Results for Second Quarter of FY2016 (Ended June 30, 2016)

August 5, 2016
SUMCO Corporation
（Code：3436）

Notes Regarding the Forecasts

This material is prepared for the purpose of continuous disclosure to general shareholders and investors and will not constitute an offer or solicitation of securities of the Company in any states or jurisdictions.

The estimate, expectation, forecast and other future information is prepared based on the information which is available for the Company as of today and on certain assumptions and qualifications (which includes our subjective judgment) and the actual financial performance or result may be substantially different from such future information contained in the material due to risk factors including domestic and global economic conditions, trend of semiconductor market and foreign exchanges.



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Summary and Market Environment

Mayuki Hashimoto
Representative Director,
Chairman & CEO

1-1. Summary

2Q-2016 Consolidated Business Results

(Billions of Yen)

	1Q-2016 Actual	2Q-2016 Actual	Change
Net Sales	51.7	51.5	(0.2)
Operating Income	3.6	2.5	(1.1)
Ordinary Income	2.6	1.7	(0.9)
Net Income (Note1)	1.5	0.8	(0.7)
Exchange Rate (Yen/US$)	118.3	111.1	(7.2)

FY2016 Interim Dividend: 5 yen per share

3Q-2016 Consolidated Business Forecasts

(Billions of Yen)

	2Q-2016 Actual	3Q-2016 Forecast	Change
Net Sales	51.5	51.0	(0.5)
Operating Income	2.5	2.0	(0.5)
Ordinary Income	1.7	1.0	(0.7)
Net Income (Note1)	0.8	0.5	(0.3)
Exchange Rate (Yen/US$)	111.1	105.0	(6.1)

(Note 1) Net income attributable to owners of the parent

1-2. Market Environment

2Q-2016

✔ 300mm:

- EW: Demand rebound with end to inventory adjustment in smartphone market, began recovering mainly for foundries, despite continued PC and tablet sluggishness
- PW: Firm demand, with growth for data centers and enlarge memory capacity for smartphone

✔ 200mm and smaller:

Automobile-related demand solid; gradual recovery for consumer and industrial applications

3Q-2016 OUTLOOK

✔ 300mm:

- EW: Rapid demand recovery, with end of China's smartphone inventory adjustment, advances in application processors, and demand for rational management of inventory
- PW: Demand to remain firm chiefly for memory

✔ 200mm and smaller:

