

Why do Korean Holding Companies Trade at a Steeper Discount to Net Asset Value?

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Abstract

This case deals primarily with the valuation of holding companies in Korea and the significant gap between its market price and net asset value (NAV), which is the sum of the estimated values of the assets in the portfolio of the holding company minus debt. Typically in the developed markets, holding company discount (as measured by price to NAV minus one) ranges between 15 to 30 percent according to the various empirical studies.

In Korea, however, holding company discount could stretch up to 30 to 60 percent, and often times, 30 to 40 percent has been used as a rule of thumb among the investment community. A steep discount of current market price to NAV might be interpreted as a convincing rationale for investment opportunity, but this could be a dangerous simplification of idea unless underlying reasons are properly understood.

Therefore, the purpose of this case is to understand the valuation of holding companies, especially in the context of capital markets in Korea as compared to other developed markets, and develop a proper sense of investment opportunities therein.

Keywords: Holding company, Net asset value, NAV, Price to NAV, Holding company discount, Spinoff, Arbitrage

1. Introduction

1.1 Holding Company in Korea

Holding company was first introduced in Korea during 1986 as part of the government's attempt to reduce the economic concentration of “*chaebol*”, family-controlled conglomerates in Korea through a complex shareholding structure and cross-subsidization. After the Asian Financial Crisis during 1997-8, holding company structure gained wide popularities to facilitate the corporate restructuring such as spinoff, and the government also eased regulatory restrictions to encourage *chaebol* group's conversion to holding company structure. As a result, number of holding companies in Korea has proliferated from 27 in 2006 to 162 in 2016 by six folds in the past decade. According to the Fair Trade Commission, major conglomerates which converted to holding companies such as SK, LG and CJ have substantially improved the governance structure by eliminating complex cross-shareholding.

The exhibit is shown below the summary of major holding companies in Korea.

Table 1. Summary of major holding companies in Korea

		SK	LG	CJ	GS	LS	Kolon	Seah
Holding Company (HoldCo)	Conversion period	Aug 2015	Apr 2001	Sep 2007	Jul 2004	Jul 2008	Jan 2010	Jul 2001
	Total Asset (KRW Bn)	18,010	8,054	2,979	5,896	2,151	1,067	970
	Debt to Equity	47.1%	3.7%	12.5%	23.3%	23.4%	106.7%	20.8%
Subsidiaries (OpCo)	% held by HoldCo	74.3%	85.6%	89.8%	90.0%	82.8%	81.8%	80.7%
	% held by controlling shareholder (families)	23.2% (30.6%)	10.8% (30.9%)	39.2% (39.3%)	4.7% (44.1%)	0.5% (26.3%)	43.5% (47.2%)	17.7% (79.0%)
	Number of subsidiaries	87	61	66	77	48	42	21
	% of total subsidiaries under Holding Company	78.2%	91.8%	75.8%	49.4%	52.1%	83.3%	76.2%
	% of related party transactions	28.9%	14.1%	15.6%	4.3%	9.9%	6.7%	6.0%

Source: Fair Trade Commission; Company Filings (DART).

1.2 Key Characteristics of Korean Holding Companies

There are broadly two types of holding companies in Korea, depending on whether the company operates its own business or simply owns the shares of subsidiaries for control. SK, for example, generates approximately two thirds of its revenue from its own business, including IT services and distribution of second-hand vehicles. In addition to dividend income from subsidiaries, most holding companies also generate their own revenues from rental of leased properties and brand royalty received from subsidiaries.

The below table shows the revenue proportion of major holding companies in Korea wherever data is available:

Table 2. Revenue breakdown by source of income

% of Total Revenue (9M 2016)	SK	LG	CJ	GS	Seah
Dividend income from subsidiaries	24.5%	50.3%	33.3%	75.8%	83.6%
Brand royalty	6.3%	34.9%	60.7%	14.6%	10.6%
Rental revenue	1.4%	14.7%	5.9%	9.5%	5.9%
Other business	67.8%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Company Filings (DART).

