

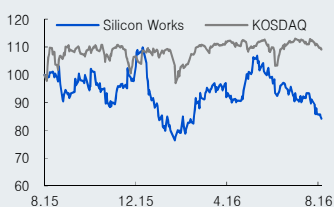
## Technology

Company Update  
August 25, 2016

(Maintain)	<b>Buy</b>
Target Price (12M, W)	<b>42,000</b>
Share Price (8/25/16, W)	29,500
Expected Return	42%

OP (16F, Wbn)	47
Consensus OP (16F, Wbn)	54
EPS Growth (16F, %)	-7.2
Market EPS Growth (16F, %)	20.3
P/E (16F, x)	10.7
Market P/E (16F, x)	10.7
KOSDAQ	683.96
Market Cap (Wbn)	480
Shares Outstanding (mn)	16
Free Float (%)	62.7
Foreign Ownership (%)	34.7
Beta (12M)	0.17
52-Week Low	26,800
52-Week High	38,500

(%)	1M	6M	12M
Absolute	-7.4	6.7	-15.1
Relative	-4.5	0.8	-19.9



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# Silicon Works

## (108320 KQ)

### Positive catalyst: Rising panel prices

#### OP margin moves in line with panel makers' profitability with a time lag

LCD prices have spiked since July. In particular, TV panel prices are expected to rise over 10% in 3Q16. These trends should push up panel makers' margins. Notably, LG Display, Silicon Works' key customer, has reported OP margins below 1% for the most recent three quarters, but should see improvement to the 5% level in 3Q16 on the back of higher panel prices.

Silicon Works supplies semiconductor chips, such as driver-ICs, timing controllers (T-cons), and power management ICs (PMICs) to panel makers. When panel makers suffer margin squeezes, they are inclined to exert downward pricing pressure on Silicon Works. As such, Silicon Works' OP margin moves in line with panel makers' with a time lag <Figure 2>.

The company's OP margin has continued to decline since 3Q15, but we expect it to improve in 4Q16 after bottoming in 3Q16, as panel price hikes eventually lead to better margins for display component suppliers.

#### 2H outlook: Earnings to pick up in 4Q after weakening in 3Q

After reporting better-than-expected 1Q16 earnings, Silicon Works delivered somewhat sluggish 2Q16 earnings. The weak performance was attributable to lackluster sales of COG driver-ICs (used in smartphones). Sales of touch display driver-ICs (TDDIs) are estimated to have been hit by soft sales of the LG G5. In 2H, Silicon Works is unlikely to benefit from seasonally strong demand, due to decreases in notebook PC and monitor panel shipments at customers.

We estimate 3Q16 revenue and operating profit at W148.6bn (-2% QoQ, -7% YoY) and W10.0bn (-9% QoQ, -46% YoY), respectively. Compared to 3Q15, when earnings hit record highs, revenue is likely to fall modestly, and operating profit is expected to plummet. We attribute this largely to 1) customers' decreased shipments of notebook PC and monitor panels as well as 2) increased labor and R&D expenses. We believe earnings will pick up starting in 4Q16.

#### Maintain Buy but Lower TP to W42,000

We keep our Buy call on Silicon Works, but trim our target price by 13% to W42,000 (from W48,000). We revised down our 2016F and 2017F EPS by 14% each in light of weak sales of COG driver-ICs (used in smartphones) as well as customers' reduced shipments of IT panels. In the near term, we believe the stock has bottomed, given that slowing earnings for 2H have been fully priced in and 1.2x P/B represents the meaningful historical bottom. We expect earnings momentum will improve starting in 4Q16. Also, in the medium to long term, we are still upbeat on the growth story for OLED- and automobile-use semiconductors. All in all, our positive view on the stock remains intact.

FY(Dec.)	12/13	12/14	12/15	12/16F	12/17F	12/18F
Revenue (Wbn)	410	391	536	611	686	726
OP (Wbn)	34	36	56	47	64	71
OP margin (%)	8.3	9.2	10.4	7.7	9.3	9.8
NP (Wbn)	32	32	48	45	54	60
EPS (W)	1,970	1,979	2,979	2,764	3,343	3,680
ROE (%)	12.1	11.2	15.0	12.4	13.8	13.7
P/E (x)	12.2	12.6	12.9	10.7	8.8	8.0
P/B (x)	1.4	1.3	1.8	1.3	1.2	1.0

Notes: All figures are based on consolidated K-IFRS; NP refers to net profit attributable to controlling interests  
Source: Company data, Mirae Asset Daewoo Research estimates

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### R&D spending stands at 9% of revenue

Since 2H15, LG Group companies have been increasing their internal sourcing of driver-ICs, T-cons, and PMICs for existing products (smartphones, TVs, etc.). In the medium to long term, Silicon Works, is expected to beef up development to gain competitiveness in future growth areas like OLED, automotive ICs, and IoT. In order to grow its new businesses, the company plans to sharply increase R&D hiring this year. While this is likely to create near-term cost pressures, we see it as a necessary investment from a long-term perspective.