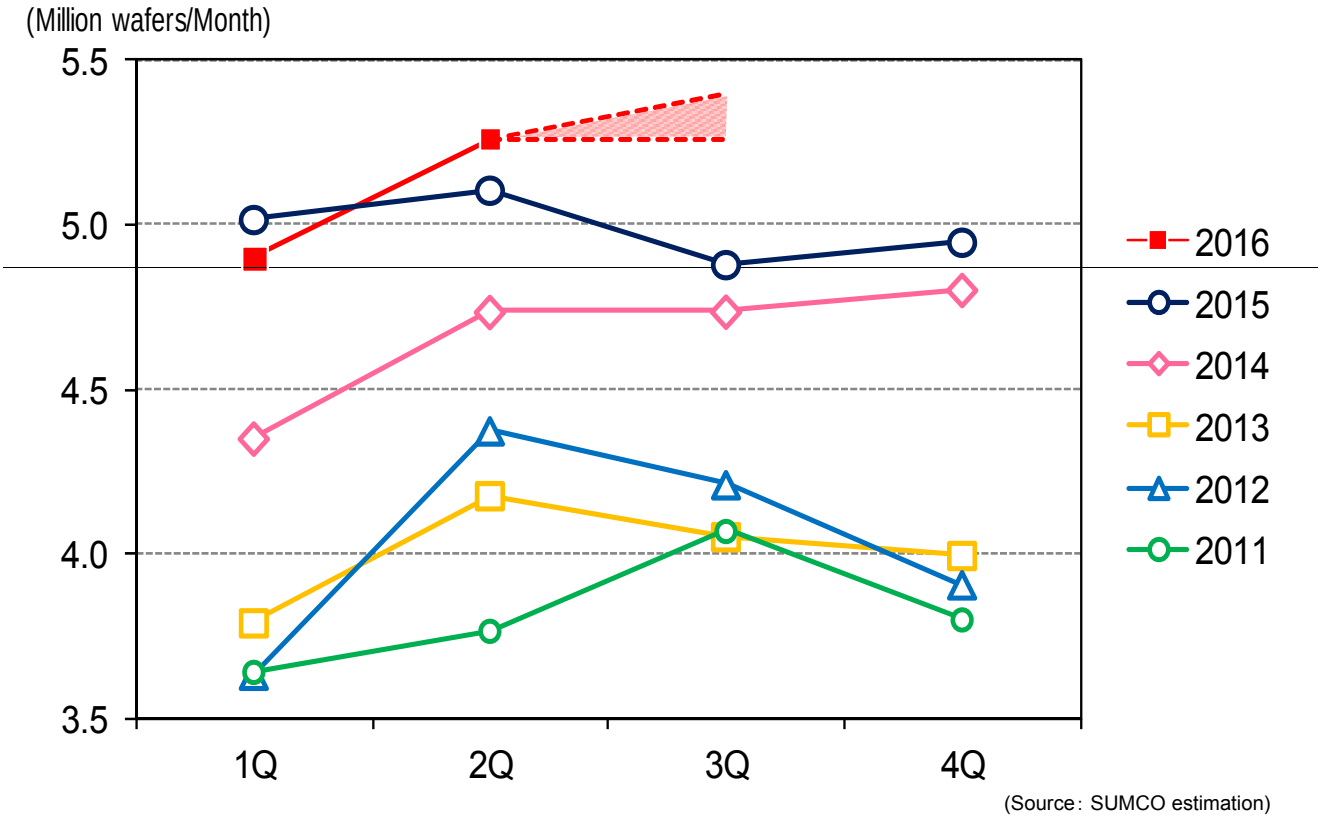
Continued gradual recovery, mainly for automobiles

OTHERS

✔ The weakening of prices centered primarily on 300 mm EW has essentially subsided

✔ Concern about lower net income due to strong yen

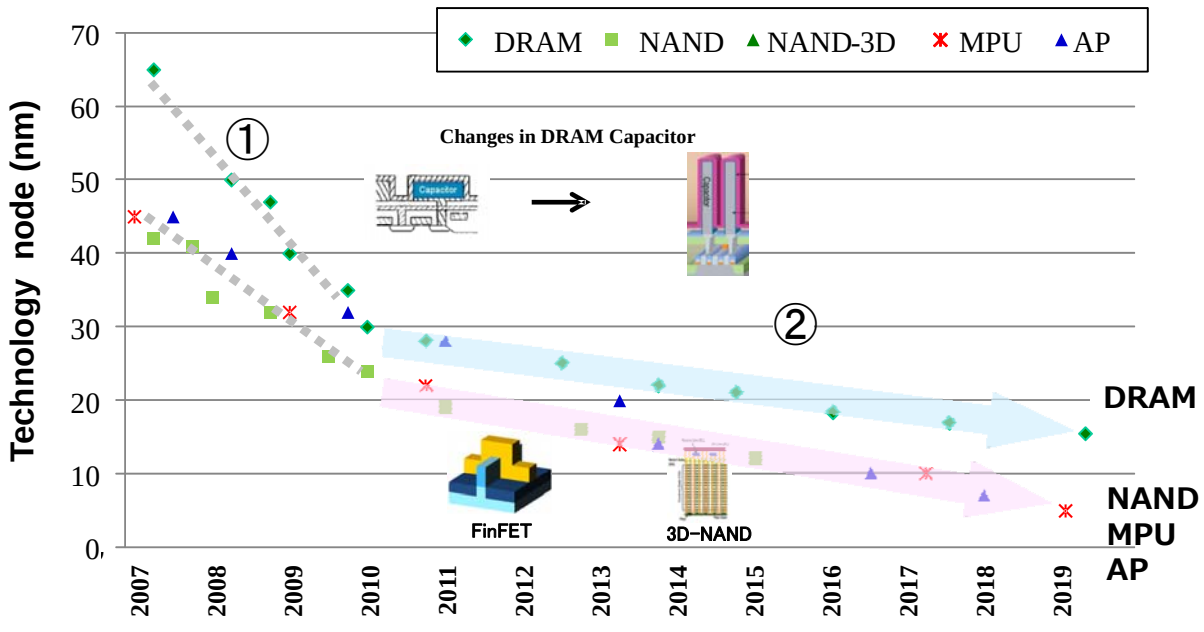
2-1. 300mm Wafer Trend Forecast



(Source: SUMCO estimation)