Another interesting characteristic of Korean holding companies can be found by the status of subsidiary companies. In the developed markets, it is common that either holding company or subsidiaries are listed, but not both. In Korea, however, it is very common that both holding company and subsidiaries are listed in public markets. As a result, market value of holding companies are primarily driven by the market price of subsidiaries with time lag, leading to a high correlation of both. This is an inevitable outcome of evolution as to holding company structure in Korea. Holding companies in Korea was mostly created through the spinoff of listed operating subsidiary into two entities, holding company and operating company, followed by re-listing of holding company to increase the ownership of controlling shareholder to strengthen the control. This led to a duplication of listing for both holding company and operating subsidiaries.

This, in turn, created another interesting feature of Korean holding companies with regards to the ownership structure of subsidiaries. Since subsidiaries were already listed in the public market, holding company's stake in subsidiaries should be relatively lower (i.e., typically 30-40% of total outstanding shares) to satisfy the listing requirements of share distribution. This is unlike the holding companies in the developed markets, where they typically own the whole or at least the majority of stake in the subsidiaries for ensuring control.

2. Case Study

2.1 Valuation of Holding Company—An Example of LG Corp

Among various holding companies in Korea, LG Corp (KRX: 003550) is examined to address the issues related to the valuation of holding company. LG Corp was created in 2001 from the conversion into holding company structure, and owns a group of diversified portfolio companies including electronics, chemicals and telecommunications & services. Details of group structure can be found in Appendix. It is the second largest holding company in Korea by asset size, next to SK, and the holding company's role has evolved to developing the growth strategy, monitoring the performance of subsidiaries and managing the portfolio companies as a control tower.

Below is the list of subsidiaries as disclosed in the company filings (for the financial period ended 30 September 2016).

Table 3. Subsidiaries of LG Corp (excerpted from Note 11 of annual filings)

NOTE 11. SUBSIDIARIES				
Category	Major Business Description	Ownership	Book Value¹	Market Cap²
		%	KRW Bn	KRW Bn
Listed Affiliates				
LG Electronics	Electronic materials, computer, display	33.7%	2,804.6	10,146.2
LG Chem	Petrochemical	33.5%	1,278.0	19,660.0
LG U Plus	Mobile communications	36.1%	1,162.0	5,479.5
LG Hausys	Construction materials	33.5%	183.8	959.5
Silicon Works	Semiconductor	33.1%	145.0	491.2
LG Household & Healthcare	Household goods	34.0%	141.6	13,259.8
GIIR	Holding company	35.0%	39.5	142.8
Total			5,754.6	50,139.0
Unlisted Affiliates				
LG CNS	IT System Integration and consulting services	85.0%	330.5	NA
Serveone	Real estate	100.0%	250.1	NA
LG Siltron	Silicon wafer	51.0%	239.6	NA
LG Holdings Japan	Real estate	100.0%	191.1	NA
LG MMA	Chemical	50.0%	115.4	NA
LG Sports	Sports services	100.0%	106.1	NA
LG Life Sciences	Life sciences	30.4%	83.3	NA
LG Full Cell Systems	Fuel cells research and development	15.0%	32.1	NA
Lusem	Electronic materials	68.0%	29.4	NA
LG Economic Research Institute	Management consulting and training	100.0%	17.2	NA
LG Hitachi	Computer system integration services	49.0%	14.0	NA
Total			1,408.7	
Grand Total			7,163.3	
(1) As of 30 September 2016				
(2) Current market capital as of 20 February 2017 (Source: Korea Stock Exchange)				

Source: Company Filings (DART), Note 11. Subsidiaries.

It is noticed that there are many listed subsidiaries which accounted for the majority of book value (80.3% of total), and that their market values, as measured by current market capital, are significantly higher than book value. There are also many related businesses among the subsidiaries, such as electronics, semiconductor and chemicals. Actually, LG's related party transaction as % of total was 14.1%, mainly attributable to the manufacturing of electronic products which is vertically integrated from parts to device within the group companies.

