Taewoong imports more than 60% of raw materials from abroad, logistics costs are quite heavy. In 2015, Taewoong used 250,000 tonnes of raw materials and related logistics costs (incl. extra costs) are estimated at W14.2bn. If the company had procured all raw materials internally in 2015, it would have saved W14.2bn in logistics costs.

Table 4. 2015 logistics costs estimate breakdown

Estimate breakdown	
Raw materials input (tonnes)	252,130
- Domestic	94,549
- Imports	157,581
Logistics costs per tonne (W '000/tonne)	
- Domestic	25
- Imports	75
Logistics costs (W bn)	14.2
- Domestic	2.4
- Imports	11.8

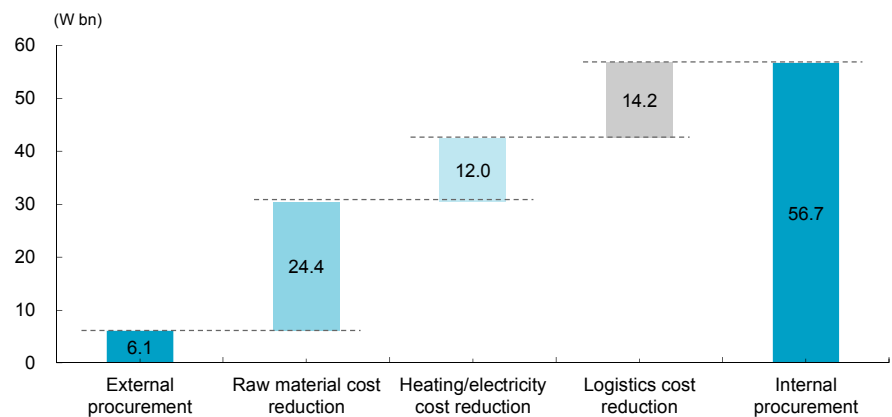
Source: Korea Investment & Securities

4. Comprehensive analysis of steelmaking business effect

Cost reduction from internal procurement:
1) 12% for raw materials,
2) 35% for heating and electricity and 3) 100% for logistics

Assuming all raw materials are procured internally and manufacturing costs stay the same as externally sourced costs, Taewoong could save 1) 12% on raw materials, 2) 35% on heating and electricity and 3) 100% on logistics. While the 2015 OP came in at W6.1bn, if all cost-saving effects are considered, the OP would balloon to W56.7bn. We used past data in this analysis to 1) measure the effects of the steelmaking business using specific figures and 2) verify the changes stemming from production volume. According to the aforementioned analysis, it was found that steelmaking helps drive down the COGS ratio. As such, greater sales driven by increased output would mean a bigger OP.

Figure 15. 2015 OP comparison



Source: Korea Investment & Securities

IV. Likely seamless external sale of raw material steel

Goals of steelmaking unit: 1) Use of internal raw materials and 2) external sale of products

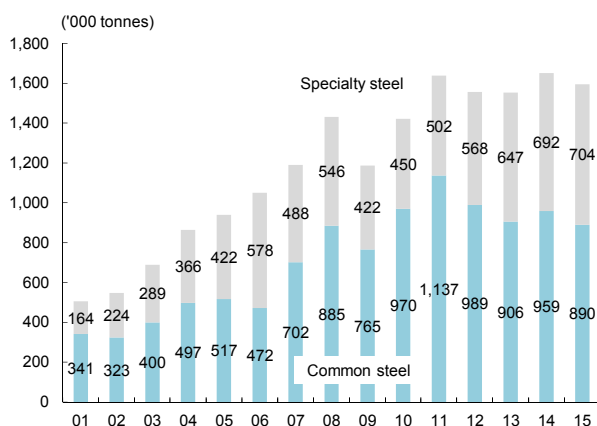
Typically, a 120-tonne EAF unit has annual capacity of 1.2mn tonnes while Taewoong anticipates it at 700,000 tonnes. The difference is because Taewoong will produce several types of raw material steel such as carbon, specialty and stainless, which would require facility adjustments for production. Manufacturing those steel items and the required facility adjustments would result in fewer daily hours of operation compared to a dedicated item. Taewoong's forging mill has a maximum annual capacity of 320,000 tonnes (66 tonnes/hour*13.4 hours/day*365 days). Assuming full utilization at the forging mill, the required raw material input would be 390,000 tonnes (320,000 tonnes of forging capacity divided by 82.8% internal raw material supply). It means Taewoong's steelmaking capacity would be more than enough to supply internal demand, implying the company is pursuing the opportunity to sell raw material steel in addition to internal use. One may think Taewoong would increase forging capacity but the chance is slim given the current utilization is estimated at less than 70%. That is, Taewoong is not positioned to add the steelmaking capacity only to feed greater forging capacity. Taewoong's intention behind the steelmaking capacity addition would be 1) easing the fixed cost burden stemming from huge capex and 2) additional profit generation. If quality is sufficiently high, Taewoong should see little difficulty in selling the raw material steel. The product quality should not be a problem as the firm has secured skilled workers.

1. Forging ingots in short supply

Ingots, which account for 50%+ of materials used in forging, are in short supply

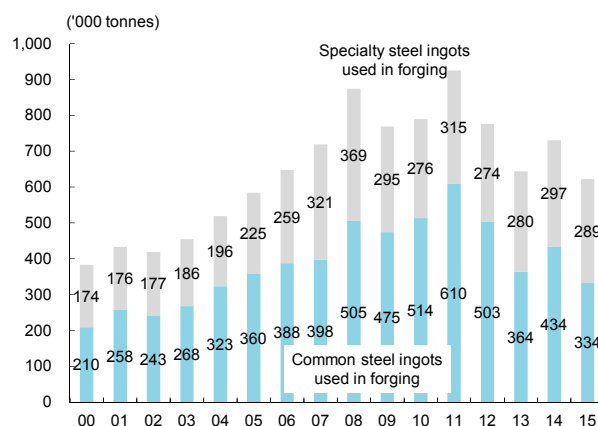
Domestic production of forged steel totaled 1.6mn tonnes (common steel 890,000 tonnes + specialty steel 700,000 tonnes) in 2015. Meanwhile, the production of forging ingots reached only 620,000 tonnes (common steel 330,000 tonnes + specialty steel 290,000 tonnes). Ingots represent more than 50% of the materials used in forging and thus are in short supply in Korea. Looking at the trade balance, Korea is a net importer of both common steel and specialty steel ingots. We believe Taewoong's production will help replace the imported ingots.