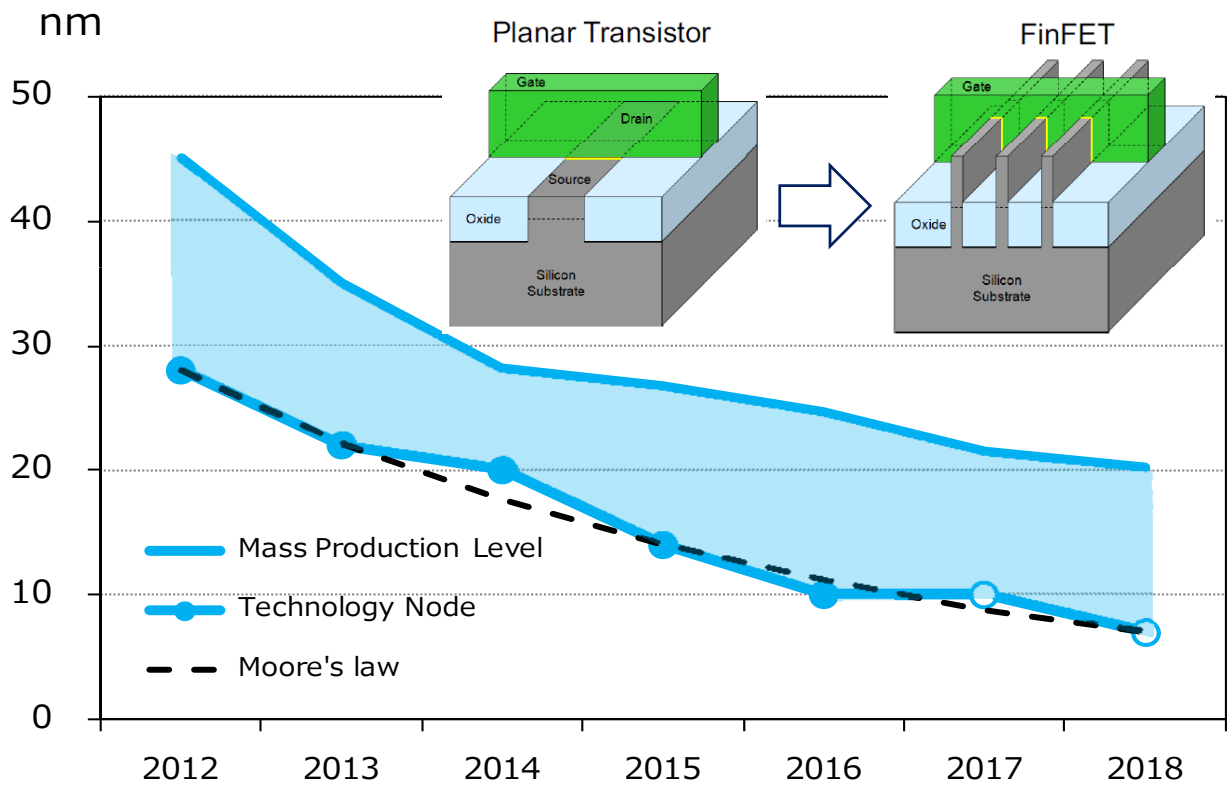
3-1. Scaling

① Scaling is led by progress of Lithography Technology
② Scaling started to slow down
- Cost and mass production technique of multiple patterning
- Delay of EUV Lithography Technology



(Source: SUMCO estimation based on research reports)

3-2. Scaling Technology for MPU/AP

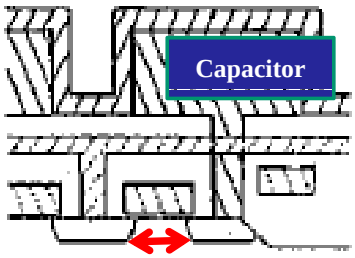


(Source: SUMCO estimation based on research reports)

