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ESG INSIGHT

Merger through division and stake sale of Doosan Engine: A positive change in corporate governance

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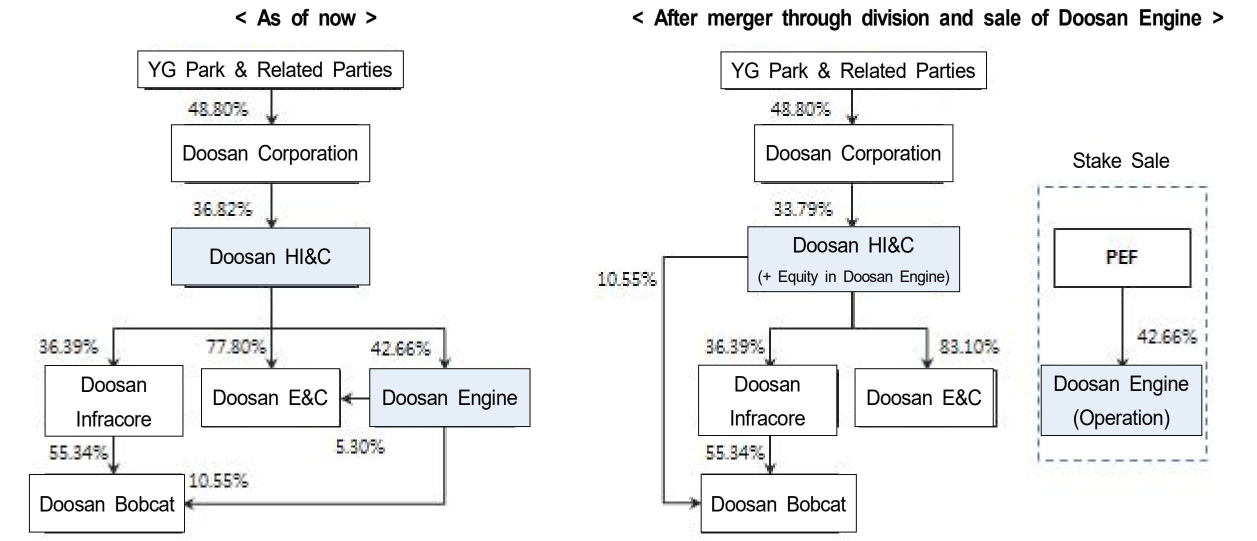
On March 13, 2018, Doosan Engine and Doosan Heavy Industries & Construction (Doosan HI&C) disclosed that ① the investment division of Doosan Engine would be spun-off ② and merged into Doosan HI&C, and ③ the Doosan HI&C-owned stake in the surviving operating company (42.66%) would be sold to the Socius-led consortium, a local private equity fund. The general meetings of shareholders to approve the merger through division and stake sale are scheduled for 3 May, 2018 and 31 May, 2018, respectively.

Looking at the ownership structure of Doosan Group, Doosan Corporation is at its peak as the highest parent company, and Doosan HI&C plays the role of an intermediate holding company, as the largest shareholder of the business group's core affiliates including Doosan Infracore, Doosan Engineering & Construction (Doosan E&C) and Doosan Engine. Doosan Engine holds 10.55% of a stake in Doosan Bobcat, a subsidiary of Doosan Infracore and sub-subsidiary of Doosan HI&C, and the value of this stake forms the core of the investment division that is spun-off.

The existing shareholders of Doosan Engine, not the Doosan HI&C shareholders, will be assigned new shares of Doosan HI&C (10,677,895 shares, 9.1% of the common shares outstanding) in accordance with the merger through division ratio (1:0.2679522). In other words, the investment equity owned by Doosan Engine is transferred to Doosan HI&C, and new shares of Doosan HI&C are assigned in return.

From the standpoint of the Doosan Engine shareholders, the subject merger through division and stake sale is a highly positive change in terms of corporate governance. I) By separating the core business of marine engine manufacturing and the investment division, the equity invested in an affiliate is to be revaluated. ii) Moreover, since the business will be separated from Doosan Group after the stake sale, the risk of making a non-transparent related party transaction with the large shareholder and supporting poor-performing affiliates of the business group will be addressed.

[Figure 1] Ownership change in Doosan Group



Note: Doosan Corporation's ownership% in Doosan HI&C after the merger through division is estimated under the assumption that Doosan Engine's shareholders do not exercise stock options.