Figure 16. Domestic production of forged steel

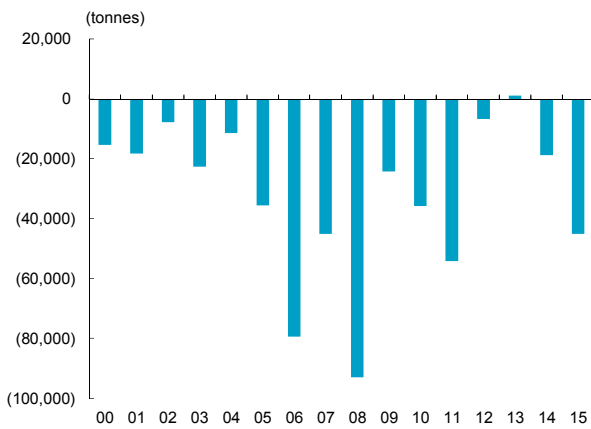


Source: Korea Iron and Steel Association, Korea Investment & Securities

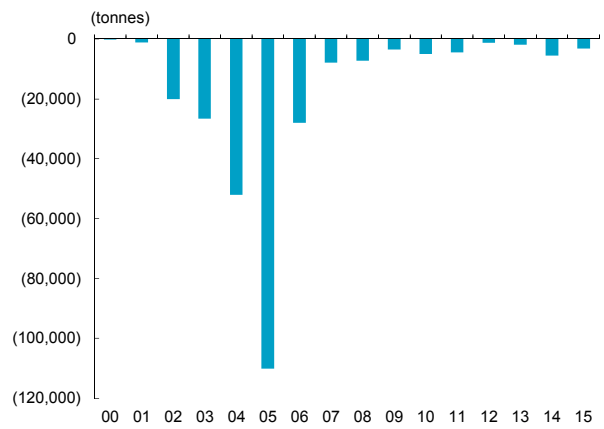
Figure 17. Domestic production of ingots used in forging



Source: Korea Iron and Steel Association, Korea Investment & Securities

Figure 18. Korean trade balance of common steel ingots **Figure 19. Korean trade balance of specialty steel ingots**

Source: Korea Iron and Steel Association, Korea Investment & Securities

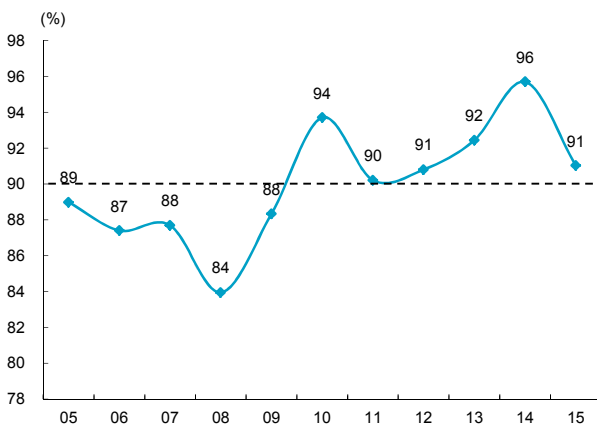


Source: Korea Iron and Steel Association, Korea Investment & Securities

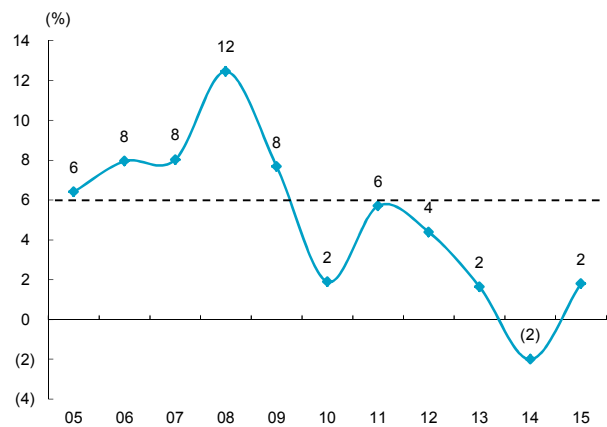
2. Even rival forging firms to buy Taewoong's round bloom

Rival forging firms will likely buy Taewoong's round bloom to improve profitability

Big demand for round blooms will likely come from Taewoong's rival companies as well. When ingot is replaced by round bloom, Taewoong's production yield jumps from 70% to 92% and this should be the same at other steel forging companies. Round bloom is clearly a better choice to produce round forged steel in terms of time saved and the nature of steel. Although Taewoong is a rival, other forging companies will likely buy its round bloom to achieve better profitability given their more than 90% COGS-to-sales and less than 6% OPM since 2010 on a combined basis.

Figure 20. Combined COGS-to-sales at forging firms

Source: Korea Investment & Securities

Figure 21. Combined OPM at forging firms

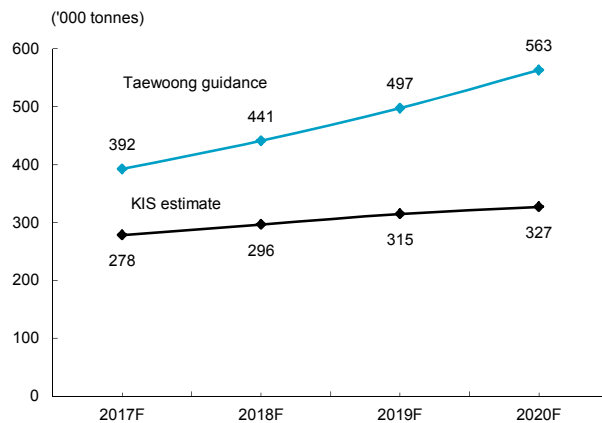
Source: Korea Investment & Securities

3. Outlook for external sale of raw material steel

Gap between company guidance and our estimate is due to classification of sales to affiliates

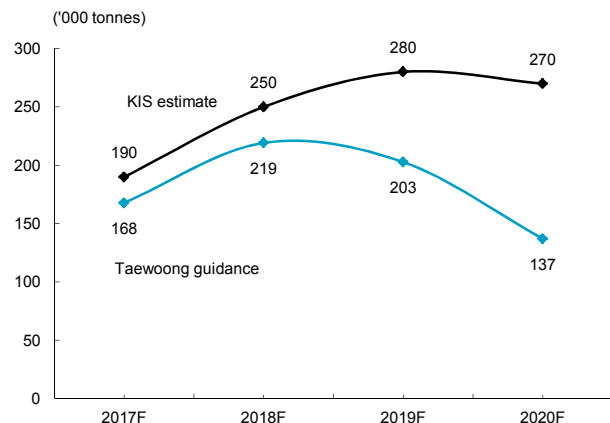
Taewoong's own guidance for internal consumption and external sale of its raw material steel differs a bit from our estimates. Our forecast is 1) internal sales would be less than the company's guidance while 2) external sales volume would be greater. The gap is due to the difference in defining its supply to affiliates: Taewoong views it as internal consumption compared to our classification as external sale. We also conservatively estimate that total sales volume would be less than the company's guidance.