3-3. Scaling Technology for DRAM

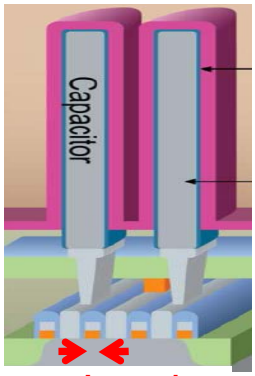
Device	2014	2015	2016	2017	2018
Node Range	30	25 nm	20 nm	18 nm	16 nm
Lithography	ArFi	ArF immersion DP		ArF immersion QP	

Former DRAM Capacitor



<Design Rule>

Current DRAM (Leading-Edge) Capacitor



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✓ Capacitor Formation becomes harder every technology

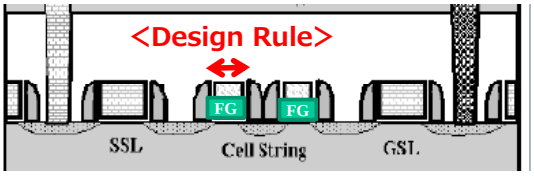
Capacitor Aspect Ratio is over 50 (sharp pillar shape) for securing of capacity

(Source: SUMCO estimation based on research reports)

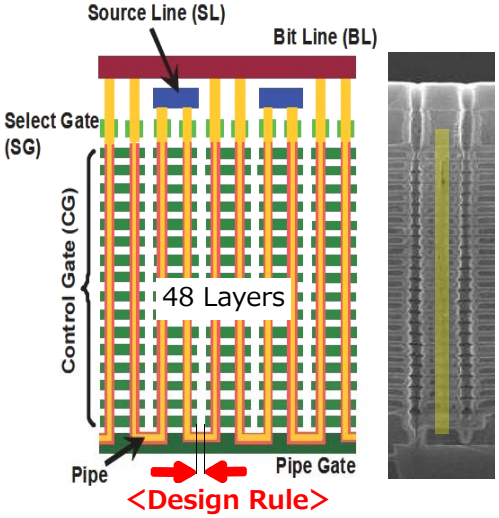
3-4. NAND: 2D Scaling and Transition to 3D

Device	2014	2015	2016	2017	2018
Node Range	19nm	16 nm	16 nm	13 - 12 nm	
		3D NAND / 32L	3D NAND / 48L ・・・・・・・ Approx. 100L		
Lithography	DP	ArF immersion QP			

Structure of 2D(Floating Gate)



