

# Silicon Works (108320 KS)

# Shift to OLED TVs & 8K TVs to drive growth in 2019

### BUY (MAINTAIN)

Price (Jan 18) W35,300 **Target Price** W49,000 % variance 38.8%

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KOSPI		2,124.28p			
KOSDAQ		696.34p			
Market Cap.	W574.1bn/ US503.6mn				
Par Value		W500			
Outstanding Shares		16.3mn			
Free Floating Shares	10.9	mn(66.7%)			
52-Week High/Low W56,300/W3					
60-Day Avg. Trading Volu	72,996shrs				
60-Day. Avg. Trading T/0 W2,607r					
Foreign Ownership		37.04%			
Major Shareholders					
LG Corp.	and 2 others	33.22%			
Templeton Asset Mgmt.	and 3 others	5.40%			
Absolute Performance	3M	-3.3%			
	6M	-14.9%			
	12M	-36.6%			
Relative performance	3M	1.6%			
to KOSDAQ	6M	-1.0%			
	12M	-18.3%			

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- 4Q18 operating profit likely exceeded consensus at W22.6bn (+23.6% YoY)
- 2019 operating profit forecast at W82.8bn (+44.2% YoY)
- Retain BUY for a target price of W49,000

### 4Q18 operating profit likely exceeded consensus at W22.6bn (+23.6% YoY)

Silicon Works is expected to have recorded 4Q18 operating profit of W22.6bn (+6.1% QoQ, +23.6% YoY) on sales of W219bn (+2.4% QoQ, +9.7% YoY), exceeding the consensus estimate of W20.2bn. Earnings from LCD TV-use D-IC (driver IC) and T-Con (timing controller) were likely sluggish, with the price of 32-inch LCD TV open cell panels dropping by 11.2% QoQ in 4Q18. However, we believe overall earnings were pulled up by: 1) 13.9% QoQ growth in sales of OLED TV-use T-Con and D-IC; and 2) 5% QoQ increase in OLED TV panel prices.

### 2019 operating profit forecast at W82.8bn (+44.2% YoY)

NHK plans to broadcast the 2020 Tokyo Olympics in 8K (7680x4320), the highest resolution currently available which offers four times the detail of 4K (UHD; 3840x2160). With prices of 8K TV-use D-IC and T-Con set more than 50% higher than 4K TV-use components, the shift to 8K bodes well for Silicon Works.

Operating profit should dip to W12.8bn (-43.3% QoQ, +303.8% YoY) in 1Q19 on weak seasonality for TVs. In 2Q19, however, operating profit should grow 26% QoQ to W16.1bn on solid sales of POLED TV-use D-IC and 8K TV-use D-IC/T-Con. OLED TV panel output at LG Display is forecast to grow 48.3% YoY to 4.74mn on the ramp-up of a new OLED line in Guangzhou, China, in 2H19. As a result, we expect Silicon Works to post record-high earnings for full-year 2019 at sales of W927bn (+19.7% YoY) and operating profit of W82.8bn (+44.2% YoY).

### Retain BUY for a target price of W49,000

We retain our BUY rating and target price of W49,000 for Silicon Works, based on 2019 forecasts for: 1) 48.3% YoY increase in OLED TV panel output; and 2) 44.2% YoY growth in the company's operating profit to W82.8bn. Shares corrected in 4Q18 in reflection of the steep downtrend in LCD TV panel prices, but now look attractive for investment ahead of the upturn in panel prices expected in April 2019. Silicon Works shares are currently trading under the past seven-year average PER of 11.7x at a 2019F PER of 8.4x.

Year to Dec.	Sales	OP	Pre-tax	NP	EPS	Growth	BPS	PER	EV/EBITDA	PBR	ROE	Net Debt
	(W bn)	(W bn)	(W bn)	(W bn)	(Won)	(%)	(Won)	(X)	(X)	(X)	(%)	Ratio (%)
2016	610.0	50.6	58.0	50.7	3,116	4.6	23,406	8.9	3.1	1.2	13.9	(69.1)
2017	692.8	45.5	48.4	47.1	2,894	(7.1)	25,345	18.3	11.5	2.1	11.9	(66.7)
2018F	774.8	57.4	61.7	52.5	3,225	11.5	27,871	10.9	4.2	1.3	12.1	(66.7)
2019F	927.0	82.8	86.7	68.5	4,210	30.5	31,380	8.4	2.4	1.1	14.2	(69.6)
2020F	981.0	89.6	95.3	75.3	4,629	10.0	35,309	7.6	1.5	1.0	13.9	(73.3)

Source: Company data, Shinhan Investment Corp.