Figure 22. Internal sales volume



Source: Korea Investment & Securities

Figure 23. External sales volume



Source: Korea Investment & Securities

Table 5. Raw material steel sales volume: Taewoong guidance vs. KIS est.

(tonnes)

			2017	2018	2019	2020
Taewoong guidance	Internal	Carbon steel	233,750	250,113	267,621	286,354
		Alloy steel	146,250	175,500	210,600	252,720
		Stainless steel	12,207	15,259	19,073	23,842
		Total	392,207	440,872	497,294	562,916
	External	Carbon steel	26,250	59,887	62,379	43,646
		Alloy steel	113,750	114,500	89,400	47,280
		Stainless steel	27,793	44,741	50,927	46,158
		Total	167,793	219,128	202,706	137,084
	Total		560,000	660,000	700,000	700,000
KIS estimate	Internal	Carbon steel	208,225	176,681	178,477	175,815
		Alloy steel	62,193	110,543	125,234	138,355
		Stainless steel	7,881	9,226	10,889	12,530
		Total	278,299	296,450	314,600	326,700
	External	Carbon steel	70,000	110,000	130,000	120,000
		Alloy steel	100,000	100,000	100,000	100,000
		Stainless steel	20,000	40,000	50,000	50,000
		Total	190,000	250,000	280,000	270,000
	Total		468,299	546,450	594,600	596,700

Source: Korea Investment & Securities

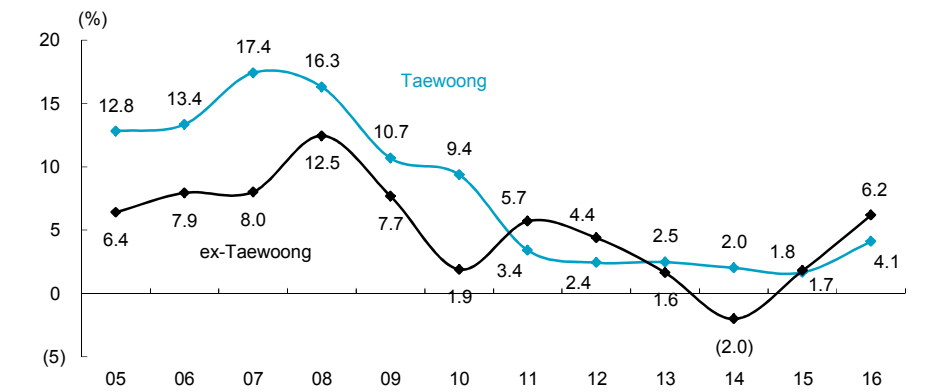
V. Upcycle started for forging industry

1. Downcycle survived

**Forging industry
suffered during 2011-
2015**

Since the downcycle began in 2009, Korean forging companies went through a severe recession during 2011-2015 that forced them to withdraw from the forging business or sell off facilities. Taewoong also saw its OPM dip below the 4% mark during 2011-2015. But in 1H16, Taewoong's OPM picked up to 4.1% and the combined OPM at other forging firms rose to 6.2%.

Figure 24. Taewoong and ex-Taewoong forging companies OPM



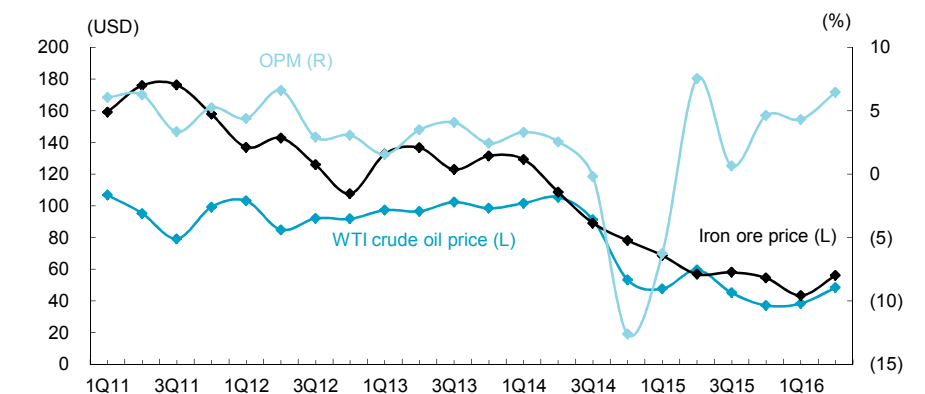
Note: ex-Taewoong forging companies are Daechang Forging, Formetal, Heungkuk, Hanil Forging Industrial and Hyunjin Materials
Source: Korea Investment & Securities

2. Upcycle driven by restructuring and turnaround of material prices

**Reduced forging
supply since 1H16 and
rising material prices
created an upcycle**

We believe the forging industry passed an inflection point in 1H16. The downcycle was triggered by 1) the shipbuilding industry's downcycle, 2) intense competition among forging companies in the wind power industry and 3) the steady drop of material prices. The growing presence of Chinese rivals also presented a challenge to Korean firms. The shipbuilding industry's cycle has yet to recover. But forging supply has reduced amid the industry's restructuring (with Pyeong San Metal, Unison, Mysco and SPP Yulchon Energy being put up for sale) and the prices for materials have risen, which led to an upcycle for the forging industry. Companies that survived the downcycle are now ready to enjoy the upcycle.

Figure 25. Oil, iron ore prices and forging OPM



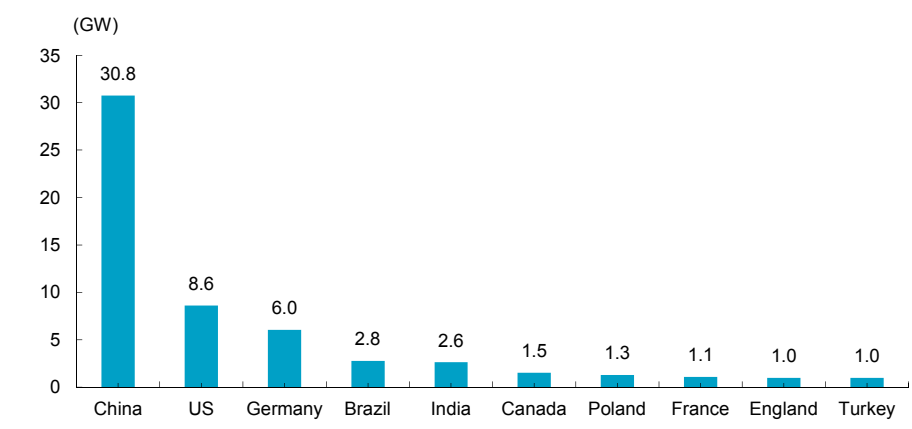
Source: CEIC, Quantiwise, Korea Investment & Securities

3. Potential beneficiaries are carbon steel forging firms with scale and specialty steel forging firms

In small/midsize common steel forging, Chinese firms to enjoy the upcycle

Not all companies that survived the downcycle will be part of the upcycle. As Chinese firms continue to pose fierce competition, the benefits of the upcycle will be felt to a different extent by company. In the small/midsize common steel forging segment, the upcycle will likely be enjoyed by Chinese rivals instead of Korean firms. The reason is China leads the wind power industry, the biggest downstream market for forged steel, and China's focus is on onshore wind power generation, which uses mainly smaller forged steel products.