Source: Korea Corporate Governance Service

1. Spin-off-driven revaluation of the equity invested in an affiliate

For the recent three years after Q1 2015, the market capitalization of Doosan Engine has been at a level lower than the book value of the shares it owns in its affiliates[1]. Even if the poor performance due to the sluggish upstream shipbuilding industry and the size of the company's net debt are considered, it is deemed that the investment value has been quite discounted.[2] The market capitalization of the shares Doosan Engine holds in Doosan Bobcat as of the previous day of the disclosure amounted to approximately KRW 340 billion[3], but that of Doosan Engine only stood at KRW 293.3 billion.

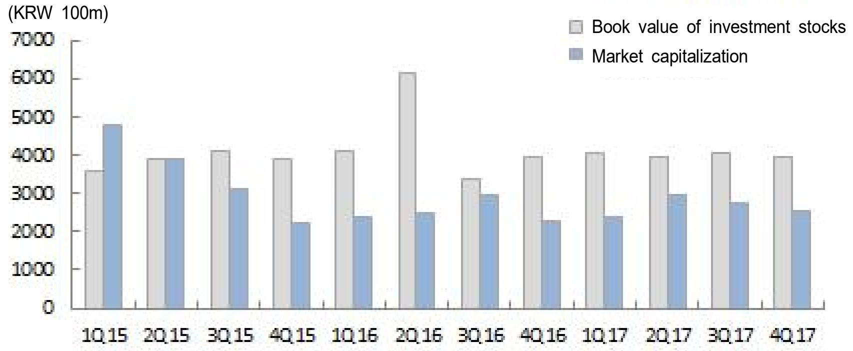
Such a gap between the equity value and market value is often found in a company belonging to a business group, and sometimes likened as "a suit with a necklace in its pocket priced lower than the necklace"[4]. Many times, affiliate shares are held in order to help the business group maintain control rather than as a result of optimal capital allocation, and thus management cannot freely dispose such shares, which is pointed out as the main reason of the discount.[5] As Doosan Bobcat manufactures

1) In addition to the stake in Doosan Bobcat, the company owns convertible preferred stock (with voting rights, 5.3%) of Doosan E&C along with a stake in Doosan CUVEX and DBC.
2) If the goodwill (the value of the surviving operating company) that is revealed through the stake sale is subtracted from the market capitalization before the spin-off, it gives KRW 100.6 billion, which is only around 36% the revalued investment assets (value of the spun-off division).
3) Market capitalization of Doosan Bobcat is approx. KRW 3.2 trillion.
4) Kyung-hoon Chun, Merger between Affiliates and Directors' Duties, Studies in Mercantile Law Vol. 36 No. 3, 2017
5) "That is, the necklace cannot be taken out and sold." (Kyung-hoon Chun, p.259 of the above paper)

small-sized construction equipment, the company does not have any business relevance with Doosan Engine, manufacturer of marine engines. Moreover, Doosan Engine does not have a significant influence on the management of Doosan Bobcat, which is why the shares have been categorized as available-for-sale financial assets.

For the calculation of the price of merger with Doosan HI&C, the intrinsic value of the spun-off division of Doosan Engine has been evaluated at KRW 7,629 per share, or KRW 278.9 billion in enterprise value. Considering KRW 135 billion worth of net debt is vested in the spun-off division, it is estimated that the investment stocks' value worth around KRW 410 billion has been fully reflected. In addition, Doosan HI&C sold its stake in the surviving operating company to a PEF at a price of KRW 82.2 billion or KRW 5,848 per share (KRW 192.7 billion worth of enterprise value)[6]. In summary, if the value of the investment division revaluated during the merger through division and stake sale is combined with the value of the operating company, it gives KRW 471.5 billion (PBR 0.85), 60.8% higher than the prior market capitalization before the spin-off.

[Figure 2] Book value of Doosan Engine's investment stocks and market capitalization



Source: Dataguide, Korea Corporate Governance Service

An opportunity to recover investment in Doosan Bobcat

As of the end of 2017, the book value of Doosan Engine's investment stocks (KRW 407.8 billion) accounts for 33.1% of the total assets (KRW 1,231.3 billion). Of these investment stocks, more than 90% comes from the stake invested in Doosan Bobcat (10.55%), a listed company. In 2007, Doosan Group acquired Bobcat America (currently known as Doosan Bobcat), global leader in small-sized construction equipment, and during the process, Doosan Engine was involved to invest a total of KRW 738.1 billion. Afterwards, Doosan Bobcat posted poor performance and as a result of the recognition of the loss on equity method, its book value dwindled to KRW 387.9 billion as of the end of 2015.

6) Even if the goodwill is included in the above-mentioned sales price, the equity value should rise through revaluation.