Target price calculation									
	Value	Remarks							
2019F ROE (%)	14.2								
2019F EPS (KRW)	4,210								
Target PER (x)	11.7	7-year average PER of 11.7x							
Target price (KRW)	49,000								

Source: Shinhan Investment Corp.

PER, ROE and EPS trend										
(x)	2012	2013	2014	2015	2016	2017	2018	Average		
PER (high)	14.5	13.1	15.1	14.1	12.5	20.6	17.5	13.4		
PER (low)	8.3	9.8	10.3	8.3	8.0	9.6	10.0	8.0		
PER (average)	11.4	11.4	11.9	11.7	9.8	13.1	12.8	10.3		
ROE (%)	17.3	12.1	11.2	15.0	13.9	11.9	12.1	11.7		
EPS (KRW)	2,529	1,970	1,979	2,979	3,116	2,894	3,225	2,336.3		

Source: QuantiWise, Shinhan Investment Corp.

Valuation of display-use non-memory semiconductor peers based on consensus											
	Market cap.		2	019F (x)		2020F (x)					
	(bn USD)	PER	PBR	EV/EBITDA	ROE (%)	PER	PBR	EV/EBITDA	ROE (%)		
Renesas	8.8	9.9	1.3	4.6	14.3	9.8	1.2	4.9	10.7		
Novatek	3.0	13.6	2.9	8.5	21.6	12.5	2.7	8.0	22.2		
Synaptics	1.3	8.2	1.8	6.5	23.4	8.1	1.6	6.2	21.8		
Parade Tech	1.3	16.6	3.5	12.0	22.8	13.4	2.9	9.9	24.1		
Himax	0.6	23.9	1.3	12.6	10.4	10.1	1.3	8.6	14.2		
Silicon Works	0.5	8.5	1.1	4.6	14.2	7.4	1.0	4.0	14.5		
MagnaChip Semiconductor	0.2	14.6	-	5.1	-	7.1	-	-	-		
Sitronix	0.4	13.3	2.7	6.8	15.4	-	-	-	-		
Focal Tech	0.2	16.0	0.6	10.7	2.5	12.5	0.6	5.9	4.1		

Source: Bloomberg, Shinhan Investment Corp.



Source: QuantiWise, Shinhan Investment Corp

# Relative share performance of Silicon Works and LG Display (%, 01/01/18=0) Silicon Works LG Display (10) (20) (30) (40) (50)

01/18 02/18 03/18 04/18 05/18 06/18 07/18 08/18 09/18 10/18 11/18 12/18 01/19

Source: QuantiWise, Shinhan Investment Corp.

4Q18 preview									
(bn KRW)	4Q18F	3Q18	QoQ (%)	4Q17	YoY (%)	Consensus	Gap (%)	Previous	Gap (%)
Sales	219.0	213.9	2.4	199.7	9.7	224.1	(2.3)	230.0	(4.8)
OP	22.6	21.3	6.1	18.3	23.6	20.2	11.7	19.6	15.1
NP	19.9	17.7	12.4	24.0	(17.3)	18.7	6.3	17.4	14.2
OPM (%)	10.3	9.9		9.1		9.0		8.5	
NPM (%)	9.1	8.3		12.0		8.3		7.6	