Below table is the excerpt for the key financial information of LG Corp:

Table 4. Key financial information of LG Corp

BALANCE SHEET		Financial Period Ended		
In KRW Bn	Description	30-Sep-16*	31-Dec-15	31-Dec-14
Assets				
Cash and cash equivalent	Includes deposit	204.0	294.1	232.0
Other current assets	Trade and other receivables	33.8	39.2	22.8
Investment in subsidiaries	See Note 11. Subsidiaries	7,163.3	7,151.7	7,053.3
Fixed assets	Land, building and equipment	30.4	27.6	22.3
Investment properties	See Note 9. Investment Properties (below)	797.2	598.5	618.3
Intangible assets	Intellectual property and membership	16.1	13.9	12.7
Other non-current assets	Available for sale securities and other	80.6	83.8	92.4
Total Assets		8,325.5	8,208.8	8,053.8
Liabilities and Equity				
Short term debt	Bank loans - short term	12.9	0.0	0.0
Long term debt	Bank loans - long term	0.0	0.0	0.0
Other liabilities	Taxes payable, deferred taxes, and other	273.8	278.3	284.9
Capital	See Note 15. Capital (below)	879.4	879.4	879.4
Additional Paid in Capital	Includes reserves	2,409.0	2,409.0	2,409.0
Treasury Stock	See Note 15. Capital (below)	(2.4)	(2.4)	(2.4)
Retained Earnings	Includes comprehensive income	4,752.8	4,644.5	4,483.0
Total Liabilities and Equity		8,325.5	8,208.8	8,053.8
INCOME STATEMENT		Financial Period Ended		
In KRW Bn	Description	30-Sep-16*	31-Dec-15	31-Dec-14
Revenue		518.3	574.1	575.7
Dividend from affiliates	Dividend income	260.9	214.4	209.4
Brand royalty	Royalty from affiliates	181.1	256.8	264.9
Rental revenue	Rent from leased properties	76.3	102.8	101.5
Operating Profit		376.4	394.8	417.0
Net Income		339.1	345.9	360.6

Note. * For the nine months ended 30 September 2016 (year-to-date)

Table 5. Investment Properties of LG Corp (excerpted from Note 9 of annual filings)

NOTE 9. INVESTMENT PROPERTIES				
Category	Revaluation Period	Land	Buildings	Total
Book Value	NA	384.8	412.5	797.2
Market value				
Office building #1	March 16, 2012	456.8	343.2	800.0
Office building #2	April 21, 2009	51.0	110.1	161.1
Office building #3	September 30, 2010	145.5	84.5	230.0
Office building #4	June 4, 2013	16.5	1.2	17.8
Office building #5	September 30, 2016	136.8	73.9	210.7
Total: Market Value		806.5	613.0	1,419.6

Source: Company filings (DART)

Table 6. Investment Properties of LG Corp (excerpted from Note 9 of annual filings)

NOTE 15. CAPITAL				
Category	Description	No. of shares '000	Issue price KRW	Capital KRW Bn
Ordinary Stock	Voting share	172,557.0	5,000.0	862.8
Preferred Stock	Non-voting share	3,314.0	5,000.0	16.6
Total: Capital		175,871.0		879.4
Treasury Stock	Includes ordinary and preferred stock	99.8		
Total: Outstanding Shares		175,771.2		
Number of total outstanding shares		175,771.2		
Ordinary Stock	in thousand	172,463.3		
Preferred Stock	in thousand	3,307.9		

Source: Company filings (DART).

2.2 NAV Calculation for LG Corp

Based on information listed above, NAV of LG Corp is estimated based on the sum of the values of listed and unlisted subsidiaries, its own business such as brand royalty and rental revenue, and other balance sheet items. Then NAV per share is calculated to compare with the current market price of LG Corp (KRW 63,300 per share as of 20 February, 2017). For the present value calculation, weighted average cost of capital (WACC) of 10% is assumed as a discount factor.

Exhibit 1. NAV Calculation of LG Corp

Category	Description	KRW bn	Remarks
A. Investment in subsidiaries		18,288.7	
(a) Listed subsidiaries	Current market cap	17,030.1	Sum of market cap x ownership in each subsidiary Assuming no discount See detailed calculation in the exhibit below
(b) Unlisted subsidiaries	Book value	1,258.6	Sum of book value of each subsidiary-if HoldCo owns more than 50% share, 100% of book value is included Otherwise, book value is multiplied by ownership See detailed calculation in the exhibit below
B. Other assets		3,448.0	
(a) Brand royalty	Perpetuity value	2,414.2	Annualized brand royalty revenue (=KRW 181.1 bn x 4/3) x (1+g) / (WACC-g) WACC = 10% (as provided) / g = 0% (assumed)
(b) Rental revenue	Perpetuity value	1,017.7	Annualized brand royalty revenue (=KRW 76.3 bn x 4/3) x (1+g) / (WACC-g) WACC = 10% (as provided) / g = 0% (assumed) Alternatively, market value of "Investment Property" in the Balance Sheet can be used if available
(c) Intangible assets	Book value	16.1	From Balance Sheet
C. Treasury Stock	Book value	2.4	From Balance Sheet
D. Preferred Stock	Book value	16.6	From Balance Sheet
E. Net Debt / (Cash)	Total debt less cash and cash equivalent	-191.1	From Balance Sheet Total debt (KRW 12.9 bn)-cash and equivalent (KRW 204.0 bn) = Net Cash (KRW 191.1 bn)
Net Asset Value (NAV)	= A + B + C + D - E	21,946.8	