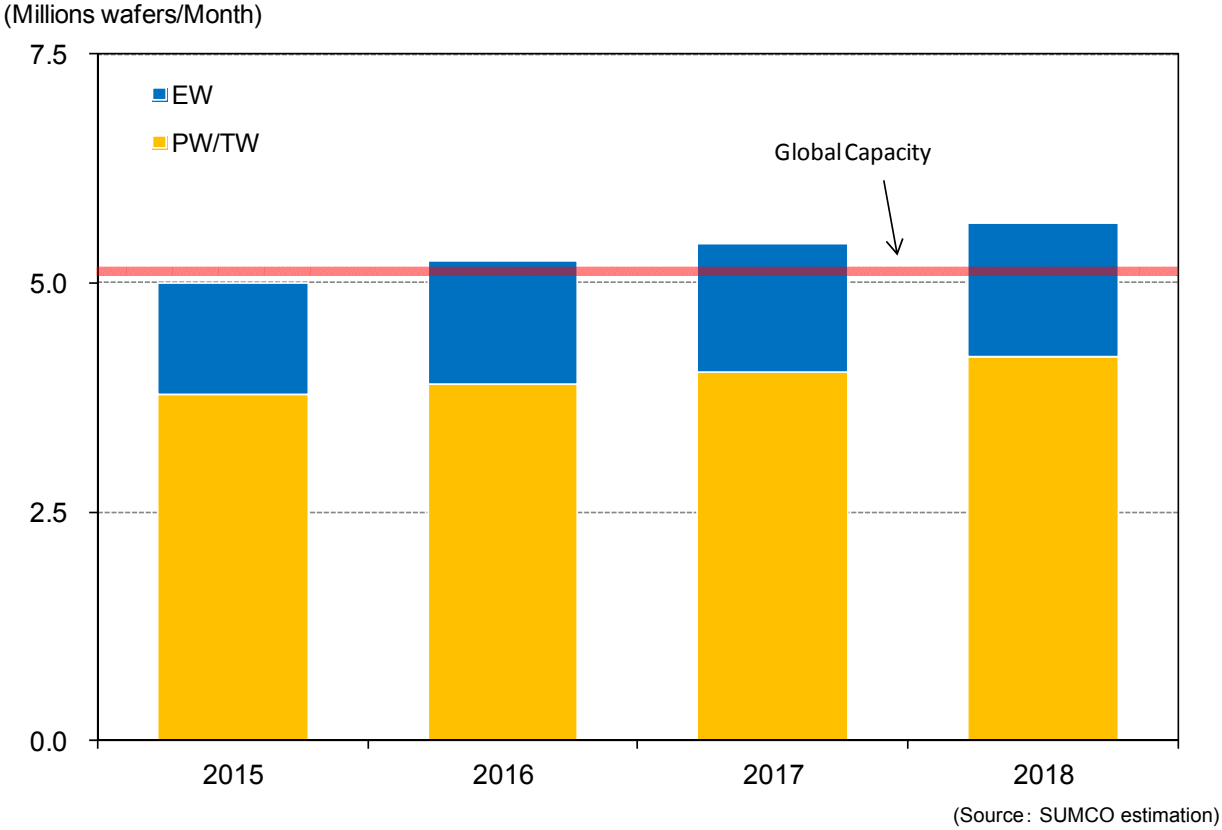
Structure of 3D-NAND



- ✓ Scaling of 2D
  - ・12nm : Large Interference between memory cell (decreasing electric charge)
- ✓ Transition to 3D
  - ・ Cost Increase (multiple of Litho. & Etching)
  - ・ Cost Down (number of Layers)

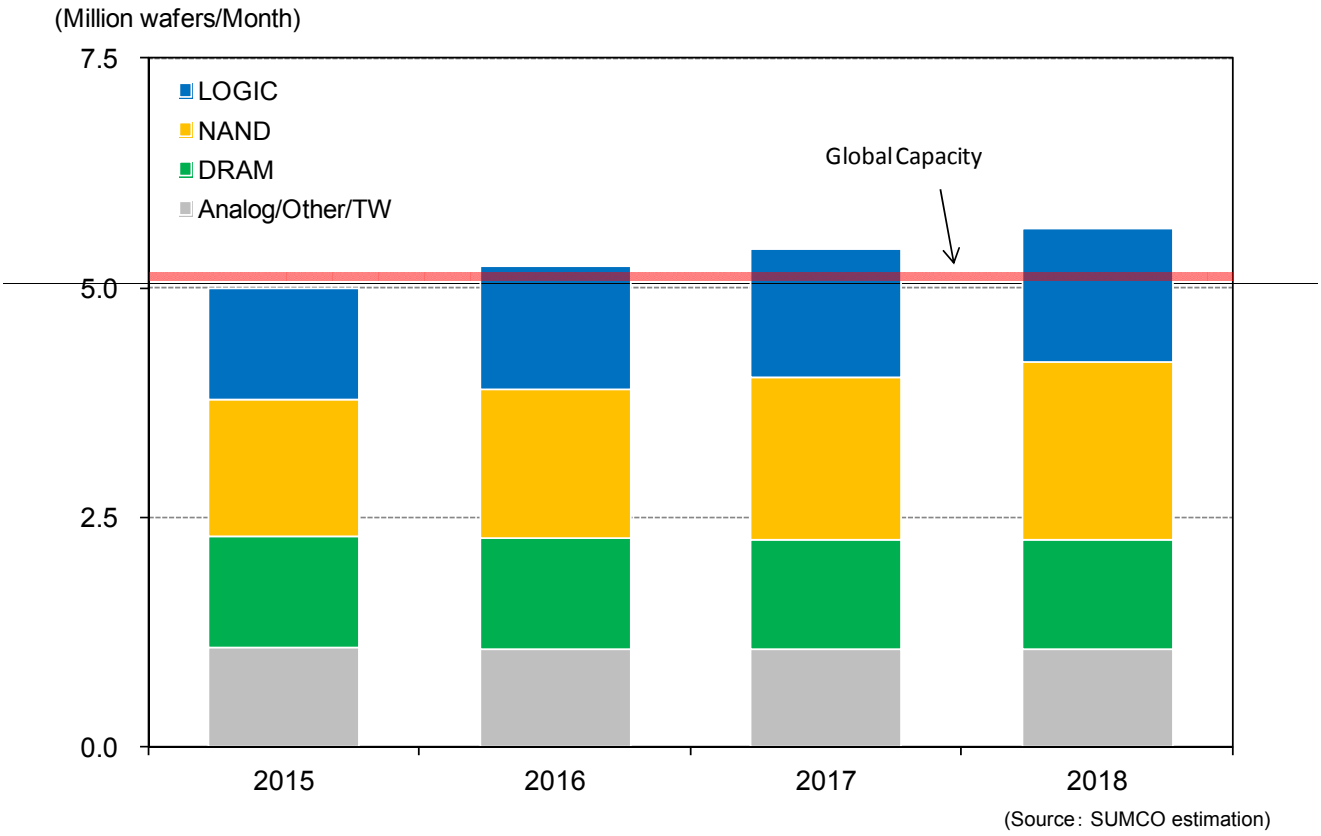
(Source: SUMCO estimation based on research reports)