Source: Company data, Shinhan Investment Corp

Earnings trend and	outlook											
(bn KRW)	1Q18	2Q18	<b>3Q18</b>	4Q18F	1Q19F	2Q19F	3Q19F	4Q19F	2017	2018F	2019F	2020F
Sales	162.2	179.7	213.9	219.0	191.0	215.0	252.0	269.0	692.8	774.8	927.0	981.0
Large D-IC	113.8	116.8	124.1	124.8	109.6	122.6	146.2	158.7	441.4	479.5	537.1	565.8
Small D-IC	24.9	35.9	51.3	52.6	47.8	49.5	58.0	61.9	143.6	164.7	217.0	236.0
SoC	22.6	21.6	36.4	37.2	31.5	40.9	45.4	45.7	94.0	117.7	163.5	169.4
Others	0.9	5.4	2.1	4.4	2.1	2.2	2.5	2.7	13.7	12.8	9.5	9.8
OP .	3.2	10.5	21.2	22.6	12.8	16.1	26.5	27.4	45.5	57.4	82.8	89.6
Pre-tax profit	4.6	10.8	22.7	23.7	14.3	17.6	28.4	26.4	48.4	61.7	86.7	95.3
NP	6.1	8.7	17.7	19.9	11.8	14.6	23.4	18.7	47.1	52.5	68.5	75.3
OPM (%)	2.0	5.8	9.9	10.3	6.7	7.5	10.5	10.2	6.6	7.4	8.9	9.1
Pre-tax margin (%)	2.8	6.0	10.6	10.8	7.5	8.2	11.3	9.8	7.0	8.0	9.3	9.7
NPM (%)	3.8	4.9	8.3	9.1	6.2	6.8	9.3	7.0	6.8	6.8	7.4	7.7
Sales growth (% YoY)	2.4	16.5	18.5	9.7	17.8	19.6	17.8	22.8	13.6	11.8	19.7	5.8
Large D-IC	19.8	11.3	4.5	1.7	(3.7)	4.9	17.8	27.1	12.5	8.6	12.0	5.4
Small D-IC	(31.8)	46.2	43.8	12.1	92.0	37.6	12.9	17.7	88.4	14.7	31.8	8.7
SoC	(10.7)	(4.7)	50.8	69.6	39.6	89.4	24.7	22.8	(25.2)	25.3	38.8	3.6
Others	(44.0)	161.3	5.2	(45.9)	143.1	(60.1)	17.8	(38.6)	(12.5)	(7.0)	(25.9)	3.7
OP growth (% YoY)	(41.7)	61.2	38.4	23.6	303.8	53.6	24.8	21.6	(10.1)	26.2	44.2	8.2
Pre-tax profit growth (% YoY)	(30.5)	78.5	39.8	21.4	211.8	63.4	25.4	11.4	(16.7)	27.6	40.4	10.0
NP growth (% YoY)	(36.0)	56.1	39.1	24.6	228.9	48.6	23.7	20.9	(7.1)	11.5	30.5	10.0

Source: Company data, Shinhan Investment Corp.

### **Balance Sheet**

Year to Dec. (W bn)	2016	2017	2018F	2019F	2020F
Assets	486.0	544.3	587.3	653.0	722.6
Total Current Assets	440.5	497.7	541.8	608.5	680.1
Cash and Cash Equivalents	262.9	74.7	78.5	87.3	137.7
Accounts Receivables	110.9	140.0	145.0	150.0	152.0
Inventories	58.3	61.0	70.0	74.0	76.0
Non-Current Assets	45.5	46.5	45.5	44.5	42.5
Tangible Assets	15.3	15.2	15.6	15.6	15.2
Intangible Assets	17.1	17.7	15.7	13.7	11.7
Investment Assets	3.7	4.8	5.3	6.4	6.8
Other Financial Institutions Assets	0.0	0.0	0.0	0.0	0.0
Liabilities	105.3	132.1	134.0	142.6	148.4
Current Liabilities	100.3	129.4	131.0	139.0	144.5
ST Borrowings	0.0	0.0	0.0	0.0	0.0
Account Payables	70.3	97.2	95.0	96.0	99.0
Current Portion of LT Debt	0.0	0.0	0.0	0.0	0.0
Non-Current Liabilities	5.0	2.7	3.0	3.6	3.8
Bonds	0.0	0.0	0.0	0.0	0.0
LT Borrowings(incl. LT Fin. Liab.)	0.0	0.0	0.0	0.0	0.0
Other Financial Institutions Liab.	0.0	0.0	0.0	0.0	0.0
Shareholders' Equity	380.7	412.2	453.3	510.4	574.3
Capital Stock	8.1	8.1	8.1	8.1	8.1
Capital Surplus	76.3	76.3	76.3	76.3	76.3
Other Reserves	0.0	0.0	0.0	0.0	0.0
Accu. Other Comp. Income	1.5	1.6	1.6	1.6	1.6
Retained Earnings	294.7	326.1	367.2	424.3	488.2
Owners of Parent Equity	380.7	412.2	453.3	510.4	574.3
Non-Controlling Interests Equity	0.0	0.0	0.0	0.0	0.0
*Total Debt	0.0	0.0	0.0	0.0	0.0
*Net Debts(Cash)	(263.0)	(274.9)	(302.3)	(355.2)	(421.1)