In November 2016, there was an expectation of investment funds recovery as Doosan Bobcat pursued an initial public offering. However, the company's IPO price was computed lower than expected, only to account KRW 260 billion in impairment loss. Further, it could only liquidate 1.3% (KRW 38 billion), being pushed back on the secondary offering priority list by the financial investors.[7] Considering such a low profitability and liquidity, it is understandable that the value of the affiliate stake is discounted by a large gap in the share price.

The decision to merge through division is assessed to offer an opportunity to get the investment stocks revaluated in a fair manner by separating the goodwill and the non-operating assets of the company.[8] The intrinsic value of the spun-off division revaluated after considering both the book value and market price of the investment stocks stood at KRW 7,629, 76% higher than the price for the claims for stock purchase of KRW 4,329 determined based on the company's market value prior to the spin-off. After the merger through division, the Doosan Engine shareholders will be allocated the number of the Doosan HI&C shares corresponding to the value of the investment stocks owned by the company. Therefore, they are offered the option to sell the shares and recover investment funds. If Doosan HI&C merged Doosan Engine without spinning-off, the merger price would have been far more disadvantageous to Doosan Engine shareholders because the baseline stock prices are computed based on the market capitalization of the two companies.[9]

[Table 1] Merger through division ratio for Doosan Engine

Category	Doosan HI&C (merged entity)	Doosan Engine's unit merged through division
A. Baseline market price (KRW)	14,974	-
B. Intrinsic value [(Ax1+Bx1.5)÷2.5] (KRW)	-	7,629
A. Asset value (KRW)	31,794	7,999
B. Earnings value (KRW)	-	7,381
C. Merger price per share (KRW)	14,974	7,629
D. Merger ratio	1	0.5094726
E. Merger through division ratio [division ratio x merger ratio]	1	0.2679522

Source: Registration Statement of Doosan HI&C (April 6, 2018), Korea Corporate Governance Service

7) When the company performed contribution in kind by means of the stake in Doosan Bobcat's overseas subsidiary in Q2 2016 and exchanged it with the stake in Doosan Bobcat, it evaluated Doosan Bobcat at around KRW 52,000 per share (book-value of KRW 616.8 billion). When the IPO price of Doosan Bobcat was confirmed at KRW 30,000 per share in November 2016, the company revaluated the book-value to be KRW 335.4 billion (classifying it as available-for-sale financial assets) and recognized KRW 261.5 billion in impairment loss.

8) As the spun-off unit is no longer a listed company, the baseline market price cannot be calculated as prescribed by the Financial Investment Services and Capital Markets Act. An external agency evaluates its intrinsic value.

9) Then, Doosan HI&C could acquire the stake in Doosan Bobcat at a cheap price, similar to the merger between Samsung C&T and Cheil Industries Inc. in 2015. Back then, Samsung C&T's PBR stood at 0.65 and its market capitalization was far lower than the market prices of the Samsung Electronics and Samsung SDS shares it owned.

[Table 2] Overview of Doosan Engine spin-off

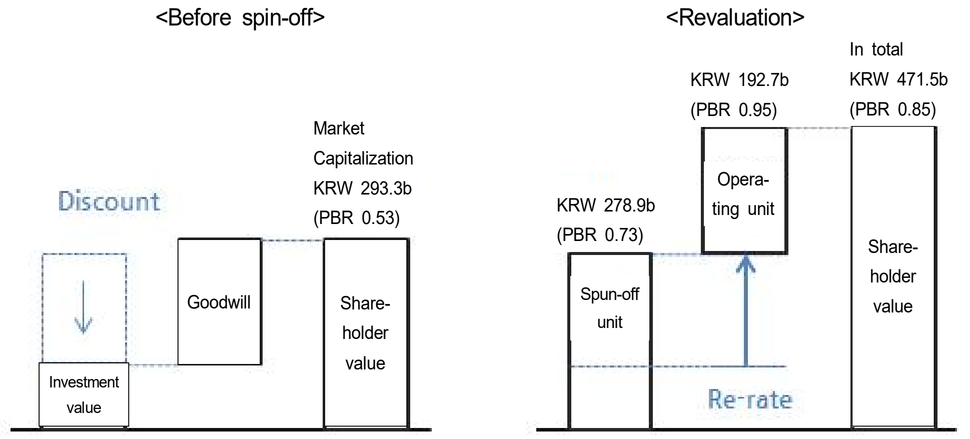
Category	Before	After	
		Spun-off unit (investment)	Doosan Engine (operation)
a. Total assets (KRW b)	556	292.4	263.6
b. Net debt (KRW b)	284.6	135	149.6
c. Spin-off ratio	-	0.5259404	0.4740596
d. No. of shares	69,500,000	36,552,858	32,947,142
e. Share price vs re-estimated value per share (KRW)[Note1)]	4,220	7,629	5,848
f. Market capitalization vs enterprise value conversion (KRW b)[Note2)]	293.3	278.9	192.7
g. PBR (times)	0.53	0.95	0.73
Before/after spin-off (enterprise value, KRW b)	293.3	471.5	
Before/after spin-off (PBR, times)	0.53	0.85	