Exhibit 2. Calculation of Value of Investment in Subsidiaries

	Ownership	Book Value¹	Market Cap²	Stake Value³
	%	KRW Bn	KRW Bn	KRW Bn
Listed Affiliates				
LG Electronics	33.7%	2,804.6	10,146.2	3,416.2
LG Chem	33.5%	1,278.0	19,660.0	6,592.0
LG U Plus	36.1%	1,162.0	5,479.5	1,975.4
LG Hausys	33.5%	183.8	959.5	321.7
Silicon Works	33.1%	145.0	491.2	162.5
LG Household & Healthcare	34.0%	141.6	13,259.8	4,512.3
GIIR	35.0%	39.5	142.8	50.0
Total		5,754.6	50,139.0	17,030.1
Unlisted Affiliates				
LG CNS	85.0%	330.5	NA	330.5
Serveone	100.0%	250.1	NA	250.1
LG Siltron	51.0%	239.6	NA	239.6
LG Holdings Japan	100.0%	191.1	NA	191.1
LG MMA	50.0%	115.4	NA	57.7
LG Sports	100.0%	106.1	NA	106.1
LG Life Sciences	30.4%	83.3	NA	25.3
LG Full Cell Systems	15.0%	32.1	NA	4.8
Lusem	68.0%	29.4	NA	29.4
LG Economic Research Institute	100.0%	17.2	NA	17.2
LG Hitachi	49.0%	14.0	NA	6.9
Total		1,408.7		1,258.6
Grand Total		7,163.3		18,288.7
(1) As of 30 September 2016				
(2) Current market capital as of 20 February 2017 (Source: Korea Stock Exchange)				
(3) Subsidiaries with more than 50% ownership is valued at full; Subsidiaries with equal or less than 50% ownership is valued by multiplying ownership				

As a result, current market price discount (or premium) to NAV can be calculated as follow:

- 1) NAV per share = NAV (KRW 21,946.8 bn) / # of ordinary shares outstanding (172,463,342)
= KRW 127,254.8 per share
- 2) Current market price = KRW 63,300 per share (as provided in case)
- 3) Discount to NAV = Current price (KRW 63,300) / NAV per share (KRW 127,254.8) - 1 =
-50.3%

This indicates that the current market price is only 0.4-0.5 times of NAV per share, implying 50 to 60 percent discount.

This calculation is repeated for other holding companies in Korea, and the results were not far off. They are trading in the range of 27 to 55 percent to their NAVs, and 3-year historical average was 32 percent discount to NAV for these comparable peers. As compared to this, LG Corp's current discount seems to be indeed offering a decent investment opportunity.

3. Discussion

3.1 Primary Reasons of Holding Company Discount to NAV in Korea—Is It Structural (or Permanent) Issues or Temporary Mispricing in the Market?

Holding company discount to NAV in Korea attributed primarily to structural issues of holding company structure in Korea as following.

First, most of Korean holding companies have major operating subsidiaries also listed in the market. The listing of both holding company and operating subsidiaries creates a duplication issue for investors, meaning that investors can actually invest directly in the operating subsidiaries than holding company. Direct investment in operating subsidiaries offers two advantages. The one is operating subsidiaries are closer to actual cash flow streams. The other is investor's freedom to build their own portfolio companies instead of embracing portfolios already constructed by holding company. Therefore, investors would demand a certain discount for investing in holding company when they have alternative, and often, more attractive investment venue.