**Table 1. Earnings forecast revisions**

(Wbn, %, %p)

	Previous		Revised		% chg.		Note
	16F	17F	16F	17F	16F	17F	
Revenue	634	709	611	686	-3.6	-3.2	Revised down profitability estimates
Operating profit	58	75	47	64	-18.8	-14.3	
Net profit	52	63	45	54	-13.7	-13.6	
EPS (W)	3,202	3,868	2,764	3,343	-13.7	-13.6	
OP margin	9.1	10.5	7.7	9.3	-1.4	-1.2	
Net margin	8.2	8.9	7.4	7.9	-0.9	-0.9	

Source: Company data, WISEfn, Mirae Asset Daewoo Research estimates

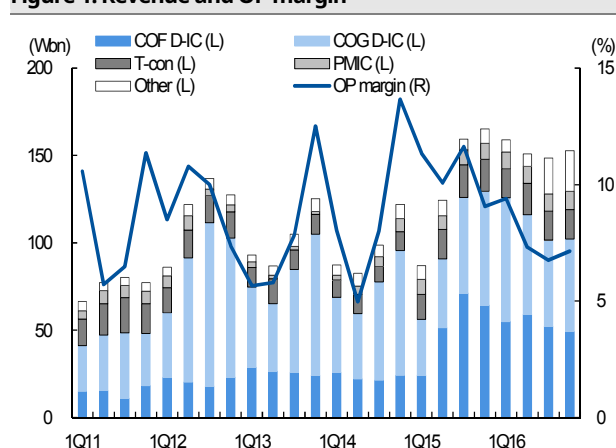
**Table 2. Quarterly and annual earnings**

(Wbn, %)

	1Q16	2Q16	3Q16F	4Q16F	1Q17F	2Q17F	3Q17F	4Q17F	2015	2016F	2017F
Revenue	159	151	149	153	153	169	177	186	536	611	686
COF D-IC	55	59	52	49	51	57	57	53	211	215	217
COG D-IC	71	57	49	53	62	69	64	71	192	230	265
T-con	17	18	17	17	17	19	18	18	68	68	73
PMIC	10	10	10	11	12	12	13	14	34	40	51
Other	7	7	21	23	12	12	26	29	31	58	80
Operating profit	14.9	11.0	10.0	10.9	13.1	17.0	19.7	14.1	55.9	46.9	64.0
OP margin	9.4	7.3	6.8	7.1	8.6	10.1	11.1	7.6	10.4	7.7	9.3
Net profit	15.4	11.2	8.8	9.5	11.3	14.4	16.6	12.1	48.5	45.0	54.4
Net margin	9.7	7.4	5.9	6.2	7.4	8.5	9.3	6.5	9.0	7.4	7.9
<b>(QoQ/YoY)</b>											
Revenue	-3.8	-5.1	-1.5	2.9	0.4	10.5	4.7	4.6	37.2	14.1	12.2
Operating profit	-0.3	-26.2	-8.9	8.7	20.4	29.6	15.7	-28.5	56.7	-16.1	36.3
Net profit	10.4	-27.4	-21.0	7.9	18.7	27.5	14.8	-27.1	49.6	-7.2	20.9

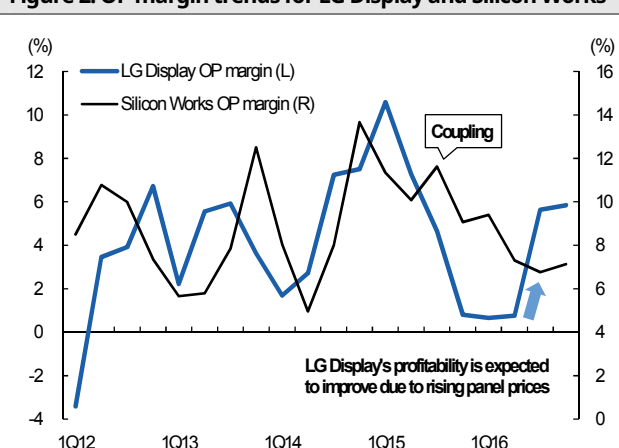
Source: Mirae Asset Daewoo Research estimates