Note1) The share price and market capitalization before spin-off are based on the closing price of the day before the disclosure (March 13). As for the re-estimated value of the spun-off unit, the intrinsic value, the basis of the merger price, is converted to a per-share price. For revaluation of Doosan Engine, the proceeds coming from the sale of the stake owned by Doosan HI&C (42.66%) or KRW 82.2 billion is converted to a per-share price.

Note2) The enterprise values after the spin-off are computed as the re-estimated value per share (e) multiplied by the number of shares of each unit (d).

Source: Korea Corporate Governance Service

[Figure 3] Revaluation following merger through division and spin-off of Doosan Engine



Source: Korea Corporate Governance Service

2. Addressing risk of supporting poor-performing affiliates of Doosan Group and related party transactions

Under the existing ownership structure of Doosan Group, Doosan Engine is a sub-subsidiary of Doosan Corporation without a high economic stake by the controlling shareholder family. Due to the ownership structure descending from the controlling shareholder to Doosan Corporation, Doosan HI&C, and Doosan Engine, the cash flow rights of the controlling shareholder over Doosan Engine has been diluted leading to a wide divergence between cash flow rights and voting rights. As such, if a controlling shareholder does not own a corporation directly but control it through affiliates, it is highly likely that the controlling shareholder takes advantage of the structure for his private interests.

After the stake is sold off, the Socius-led consortium PEF becomes Doosan Engine's largest shareholder. Considering that the fundamental business model of a PEF is to acquire management control of an undervalued company and enhance its corporate value before selling it off for recovery of investment funds, the changing ownership structure of the company is expected to make the interest of the controlling shareholder more aligned with that of general shareholders. Moreover, as the company shall be separated from Doosan Group, the risk of supporting poor-performing affiliates under the business group and being involved in related party transactions will be addressed as an upside of the separation.

Past supports for Doosan E&C liquidity

The affiliates under Doosan Group have provided financial supports for Doosan E&C, which has been struggling for scant liquidity for years, in a variety of forms including purchasing real estates, acquiring stakes in subsidiaries and participating in capital increase with cash consideration. As Doosan Corporation was a holding company under the local competition law in the past, the support provider was limited to Doosan HI&C, the largest shareholder of Doosan E&C.[10] Since the cancellation of the holding company structure in May 2015, however, affiliates including Doosan Engine have supported Doosan E&C more openly.

As one of the examples, Doosan E&C sold off its 100% stake in Doosan CUVEX, a company running a golf resort, to five listed companies including Doosan Engine in March 2016. In July 2016, Doosan Engine transferred the land and buildings of its factory in Changwon to Doosan E&C, receiving part of the sales price worth KRW 25.2 billion not in cash but in convertible preferred shares (5.3%) as an investment in kind.[11] Back then, Doosan Engine itself was in a poor financial condition posting

10) It is because under the holding company structure subsidiaries are banned from cross-holding and investing in another subsidiary's subsidiary. In 2015, Doosan Group freed itself from the holding company structure by means of increasing the assets owned by its own business unit and lowering its shareholding ratio.

ongoing net losses since 2013 due to the deteriorating market conditions of the shipbuilding industry. Thus, such action of supporting another company is not deemed to be a reasonable capital allocation that is made in the best interest of shareholders.

[Table 3] Doosan Engine's supports for Doosan E&C

Date	Size (KRW b)	Details
Jan 2016	5.3	Purchased land in Bundang-gu, Seongnam from Doosan E&C
Mar 2016	4.2	Purchased stake in Doosan CUVEX, a subsidiary of Doosan E&C
Jul 2016	25.3	Joined Doosan E&C's capital increase through third-party allotment (contribution in kind by means of land, etc.)
May 2017	1.2	Took part in capital increase of DBC, a subsidiary of Doosan E&C

Source: DART, Korea Corporate Governance Service

Purchase transactions with largest shareholder Doosan HI&C

Doosan Engine boasts the world's second highest share in the low-speed marine engine market, and sells mainly to two of the three major shipbuilders in Korea: Samsung Heavy Industries and Daewoo Shipbuilding & Marine Engineering Co. Ltd. The other shipbuilder Hyundai Heavy Industries operates an engine business division under its own wing. Doosan Engine purchases 100% of crankshaft, one of the most expensive lines of the key engine parts, from the foundary & forging business division of its largest shareholder Doosan HI&C. The size of the purchase amounts to around 12% of Doosan Engine's sales cost and 22% of the sales revenue of the foundary and forging business unit of Doosan HI&C.