### **Profit and Loss**

Trotte and Loss					
Year to Dec. (W bn)	2016	2017	2018F	2019F	2020F
Sales	610.0	692.8	774.8	927.0	981.0
Growth (%)	13.8	13.6	11.8	19.7	5.8
COGS	479.7	540.4	576.8	690.4	734.8
Gross Profit	130.4	152.4	198.0	236.6	246.2
Gross margin (%)	21.4	22.0	25.6	25.5	25.1
SG&A	79.8	106.9	140.5	153.8	156.6
Operating Income	50.6	45.5	57.4	82.8	89.6
Growth (%)	(9.4)	(10.1)	26.2	44.2	8.2
Operating margin (%)	8.3	6.6	7.4	8.9	9.1
Other Net Non-Operating Profits	7.4	2.8	4.3	3.8	5.7
Financial Income(Expenses)	7.5	3.7	4.0	4.6	5.4
Net Other Non-Operating Profits	(0.0)	(8.0)	0.3	(0.7)	0.3
Net Gains in Asso., Subs., and JVs	0.0	0.0	0.0	0.0	0.0
Pre-tax Profit from Cont. Op.	58.0	48.4	61.7	86.7	95.3
Income Taxes	7.3	1.3	9.3	18.2	20.0
Profit from Continuing Op.	50.7	47.1	52.5	68.5	75.3
Profit from Discontinued Op.	0.0	0.0	0.0	0.0	0.0
Net Profit	50.7	47.1	52.5	68.5	75.3
Growth (%)	4.6	(7.1)	11.5	30.5	10.0
Net Profit margin (%)	8.3	6.8	6.8	7.4	7.7
Net Profit of Parent	50.7	47.1	52.5	68.5	75.3
Net Profit to Non-Controlling	0.0	0.0	0.0	0.0	0.0
Total Comprehensive Income	49.4	46.2	52.5	68.5	75.3
Total Comp. Income of Parent	49.4	46.2	52.5	68.5	75.3
Total Comp. Income to Non-Cont.	0.0	0.0	0.0	0.0	0.0
EBITDA	60.2	50.9	64.1	90.8	99.0
Growth (%)	(14.3)	(15.4)	25.8	41.8	9.0
EBITDA Margin (%)	9.9	7.4	8.3	9.8	10.1

Note: Operating profit is based on 2012 K-IFRS (gross profit - SG&A costs)

### **Cash Flow**

Year to Dec. (W bn)	2016	2017	2018F	2019F	2020F
Operating Cash Flow	49.0	32.5	44.3	71.3	84.6
Net Profit	50.7	47.1	52.5	68.5	75.3
Depreciation	2.7	2.9	4.6	6.0	7.4
Amortization	6.9	2.5	2.0	2.0	2.0
Losses(Gains) on F/X Translation	0.3	0.3	0.0	0.0	0.0
Losses(Gains) on Disp. of Assets	0.0	(0.1)	(0.1)	(0.1)	(0.1)
Losses(Gains) in Asso, Subs., JVs	0.0	0.0	0.0	0.0	0.0
Chg. in A/L from Op. Activities	(17.0)	(14.8)	(14.7)	(5.2)	0.0
(Payments of Income Taxes)	(8.9)	(11.9)	(9.3)	(18.2)	(20.0)
Others	14.3	6.5	9.3	18.3	20.0
Investing Cash Flow	0.6	(205.9)	(29.3)	(51.0)	(23.0)
Incr. in Tangible Assets(CAPEX)	(3.2)	(3.0)	(5.0)	(6.0)	(7.0)
Decr. in Tangible Assets	0.0	0.3	0.0	0.0	0.0
Decr.(Incr.) in Intangible Assets	(0.4)	(1.9)	0.0	0.0	0.0
Decr.(Incr.) in Investment Assets	5.2	0.3	(0.6)	(1.1)	(0.4)
Others	(1.0)	(201.6)	(23.7)	(43.9)	(15.6)
Free Cash Flow	42.8	31.2	34.9	60.8	72.7
Financing Cash Flow	(16.3)	(14.6)	(11.4)	(11.4)	(11.4)
Incr.(Decr.) in Borrowing	0.0	0.0	0.0	0.0	0.0
Decr.(Incr.) of Treasury Stock	0.0	0.0	0.0	0.0	0.0
Dividend	(16.3)	(14.6)	(11.4)	(11.4)	(11.4)
Others	0.0	0.0	0.0	0.0	0.0
Other Cash Flows	0.0	0.0	0.0	0.1	0.0
Change of Consolidated Scope	0.0	0.0	0.0	0.0	0.0
Difference by Chg. in F/X Rates	(0.0)	(0.1)	0.0	0.0	0.0
Incr.(Decr.) in Cash	33.4	(188.2)	3.7	8.9	50.3
Beginning Cash	229.5	262.9	74.7	78.4	87.3
Ending Cash	262.9	74.7	78.4	87.3	137.6

Source: Company data, Shinhan Investment Corp.