**Figure 1. Revenue and OP margin**



Source: Mirae Asset Daewoo Research

**Figure 2. OP margin trends for LG Display and Silicon Works**



Source: Mirae Asset Daewoo Research

## Silicon Works (108320 KQ/Buy/TP: W42,000)

**Comprehensive Income Statement (Summarized)**

(Wbn)	12/15	12/16F	12/17F	12/18F
<b>Revenue</b>	<b>536</b>	<b>611</b>	<b>686</b>	<b>726</b>
<b>Cost of Sales</b>	<b>423</b>	<b>487</b>	<b>541</b>	<b>568</b>
<b>Gross Profit</b>	<b>113</b>	<b>124</b>	<b>145</b>	<b>158</b>
<b>SG&amp;A Expenses</b>	<b>57</b>	<b>77</b>	<b>81</b>	<b>88</b>
<b>Operating Profit (Adj)</b>	<b>56</b>	<b>47</b>	<b>64</b>	<b>71</b>
<b>Operating Profit</b>	<b>56</b>	<b>47</b>	<b>64</b>	<b>71</b>
<b>Non-Operating Profit</b>	<b>4</b>	<b>7</b>	<b>4</b>	<b>4</b>
Net Financial Income	4	4	4	5
Net Gain from Inv in Associates	0	0	0	0
Pretax Profit	60	54	68	75
Income Tax	12	9	14	15
Profit from Continuing Operations	48	45	54	60
Profit from Discontinued Operations	0	0	0	0
<b>Net Profit</b>	<b>48</b>	<b>45</b>	<b>54</b>	<b>60</b>
Controlling Interests	48	45	54	60
Non-Controlling Interests	0	0	0	0
<b>Total Comprehensive Profit</b>	<b>47</b>	<b>44</b>	<b>54</b>	<b>60</b>
Controlling Interests	47	44	54	60
Non-Controlling Interests	0	0	0	0
EBITDA	70	64	81	86
FCF (Free Cash Flow)	43	50	58	71
EBITDA Margin (%)	13.1	10.5	11.8	11.8
Operating Profit Margin (%)	10.4	7.7	9.3	9.8
Net Profit Margin (%)	9.0	7.4	7.9	8.3

**Cash Flows (Summarized)**

(Wbn)	12/15	12/16F	12/17F	12/18F
Cash Flows from Op Activities	45	51	58	71
Net Profit	48	45	54	60
Non-Cash Income and Expense	24	25	26	25
Depreciation	3	11	13	13
Amortization	11	6	3	2
Others	10	8	10	10
Chg in Working Capital	-20	-13	-13	-4
Chg in AR & Other Receivables	-18	8	-22	-6
Chg in Inventories	-24	4	-12	-3
Chg in AP & Other Payables	15	-6	16	4
<b>Income Tax Paid</b>	<b>-12</b>	<b>-10</b>	<b>-14</b>	<b>-15</b>
Cash Flows from Inv Activities	-8	-1	-1	0
Chg in PP&E	-2	-1	0	0
Chg in Intangible Assets	-9	0	0	0
Chg in Financial Assets	30	0	-1	0
<b>Others</b>	<b>-27</b>	<b>0</b>	<b>0</b>	<b>0</b>
Cash Flows from Fin Activities	3	-16	-16	-15
Chg in Financial Liabilities	0	0	0	0
Chg in Equity	5	0	0	0
Dividends Paid	-10	-16	-16	-15
<b>Others</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>
Increase (Decrease) in Cash	40	49	40	56
Beginning Balance	190	229	279	319
<b>Ending Balance</b>	<b>229</b>	<b>279</b>	<b>319</b>	<b>375</b>

Source: Company data, Mirae Asset Daewoo Research estimates

**Statement of Financial Condition (Summarized)**

(Wbn)	12/15	12/16F	12/17F	12/18F
<b>Current Assets</b>	<b>413</b>	<b>448</b>	<b>524</b>	<b>591</b>
Cash and Cash Equivalents	229	279	319	375
AR & Other Receivables	112	104	126	132
Inventories	60	55	67	70
Other Current Assets	12	10	12	14
<b>Non-Current Assets</b>	<b>50</b>	<b>34</b>	<b>19</b>	<b>4</b>
Investments in Associates	0	0	0	0
Property, Plant and Equipment	15	5	-8	-21
Intangible Assets	23	17	14	12
<b>Total Assets</b>	<b>463</b>	<b>483</b>	<b>543</b>	<b>595</b>
<b>Current Liabilities</b>	<b>110</b>	<b>101</b>	<b>123</b>	<b>129</b>
AP & Other Payables	89	82	100	104
Short-Term Financial Liabilities	0	0	0	0
Other Current Liabilities	21	19	23	25
<b>Non-Current Liabilities</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>7</b>
Long-Term Financial Liabilities	0	0	0	0
Other Non-Current Liabilities	6	5	6	7
<b>Total Liabilities</b>	<b>115</b>	<b>107</b>	<b>130</b>	<b>136</b>
<b>Controlling Interests</b>	<b>348</b>	<b>376</b>	<b>414</b>	<b>459</b>
Capital Stock	8	8	8	8
Capital Surplus	76	76	76	76
Retained Earnings	261	290	328	373
<b>Non-Controlling Interests</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Stockholders' Equity</b>	<b>348</b>	<b>376</b>	<b>414</b>	<b>459</b>