Second, holding companies in Korea have relatively lower ownership in major operating subsidiaries, typically 30 to 40 percent as compared to those in developed markets where they have the whole or at least the majority of stake in subsidiaries. According to Korean GAAP, 30 to 40 percent ownership is regarded to construe a control, but in practice, many critical decisions require the majority votes. Therefore, when the holding company wants to implement material decisions such as mergers and acquisitions, spinoff and divesture, they have to secure the majority vote, or incur additional costs for compensation of the minority shareholders who exercise appraisal rights.

Third, holding companies in Korea have relatively low liquidity in the market, due to substantial portion of controlling shareholders (or families). Major conglomerates' conversion into holding company was mainly done by spinoffs of existing entities and re-listing of holding company to increase the ownership of controlling shareholders. As a result, holding companies are mainly controlled by family owners by design, leading to a less liquidity in the market for free floats. Therefore, investors would demand a discount for lower liquidity in the stock market, and this could explain part of Korean holding company discount.

Mainly due to these differences of Korean holding companies as compared to those in the developed markets, they tend to trade at a steeper discount than observed in the U.S. or Europe.

3.2 Korea Discount?

In Korea, there has always been a debate over "Korea Discount", implying that valuation of Korean stocks are lower due to geopolitical issues (such as North Korea), and complex governance issues of Chaebol.

Korea Discount explains part of holding company discount in Korea. Especially, complex governance structure of "chaebol" in Korea has long been criticized as the biggest cause to prevent foreign investments. As a result of conversion to holding companies, major

conglomerates such as SK, LG and CJ have substantially improved the governance issues, and they have a cleaner, more streamlined shareholding structure today. However, there are still more rooms to improve the transparency. First, there are still many subsidiaries outside the umbrella of holding company structure for major conglomerates. For example, SK has 78.2% of subsidiaries under holding company, and CJ has 75.8%. GS and LS have 49.4% and 52.1% of subsidiaries under holding companies, respectively. Second, related party transactions still account for the sizable portion for major conglomerates. This might be an inevitable outcome of vertical integration within the group companies to certain extent, but it could compromise the long term competitiveness of the group as a whole if this is used for subsidizing less competitive subsidiaries.

3.3 Arbitrage Trading Opportunity in the Stock Market

John Greenblatt, a legendary hedge fund manager who runs Gotham Capital achieved 50% average annual return over a 10 year period which spanned from mid 1980s and to the mid 1990s. In his famous book, “You can be a stock market genius”, he advises investors to keep their eyes open to opportunities which do not come out of the ordinary course of business, such as spin-off, business restructuring, bankruptcies, risk arbitrage and mergers which may result in large profits. In spinoffs, for instance, Greenblatt quoted a study that found a very large number of such spin-offs outperformed their industry peers by a surprising 10% per year in the first three years after the spin-off. What is more interesting is that the parents of the spin-offs also outperformed their industry peers by 6% during the same three-year period.

In Korea, most of holding companies have been formed through the spinoffs of existing listed subsidiaries, and there are many candidates preparing for this in the market. Traditionally, the sum of the market cap of two separate entities after spinoffs tends to be greater than that of pre-spinoff entity. This has been the case for Korean holding companies as well—sum of the market cap of holding company (created by spinoff) and operating subsidiary was typically greater than pre-spinoff subsidiary. Therefore, investors can find the best timing for investment throughout the process either 1) upon the announcement of spinoff to create a holding company, 2) equity swap of holding company and operating subsidiary, or 3) rights issue of holding company after re-listing. The primary purpose of creating holding company for controlling shareholders in Korea is to increase their ownership in a clean, holding company structure, so they are less keen on the swap ratio or price. This is a classic textbook example of Greenblatt’s spinoff arbitrage trading explained in his book.

3.4 Key Limitations of NAV Methodology for Holding Company Valuation

NAV is the sum of values of all individual listed and unlisted subsidiaries, other businesses and selective balance sheet items. Therefore, it is not adjusted for intercompany, related party transactions within the group companies, possibly overestimating the value of group as a whole

Also, minority interests of each subsidiaries were not properly accounted for as market value. As a result, NAV as the sum could be overestimated as well.

Value of unlisted subsidiaries were based on book value, and this fails to account for the

future potential. This will become more serious when the proportion of unlisted subsidiaries increase as % of total NAV.