Figure 26. Top 10 countries in wind power capacity growth in 2015



Source: GWEC, Korea Investment & Securities

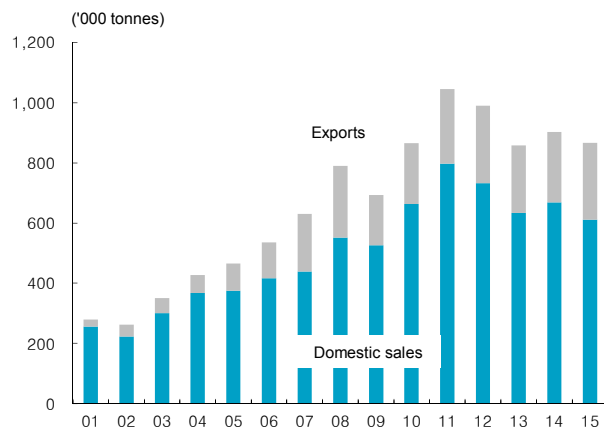
As a maker of large specialty steel forged products, Taewoong is positioned to enjoy the upcycle with a competitive edge over Chinese firms

Taewoong has a competitive edge over Chinese firms in specialty steel forging. Among Korea's shipments of common steel forged products, shipments declined for domestic use and exports were stagnant since 2011. In contrast, shipments of specialty steel forged products increased for both domestic sales and export. The weighting of specialty steel in forged products jumped from 30% in 2011 to 44% in 2015, the biggest share since 2001. Meanwhile, statistics are not available for forged steel production in China. The China Iron and Steel Association does not provide the data either as many forged steel producers are not members of the association. Given the size of China's steel industry, any company's production of 1mn tonnes of ultra-large forged steel should only represent 0.13% of China's crude steel production that reaches 800mn tonnes. While some manufacture wind turbine flanges, we see no Chinese forging company matching Taewoong. We believe the companies specializing in large and specialty steel forged products will avoid competition with Chinese products and fully enjoy the upcycle.

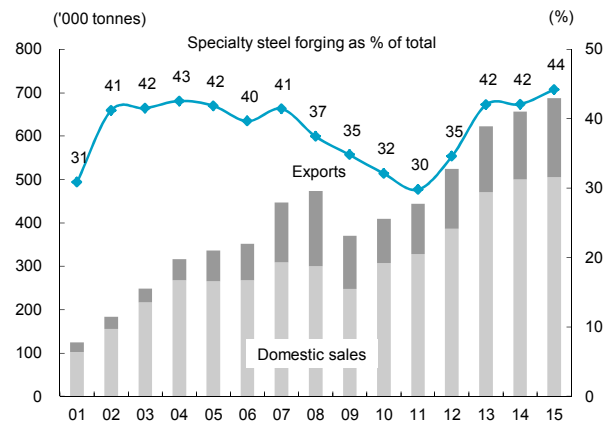
Table 6. China wind turbine flange makers vs. Taewoong

Company	Forging press	Ring mill	Annual capacity (tonnes)
Wuxi Baolu Forging	3,600T	4,500mm	NA
Shanghai Donghuang Forging	NA	5,000mm	NA
Hebei Huayu Flange Manufacturing	4,000T	7,000mm	NA
Zhangjiagang Sanlin Flange Forging	4,000T 6,300T	6,300mm	50,000
Jiangyin Zenkung Forging	2,000T 4,500T	4,000mm	80,000
DFN, INC.	3,500T 6,000T	7,000mm	NA
Wuxi Paike Heavy Casting and Forging	2,000T 3,600T	3,500mm 5,000mm	60,000
Shanghai Sinco International Trade	800T 2,000T 4,000T	1,000mm 2,000mm 5,000mm	NA
Rongcheng Ring Forgings	3,000T 7,000T	1,600mm 2,500mm 5,000mm	NA
Jiangyin Fangyuan Ringlike Forging & Flange	800T 1,600T 2,000T 3,500T 3,600T	2,000mm 2,500mm 3,500mm 5,000mm	150,000
Taewoong	1,500T 2,000T 3,500T 5,000T 8,000T 15,000T	3,000mm 9,500mm	320,000

Source: Korea Investment & Securities

Figure 27. Korea common steel forging shipments: domestic sales vs. exports

Source: Korea Iron and Steel Association, Korea Investment & Securities

Figure 28. Korea specialty steel forging as % of total

Source: Korea Iron and Steel Association, Korea Investment & Securities

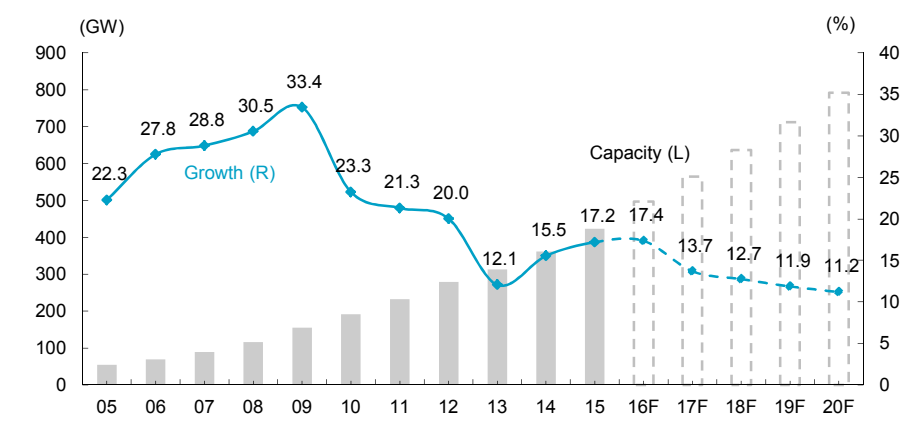
VI. Wind power market to fuel forging demand

1. Ongoing rise of wind power

Taewoong's core engine in future is the sustainable growth of wind power generation

In 2015, the electricity generated from global wind farms reached 423.4GW, up 17.2% YoY. The rise was slower than the pre-2010 period when power capacity growth hit above 20% but it is nonetheless still gaining. Of particular note is that growth is recovering after bottoming in 2013. Forecasters predict that growth will begin to slow again from 2017 but should continue to surpass 10% through 2020. The growth of wind power is ongoing. At Taewoong, the wind power segment accounts for 60% of the company's sales as of 1H16. While the profit margin is narrow due to intensifying competition, it is clearly a future core growth engine.