4-1. Forecast 300mm Wafer Demand



(Source: SUMCO estimation)

4-2. Forecast　300mm Wafer Demand by Application

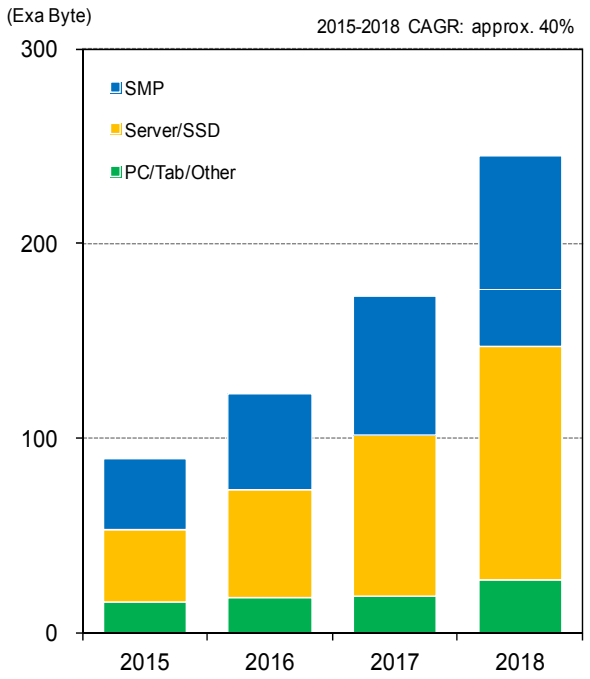


(Source：SUMCO estimation)

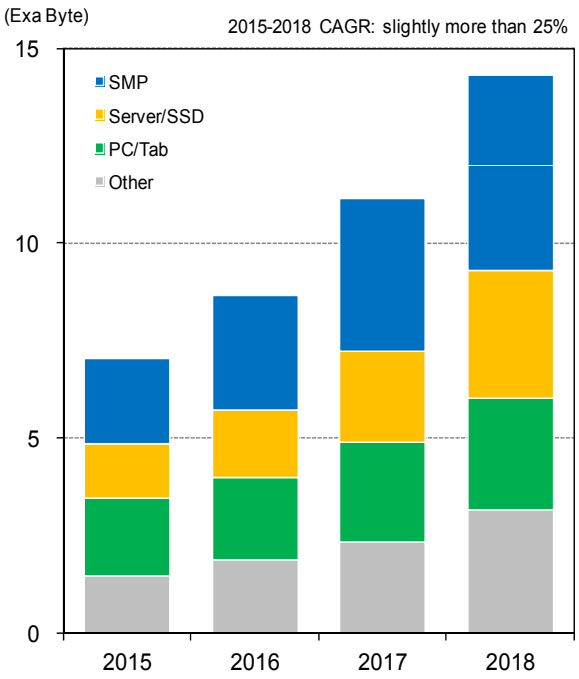
4-3. Forecast　Memory Demand

✓ **Driven by Smartphones, Servers and Big-data**

NAND Consumption by Application (Exa Byte)