**Forecasts/Valuations (Summarized)**

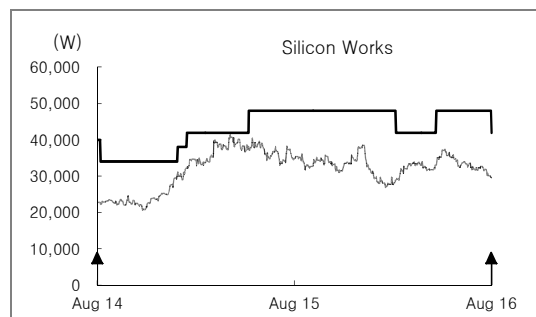
	12/15	12/16F	12/17F	12/18F
P/E (x)	12.9	10.7	8.8	8.0
P/CF (x)	8.6	6.8	6.0	5.7
P/B (x)	1.8	1.3	1.2	1.0
EV/EBITDA (x)	5.6	3.1	2.0	1.2
EPS (W)	2,979	2,764	3,343	3,680
CFPS (W)	4,464	4,314	4,929	5,204
BPS (W)	21,371	23,104	25,447	28,227
DPS (W)	1,000	900	1,100	1,200
Payout ratio (%)	33.6	32.6	32.9	32.6
Dividend Yield (%)	2.6	3.1	3.7	4.1
Revenue Growth (%)	37.1	14.0	12.3	5.8
EBITDA Growth (%)	70.7	-8.6	26.6	6.2
Operating Profit Growth (%)	55.6	-16.1	36.2	10.9
EPS Growth (%)	50.5	-7.2	20.9	10.1
Accounts Receivable Turnover (x)	5.5	5.7	6.0	5.7
Inventory Turnover (x)	12.9	10.7	11.3	10.6
Accounts Payable Turnover (x)	6.0	6.1	6.3	5.9
ROA (%)	11.5	9.5	10.6	10.5
ROE (%)	15.0	12.4	13.8	13.7
ROIC (%)	47.2	37.2	55.1	65.7
Liability to Equity Ratio (%)	33.2	28.4	31.3	29.6
Current Ratio (%)	376.2	441.8	425.9	458.0
Net Debt to Equity Ratio (%)	-66.1	-74.2	-77.1	-81.8
Interest Coverage Ratio (x)	0.0	0.0	0.0	0.0

## APPENDIX 1

### Important Disclosures & Disclaimers

#### 2-Year Rating and Target Price History

Company (Code)	Date	Rating	Target Price
Silicon Works (108320)	08/25/2016	Buy	42,000
	05/15/2016	Buy	48,000
	03/01/2016	Buy	42,000
	06/03/2015	Buy	48,000
	02/08/2015	Buy	42,000
	01/22/2015	Buy	38,000
	09/01/2014	Buy	34,000
	06/02/2014	Buy	40,000



#### Stock Ratings

Buy	: Relative performance of 20% or greater
Trading Buy	: Relative performance of 10% or greater, but with volatility
Hold	: Relative performance of -10% and 10%
Sell	: Relative performance of -10%

#### Industry Ratings

Overweight	: Fundamentals are favorable or improving
Neutral	: Fundamentals are steady without any material changes
Underweight	: Fundamentals are unfavorable or worsening

Ratings and Target Price History (Share price (—), Target price (---), Not covered (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆))

\* Our investment rating is a guide to the relative return of the stock versus the market over the next 12 months.

\* Although it is not part of the official ratings at Mirae Asset Daewoo Co., Ltd., we may call a trading opportunity in case there is a technical or short-term material development.

\* The target price was determined by the research analyst through valuation methods discussed in this report, in part based on the analyst's estimate of future earnings.

\* The achievement of the target price may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

#### Equity Ratings Distribution

Buy	Trading Buy	Hold	Sell
70.73%	17.56%	11.71%	0.00%

\* Based on recommendations in the last 12-months (as of June 30, 2016)

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