Figure 29. Global wind power generation capacity and growth





Source: BNEF, GWEC, Korea Investment & Securities

2. Offshore wind power on a steep climb though still marginal

Offshore wind power costs a lot but generates more than onshore farms

Wind energy is proportionate wind velocity cubed. For instance, if the average wind velocity accelerates 10% from 10m/s to 11m/s, wind energy grows 33%. More wind energy translates into more electricity generation. The average wind velocity onshore is 4-8m/s and offshore 8-12m/s. As such, offshore locations can deliver more wind-generated electricity than onshore facilities. However, the initial investment costs are three-fold that of onshore wind farms and the maintenance/repair costs are also more expensive.

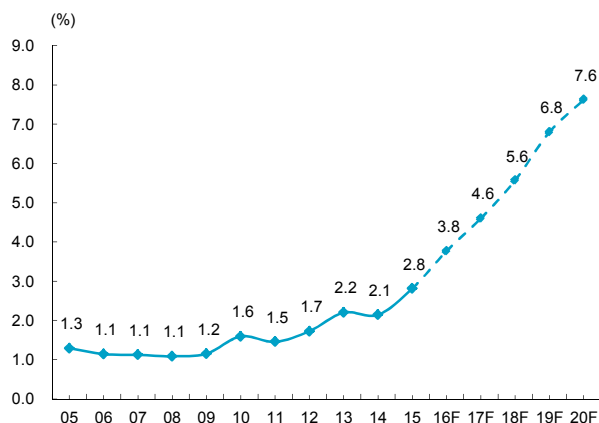
Table 7. Offshore and onshore wind power pros and cons

	Offshore wind power	Onshore wind power
		
	Relatively large generating capacity	Initial investment costs one-third that of offshore wind power (Offshore USD2,500-3,500/KW, onshore USD850-1,350/KW)
Pros	Offshore wind's electricity conversion ratio reaches 40% compared to 25% for onshore wind power No spatial limitations; possible to erect large wind farms Wind velocity typically picks up in the afternoon when electricity demand is at its peak Most major cities are on the coast, shortening the power transmission distance to urban areas	
Cons	Initial investment is three-times that of onshore wind power The towers for wind turbines must stand in seawater, requiring large structures and corrosion resistance High maintenance/repair costs Maintenance/repair of wind turbines involve helicopters, technicians, a jack-up rig, etc.	Generating capacity is relatively small No difficulties addressing strong wind velocity or change in wind direction Spatial constrictions (noise, geographical features, landscape blight), make it difficult to build a large wind farm

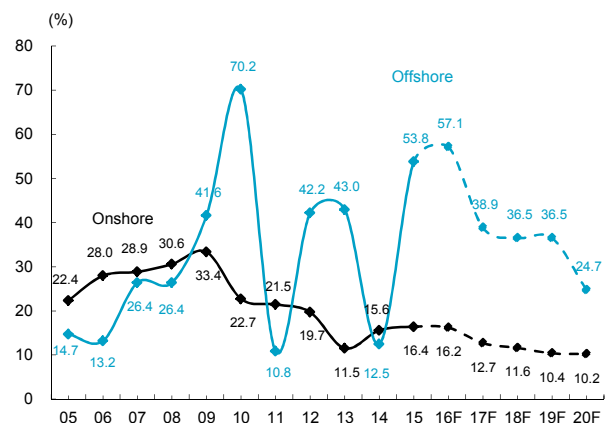
Source: Korea Investment & Securities

Offshore wind power should deliver big growth on the back of 1) energy efficiency, 2) large-scale generation and 3) location merits

Due to the drawback in terms of costs, offshore wind power accounts for only a marginal 2.8% of global wind electricity generation as of 2015. However, offshore wind power is spreading headed by Europe. Offshore wind power involves substantial capex as each farm is constructed on a large scale. This means a big increase in power generation facilities. Offshore wind power should deliver big growth in future given energy efficiency, large-scale electricity generation and location merits.

Figure 30. % of offshore among wind power generation

Source: BNEF, GWEC, Korea Investment & Securities

Figure 312. Growth of generating capacity of onshore and offshore wind power

Source: BNEF, GWEC, Korea Investment & Securities

Offshore wind power generators require large forged products using special steel resistant to water corrosion

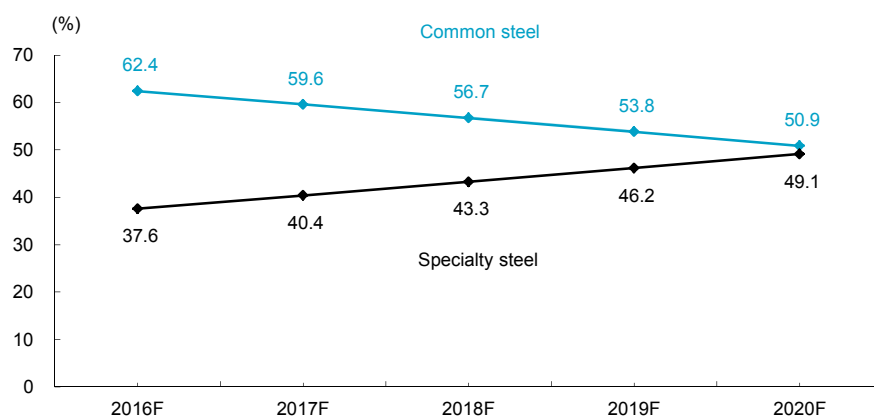
From steelmaking, set to maximize benefits from a growing offshore wind power market

3. Taewoong's future lies in offshore wind power

Offshore wind power involves building towers for wind turbines in the ocean, and thus requires enduring humid conditions and strong winds. As such, it is necessary to build a 1) heavy tower structure, 2) bigger power generator and 3) use parts featuring materials that do not corrode in water. The parts equipped on the power generator must have sufficient size and water corrosion resistance. Accordingly, this calls for large forged products made from special steel rather than small or midsize parts forged from common steel.

Taewoong owns a ring mill featuring a 9,500mm diameter and mainly manufactures large forged products. As such, the growing presence of offshore in the wind power market is a definite plus for the company. Moreover, it has laid the foundation to expand its business in forged products using special steel (alloy, stainless) with the start of its steelmaking unit. In fact, the reason behind Taewoong's decision to pour massive amounts of money into steelmaking appears to be a strategy to maximize the benefits from a growing offshore wind power market. The sales volume outlook for steelmaking provided by Taewoong confirms this view.