The transaction where a company (A) with a small economic interest of the controlling shareholder purchases from another company (B) with a relatively high economic interest of the controlling shareholder gives rise to conflicts of interest due to the nature of the ownership structure. In other words, it is highly likely that wealth gets transferred from A to B, ultimately from the ordinary shareholders of company A to the controlling shareholder.[12] Doosan HI&C is the largest shareholder of Doosan Engine and an affiliate where the business group's controlling shareholder has a relatively high cash flow rights. Under this structure, it is only natural to doubt that a transaction would occur in favor of Doosan HI&C. According to the disclosure made by Doosan Group, the two companies trade under a private agreement. In the meantime, while Doosan Engine has set up a Related Party Transactions Committee entirely consisting of independent directors, the disclosure about the Committee's

11) Convertible preferred shares of Doosan E&C, and the stake in Doosan CUVEX and DBC will all be vested in the spun-off unit and merged into Doosan HI&C.

12) In consideration of a high tunneling risk, the Korea Corporate Governance Service regards the above-mentioned type of purchase transaction as the one that supports the largest shareholder and/or related party. Also, taking into account the difference in cash flow rights between the two companies, the agency gives a black mark in its in-depth governance assessment.

activities over the recent three years does not show any records of reviewing and approving transactions with Doosan HI&C.

[Table 4] Transactions between Doosan Engine and Doosan HI&C for recent 3 years

Category	2017	2016	2015
a. Purchase amount (KRW m)	84,397	96,666	86,332
b. Doosan Engine sales cost (KRW m)	710,972	757,414	694,213
a/b (%)	11.9%	12.8%	12.4%
c. Doosan HI&C sales from foundary and forging (KRW m)	371,907	435,790	453,866
a/c (%)	22.7%	22.2%	19.0%
d. Total sales of Doosan HI&C (KRW m)	4,336,699	4,705,321	5,146,294
a/d (%)	1.9%	2.1%	1.7%

Source: DART, Korea Corporate Governance Service

[Table 5] Doosan Engine's Related Party Transactions Committee Activities for recent 3 years

Meeting no.	Date	Agenda	Approval
2018-1	Mar. 29, 2018	To appoint chairperson	Yes
2017-1	Dec. 21, 2017	To approve renewal of the trademark use contract with Doosan Corporation	Yes
2016-1	Mar. 28, 2016	To appoint chairperson	Yes

Note: The committee meeting was not held in 2015
Source: Annual business reports of Doosan Engine, Korea Corporate Governance Service

Addressing risk of transactions supporting affiliates of Doosan Group

If the company is separated from Doosan Group following the stake sale, the risk of being involved in related party transactions will be addressed. Even when Doosan Engine continues to purchase crankshaft from Doosan HI&C, it is not expected that the transaction will be concluded in a condition markedly unfavorable to Doosan Engine. The PEF Socius-led consortium, who will be the new largest shareholder, is believed to have a strong incentive to raise the profit rate through cost saving, etc. and ultimately enhance corporate value.

As shown in <Table 6>, over the recent three years, Doosan Engine posted a markedly low operating profitability compared to de facto its sole competitor Hyundai Heavy Industries's Engine and Machinery Division. Looking at the disclosed data only, it is difficult to conclude that the transaction with the controlling shareholder caused such a gap mentioned above. Still, it is clear that there is a potential to raise profitability by enhancing business efficiency. Management of Doosan Engine is urged to provide information in a transparent manner for shareholders about the conditions of the purchase transaction and the reasons behind the low profitability compared to that of its competitor along with an improvement plan.

[Table 6] Doosan Engine's operating profitability vs. competitor

Category	2017	2016	2015
Doosan Engine sales (KRW m)	761,832	804,680	692,277
Operating P/L (KRW m)	8,259	10,240	-62,951
Operating Profit(%)	1.1%	1.3%	-9.1%
HHI Engine & Machinery Sales (KRW m)	1,606,469	1,932,220	2,538,877
Operating P/L (KRW m)	119,775	258,590	43,406
Operating Profit(%)	7.5%	13.4%	1.7%

Source: Business reports of each company, Korea Corporate Governance Service