### **Key Ratios**

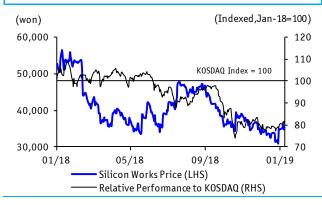
NCy Natios					
Year to Dec.	2016	2017	2018F	2019F	2020F
EPS_C (won)	3,116	2,894	3,225	4,210	4,629
EPS_P (won)	3,116	2,894	3,225	4,210	4,629
BPS_C (won)	23,406	25,345	27,871	31,380	35,309
BPS_P (won)	23,406	25,345	27,871	31,380	35,309
DPS (won)	900	700	700	700	700
PER_C (x)	8.9	18.3	10.9	8.4	7.6
PER_P (x)	8.9	18.3	10.9	8.4	7.6
PBR_C (x)	1.2	2.1	1.3	1.1	1.0
PBR_P (x)	1.2	2.1	1.3	1.1	1.0
EV/EBITDA (x)	3.1	11.5	4.2	2.4	1.5
Payout Ratio (%)	28.9	24.2	21.7	16.6	15.1
Dividend Yield (%)	3.2	1.3	2.0	2.0	2.0
Profitability					
EBITDA Margin (%)	9.9	7.4	8.3	9.8	10.1
OP Margin (%)	8.3	6.6	7.4	8.9	9.1
NP Margin (%)	8.3	6.8	6.8	7.4	7.7
ROA (%)	10.7	9.1	9.3	11.0	10.9
ROE (%)	13.9	11.9	12.1	14.2	13.9
ROIC (%)	37.6	36.8	35.5	44.6	47.8
Stability					
D/E Ratio (%)	27.7	32.0	29.6	27.9	25.8
Net Debt to Equity (%)	(69.1)	(66.7)	(66.7)	(69.6)	(73.3)
Cash Ratio (%)	262.1	57.8	59.9	62.8	95.3
Interest Coverage (x)	N/A	N/A	N/A	N/A	N/A
Activity (%)					
Working Capital Turnover (t)	7.8	7.7	7.4	8.0	8.2
Inventory Turnover (d)	35.2	31.4	30.9	28.3	27.9
Receivable Turnover (d)	66.3	66.1	67.1	58.1	56.2
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Source: Company data, Shinhan Investment Corp.



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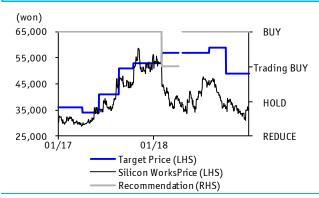
### Share Price Performance





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### **Target Price**



Date	Recommendation	Target Price	Target Pric	e Gap (%)
		(won)	Average	Max/Min
2017.04.25	BUY	34,000	(6.3)	5.6
2017.06.27	BUY	41,000	(8.0)	14.6
2017.09.11	BUY	51,000	(10.9)	(5.8)
2017.11.05	BUY	53,000	(0.6)	10.9
2018.02.21	Trading BUY	57,000	(30.2)	(21.5)
2018.04.27		No Coverage	-	-
2018.05.11	BUY	57,000	(29.5)	(16.2)
2018.08.21	BUY	59,000	(28.9)	(20.0)
2018.10.24	BUY	49,000	-	-

Note: Calculation of target price gap based on the past 6 months

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Stock

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### SHIC Rating Classifications (As of Apr. 1, 2017)

### BUY: Expected return of over +10% in the next 6 months

- ◆ Trading BUY: Expected return of -10% ~ +10% in the next 6 months
- HOLD: Expected return of -20% ~ -10% in the next 6 months
- REDUCE: Expected return of below -20% in the next 6 months
- OVERWEIGHT: Prevalence of BUY rating for stocks in our sector coverage universe based on market cap
- NEUTRAL: Prevalence of HOLD rating for stocks in our sector coverage universe based on market cap
- UNDERWEIGHT: Prevalence of REDUCE rating for stocks in our sector coverage universe based on market cap

## CUTC Universe Dating Classification Datin /as of lan

SHIC Universe Rating Classification Ratio (as of Jan. 18, 2019)							
BUY (BUY)	96.31%	Trading BUY (HOLD)	1.84%	HOLD (HOLD)	1.84%	REDUCE (SELL)	0%