Figure 323. Weighting of in-house demand for common and special steel



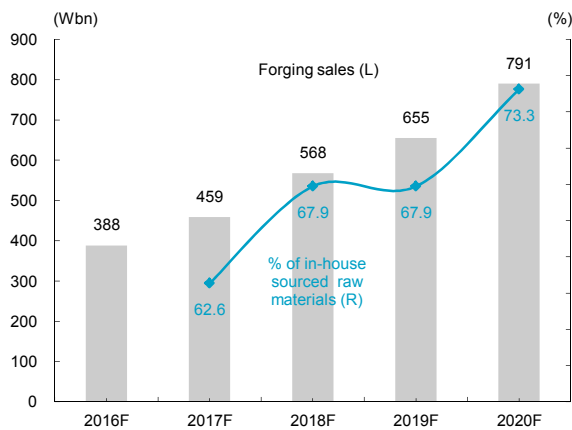
Source: Korea Investment & Securities

VII. Earnings to deliver explosive growth for next four years

Start of steelmaking and wind power industry's growth will fuel earnings

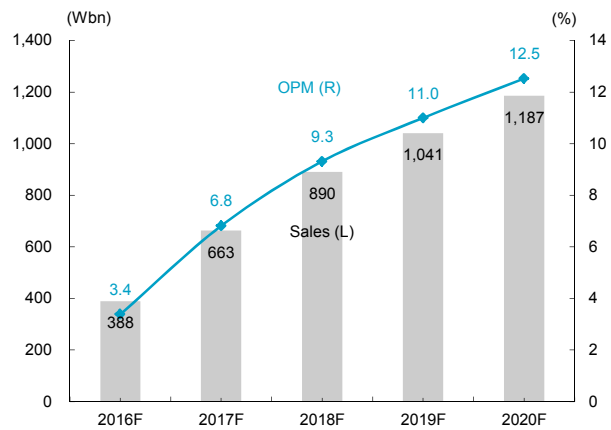
The start of the steelmaking business and growth of the wind power industry should dramatically improve company earnings. Specifically, on the back of heavier forging demand, in-house sourced materials should be in greater demand and drive up the utilization of the steel mill, which in turn bolsters profit. We believe wind power generation, especially the steep growth of offshore wind power, would continue to fuel the company's forging business through 2020. Sales gains should also scale up profitability to open a golden era.

Figure 33. Forging sales and % of in-house sourced materials



Source: Korea Investment & Securities

Figure 344. Sales and OPM



Source: Korea Investment & Securities

1. Total earnings outlook (before eliminating internal transactions)

Backed by external sales from steelmaking in 2017, total earnings should see sales and OPM go up

For starters, to set apart the earnings outlook for steelmaking, we developed an earnings outlook in a total amount basis that does not remove in-house transactions of materials and internally produced scrap metal. We estimate 2020 sales of W1.45tn and OP of W149bn. Top-line growth should take off as the steelmaking unit's external sales pick up from 2017, and OPM would climb at the same time. However, steelmaking should post losses through 2020 assuming a conservative utilization rate. Also, steelmaking OPM would fall further in 2020 due to a greater weighting of in-house sales that do not generate profit.

Table 8. Simple earnings outlook (total)

(W bn, %)

		2013	2014	2015	2016F	2017F	2018F	2019F	2020F
Forging	Sales	410	412	365	388	473	585	674	811
	COGS	370	371	320	334	348	426	480	545
	COGS-to-sales	90.3%	90.2%	87.5%	86.1%	73.4%	72.8%	71.2%	67.1%
	OP	10	8	6	13	101	130	161	228
	OPM	2.5%	2.0%	1.7%	3.4%	21.3%	22.2%	23.9%	28.2%
Steelmaking	Utilization rate					67%	78%	85%	85%
	Sales					339	504	590	640
	COGS					377	526	608	689
	COGS-to-sales					111.0%	104.4%	103.1%	107.8%
	OP					(55)	(47)	(47)	(80)
	OPM					(16.3%)	(9.3%)	(8.0%)	(12.5%)
Combined	Sales	410	412	365	388	813	1,089	1,264	1,451
	COGS	370	371	320	334	725	952	1,088	1,234
	COGS-to-sales	90.3%	90.2%	87.5%	86.1%	89.1%	87.4%	86.1%	85.1%
	OP	10	8	6	13	45	83	115	149
	OPM	2.5%	2.0%	1.7%	3.4%	5.6%	7.6%	9.1%	10.2%

Source: Korea Investment & Securities

Table 9. Detailed earnings outlook (total)

(W bn, %)

		2013	2014	2015	2016F	2017F	2018F	2019F	2020F
Forging	Sales	410	412	365	388	473	585	674	811
	- Forging	410	412	365	388	459	568	655	791
	- In-house produced scrap					15	17	19	21
	COGS	370	371	320	334	348	426	480	545
	COGS-to-sales	90.3%	90.2%	87.5%	86.1%	73.4%	72.8%	71.2%	67.1%
	- Materials	255	237	203	188	216	268	300	332
	Internally sourced					135	182	204	243
	Externally sourced	255	237	203	188	81	86	96	89
	- Heating & electricity	39	42	34	33	35	43	50	58
	- Depreciation	9	9	9	15	9	9	9	9
	- Others	67	84	73	98	87	106	122	145
	% of COGS								
	- Materials	69%	64%	64%	56%	62%	63%	62%	61%
	- Heating & electricity	10%	11%	11%	10%	10%	10%	10%	11%
	- Depreciation	3%	2%	3%	4%	3%	2%	2%	2%
	- Others	18%	23%	23%	29%	25%	25%	25%	27%
	SG&A	30	32	40	41	25	29	33	38
	OP	10	8	6	13	101	130	161	228
	OPM	2.5%	2.0%	1.7%	3.4%	21.3%	22.2%	23.9%	28.2%
Steelmaking	Sales					339	504	590	640
	- Internal sales					135	182	204	243
	- External sales					204	323	386	396
	COGS					377	526	608	689
	COGS-to-sales					111.0%	104.4%	103.1%	107.8%
	- Materials					301	428	495	576
	Externally sourced					286	410	476	555
	In-house produced scrap					15	17	19	21
	- Electricity					23	33	39	39
	- Depreciation					16	16	16	16
	- Labor					8	8	8	8
	- Others					29	42	49	49
	% of COGS								
	- Materials					76%	78%	78%	81%
	- Electricity					6%	6%	6%	6%
	- Depreciation					4%	3%	3%	2%
	- Labor					2%	1%	1%	1%
	- Others					8%	8%	8%	7%
	SG&A					18	25	28	30
	OP					(55)	(47)	(47)	(80)
	OPM					(16.3%)	(9.3%)	(8.0%)	(12.5%)
Combined OP		10	8	6	13	45	83	115	149

Source: Korea Investment & Securities

2. Net earnings outlook (after eliminating internal transactions)

When removing in-house transactions, steelmaking losses widen and forging profit goes up

On a net basis when removing the in-house transactions between the forging and steelmaking units, 2020 sales should deliver W1.19tn and OP W149bn. Naturally, OP is the same as it would be on a total basis. Once steelmaking gains traction in 2017 through to 2020, we expect sales to achieve a CAGR of 21.4%, OP 48.7%, and NP 50.9%. For materials sourced from steelmaking to forging, 1) sales are removed from steelmaking and 2) costs for raw materials are removed from forging. As a result, forging profit should grow but steelmaking losses widen. If the utilization rate surpasses our estimates, losses at the steelmaking division narrow and drive up the overall OP.