Most notably, NAV is based solely on quantitative measures but fails to capture qualitative assessment of roles and value additions of holding companies. Holding companies are increasingly acting as a control tower for setting up the vision and growth strategy, active portfolio management and synergy creation between group companies. Since the value of operating subsidiaries could be increasingly driven by the role of holding companies, valuation of holding company will also have to be based on this qualitative assessment.

Acknowledgement

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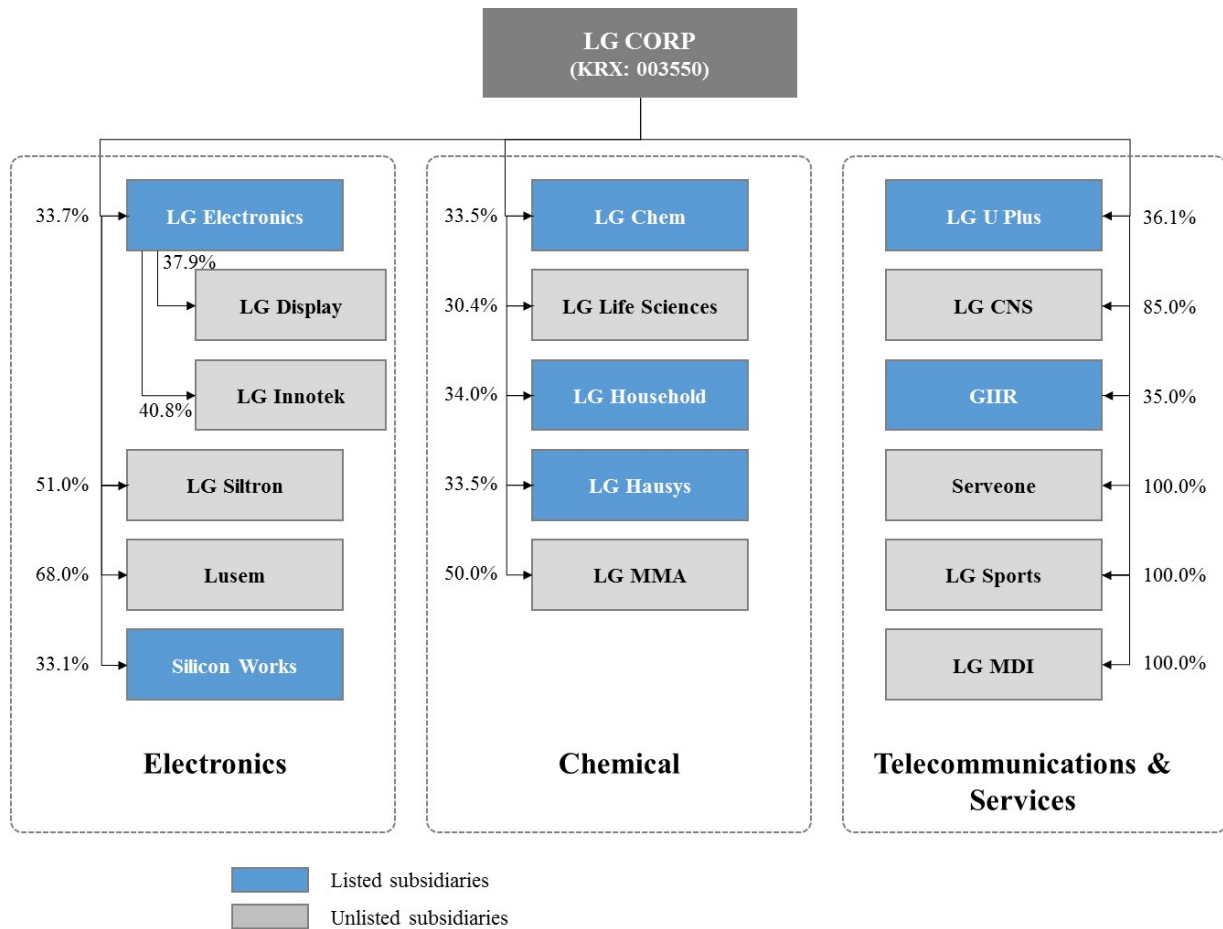
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Appendix A.

LG GROUP STRUCTURE



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