Table 10. Simple earnings outlook (net)

(W bn, %)

		2013	2014	2015	2016F	2017F	2018F	2019F	2020F
Forging	Sales	410	412	365	388	459	568	655	791
	COGS	370	371	320	334	213	244	277	301
	COGS-to-sales	90.3%	90.2%	87.5%	86.1%	46.4%	43.0%	42.2%	38.1%
	OP	10	8	6	13	216	289	340	444
	OPM	2.5%	2.0%	1.7%	3.4%	47.2%	50.9%	51.9%	56.1%
Steelmaking	Utilization rate					67%	78%	85%	85%
	Sales					204	323	386	396
	COGS					362	509	589	668
	COGS-to-sales					177.2%	157.8%	152.6%	168.7%
	OP					(171)	(206)	(226)	(295)
	OPM					(83.7%)	(63.9%)	(58.5%)	(74.5%)
Combined	Sales	410	412	365	388	663	890	1,041	1,187
	COGS	370	371	320	334	575	753	865	970
	COGS-to-sales	90.3%	90.2%	87.5%	86.1%	86.7%	84.6%	83.1%	81.7%
	OP	10	8	6	13	45	83	115	149
	OPM	2.5%	2.0%	1.7%	3.4%	6.8%	9.3%	11.0%	12.5%

Source: Korea Investment & Securities

Table 11. Detailed earnings outlook (net)

(W bn, %)

		2013	2014	2015	2016F	2017F	2018F	2019F	2020F
Forging	Sales	410	412	365	388	473	585	674	811
	- Forging	410	412	365	388	459	568	655	791
	- In-house produced scrap					15	17	19	21
	COGS	370	371	320	334	348	426	480	545
	COGS-to-sales	90.3%	90.2%	87.5%	86.1%	73.4%	72.8%	71.2%	67.1%
	- Materials	255	237	203	188	216	268	300	332
	Internally sourced					135	182	204	243
	Externally sourced	255	237	203	188	81	86	96	89
	- Heating & electricity	39	42	34	33	35	43	50	58
	- Depreciation	9	9	9	15	9	9	9	9
	- Others	67	84	73	98	87	106	122	145
	% of COGS								
	- Materials	69%	64%	64%	56%	62%	63%	62%	61%
	- Heating & electricity	10%	11%	11%	10%	10%	10%	10%	11%
	- Depreciation	3%	2%	3%	4%	3%	2%	2%	2%
	- Others	18%	23%	23%	29%	25%	25%	25%	27%
	SG&A	30	32	40	41	25	29	33	38
	OP	10	8	6	13	101	130	161	228
	OPM	2.5%	2.0%	1.7%	3.4%	21.3%	22.2%	23.9%	28.2%
Steelmaking	Sales					339	504	590	640
	- Internal sales					135	182	204	243
	- External sales					204	323	386	396
	COGS					377	526	608	689
	COGS-to-sales					111.0%	104.4%	103.1%	107.8%
	- Materials					301	428	495	576
	Externally sourced					286	410	476	555
	In-house produced scrap					15	17	19	21
	- Electricity					23	33	39	39
	- Depreciation					16	16	16	16
	- Labor					8	8	8	8
	- Others					29	42	49	49
	% of COGS								
	- Materials					76%	78%	78%	81%
	- Electricity					6%	6%	6%	6%
	- Depreciation					4%	3%	3%	2%
	- Labor					2%	1%	1%	1%
	- Others					8%	8%	8%	7%
	SG&A					18	25	28	30
	OP					(55)	(47)	(47)	(80)
	OPM					(16.3%)	(9.3%)	(8.0%)	(12.5%)
Combined OP		10	8	6	13	45	83	115	149

Source: Korea Investment & Securities

VIII. Earnings sensitivity analysis

Impact of major earnings variables: FX rate > forging utilization > steelmaking utilization

The main variables for Taewoong's earnings are the KRW/USD and utilization rates for forging and steelmaking. Assuming steelmaking utilization would rise on the external sale of its raw material steel, we analyzed earnings sensitivity for the three variables. In conclusion, the impact on earnings seems biggest from the KRW/USD followed by forging and steelmaking utilization rates in that order. As Taewoong generates more than 70% of sales from abroad, KRW/USD volatility has a substantial impact on revenue. And in terms of utilization, forging would be more influential than steelmaking as a rise for the former will automatically prompt an uptick for the latter to meet the supply of feedstock.

Table12. Earnings sensitivity

(W bn, %)

		Assumptions				1% rise			Diff.		
	Variables	Sales	OP	NP		Sales	OP	NP	Sales	OP	NP
KRW/USD	2017F	1,194	663	45	35	668	47	36	0.7%	4.2%	3.6%
	2018F	1,194	890	83	66	897	85	68	0.7%	3.0%	2.5%
Forging utilization (%)	2017F	72	663	45	35	672	46	36	1.4%	2.7%	2.7%
	2018F	77	890	83	66	902	85	68	1.3%	2.2%	2.2%
Steelmaking utilization (%)	2017F	67	663	45	35	671	46	35	1.1%	0.8%	0.8%
	2018F	78	890	83	66	899	83	66	1.0%	0.5%	0.5%

Source: Korea Investment & Securities

IX. Risk factors

Warrants to be exercised before year-end expiry

In December 2011, Taewoong issued bonds with detachable warrants at a total face value of W97bn. While the bonds were fully repaid in December 2013, warrants have not been exercised for 3,085,976 shares (exercise price set at W20,901 per share). As all warrants will likely be exercised by the expiry date (December 22, 2016), we expect the number of outstanding shares to rise from the current 18,237,134 to 21,323,110 at end-2016. Investment indicators described in this report assume that the entire warrants will be exercised by the expiry date.

Table 13. Unexercised warrants

('000 shares, KRW)

Category	Value
Current outstanding shares ('000)	18,237
Shares available for exercise ('000)	3,086
Exercise price (KRW)	20,901
Outstanding shares upon full exercise ('000)	21,323

Source: Korea Investment & Securities

Company overview & Glossary

■ Company overview

Established in 1981, Taewoong manufactures and supplies key forged products used for downstream industries such as wind power generation, power plants, shipbuilding and industrial machinery/equipment. With facility investment to construct an electric-arc furnace mill since 2013, it is set to build an integrated production system with the addition of steelmaking operations. Taewoong, equipped with the world's largest open-die forging press (15,000 tonnes) and ring rolling mill (9,500mm diameter), has a competitive edge in large forgings.

■ Glossary

- Forging: A manufacturing process involving the heating of metal, blowing with a hammer or a die and shaping
- Ingot: Metal, either pure or alloy, that is heated past its melting point, cast into a mold and then solidified
- Slab: A semi-finished product in rectangular shape that is further processed to make thick sheets
- Bloom: An intermediate-stage piece of steel that is large and rectangular and used to make long products
- Flange: Circular rim assembled to the outer edge or connected part of a product for strength or attachment

Balance sheet

FY-ending Dec. (W bn)	2014A	2015A	2016F	2017F	2018F
Current assets	379	329	333	502	674
Cash & cash equivalents	38	46	49	83	111
Accounts & other receivables	116	106	97	133	178
Inventory	92	75	78	99	134
Non-current assets	385	531	783	787	788
Investment assets	20	20	21	36	48
Tangible assets	353	498	748	728	708
Intangible assets	1	1	1	1	1
Total assets	764	860	1,116	1,290	1,462
Current liabilities	135	131	196	273	401
Accounts & other payables	91	121	128	219	294
ST debt & bonds	38	5	0	0	0
Current portion of LT debt	2	1	0	0	0
Non-current liabilities	54	147	260	322	298
Debentures	0	0	0	0	0
LT debt & financial liabilities	9	104	214	244	194
Total liabilities	189	278	456	594	700
Paid-in capital	9	9	11	11	11
Capital surplus	113	113	176	176	176
Other reserves	0	0	0	0	0
Retained earnings	387	394	407	442	509
Shareholders' equity	575	582	660	695	762

Income statement

FY-ending Dec. (W bn)	2014A	2015A	2016F	2017F	2018F
Sales	412	365	388	663	890
COGS	371	320	334	575	753
Gross profit	40	46	54	88	137
SG&A expenses	32	40	41	43	54
Operating profit	8	6	13	45	83
Financial income	4	3	3	4	6
Interest income	4	2	3	4	6
Financial expenses	1	0	2	5	4
Interest expenses	1	0	2	5	4
Other non-operating profit	(4)	1	1	1	1
Gains (Losses) in associates, subsidiaries and JV	0	1	0	0	0
Earnings before tax	9	10	16	46	86
Income taxes	2	2	2	10	19
Net profit	7	8	13	36	67
Other comprehensive profit	66	(1)	0	0	0
Total comprehensive profit	73	7	13	36	67
EBITDA	20	18	33	77	115

Cash flow

FY-ending Dec. (W bn)	2014A	2015A	2016F	2017F	2018F
C/F from operations	31	33	112	115	172
Net profit	7	8	13	36	67
Depreciation	11	11	20	32	32
Amortization	0	0	0	0	0
Net incr. in W/C	10	11	79	45	71
Others	3	3	0	2	2
C/F from investing	(32)	(86)	(278)	(111)	(93)
Capex	(37)	(117)	(270)	(12)	(12)
Decr. in fixed assets	0	0	0	0	0
Incr. in investment	5	31	(1)	(15)	(12)
Net incr. in intangible assets	0	0	(0)	(0)	(0)
Others	0	0	(7)	(84)	(69)
C/F from financing	29	60	169	30	(50)
Incr. in equity	0	0	64	0	0
Incr. in debt	18	60	104	30	(50)
Dividends	0	0	0	0	0
Others	11	0	1	0	0
C/F from others	(0)	(0)	0	0	0
Increase in cash	28	7	3	34	28

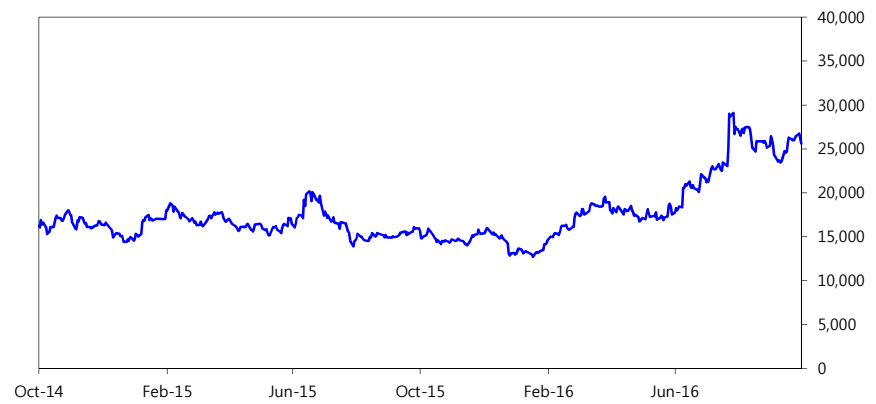
Note: K-IFRS (non-consolidated)

Key financial data

FY-ending Dec.	2014A	2015A	2016F	2017F	2018F
Per-share data (KRW)					
EPS	385	429	725	1,666	3,132
BPS	31,651	32,038	30,937	32,602	35,734
DPS	0	0	0	0	0
Growth (%)					
Sales growth	0.3	(11.2)	6.3	70.8	34.2
OP growth	(18.3)	(26.7)	115.4	244.6	83.5
NP growth	18.0	11.5	69.1	169.5	88.0
EPS growth	11.9	11.4	68.9	129.9	88.0
EBITDA growth	(10.1)	(11.3)	86.1	137.0	48.8
Profitability (%)					
OP margin	2.0	1.7	3.4	6.8	9.3
NP margin	1.7	2.1	3.4	5.4	7.5
EBITDA margin	4.8	4.8	8.4	11.7	12.9
ROA	1.0	1.0	1.3	3.0	4.9
ROE	1.3	1.3	2.1	5.2	9.2
Dividend yield	-	-	-	-	-
Dividend payout ratio	0.0	0.0	0.0	0.0	0.0
Stability					
Net debt (W bn)	(119)	(34)	61	(18)	(159)
Debt/equity ratio (%)	8.6	19.0	32.5	35.2	25.5
Valuation (x)					
PE	43.1	37.3	36.3	15.8	8.4
PB	0.5	0.5	0.9	0.8	0.7
EV/EBITDA	9.2	14.3	16.4	6.0	2.8

Changes to recommendation and price target

Company (Code)	Date	Recommendation	Price target
Taewoong (044490)	10-26-16	BUY	W38,000



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BUY	Hold	Underweight (Sell)
81.1%	17.6%	1.3%

Note: % of companies under coverage with this rating

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