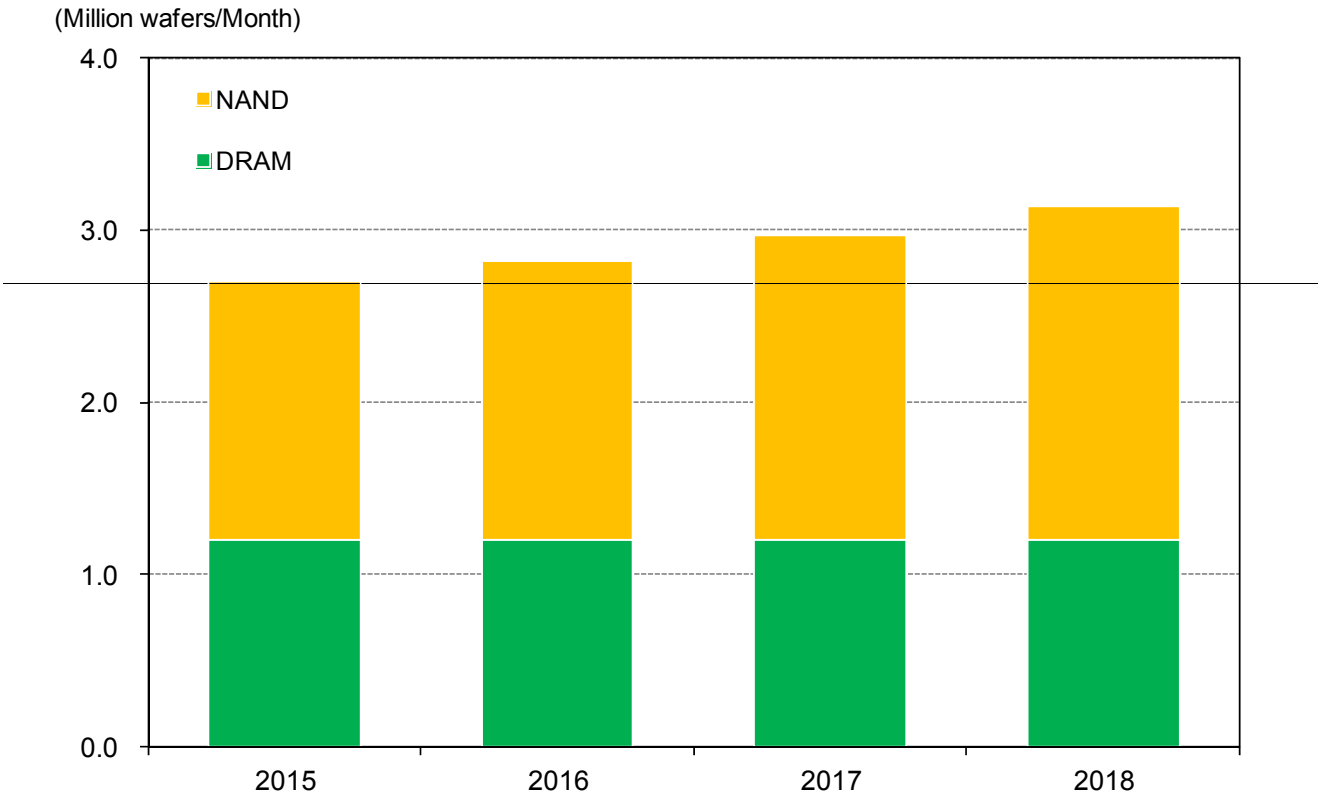


DRAM Consumption by Application (Exa Byte)



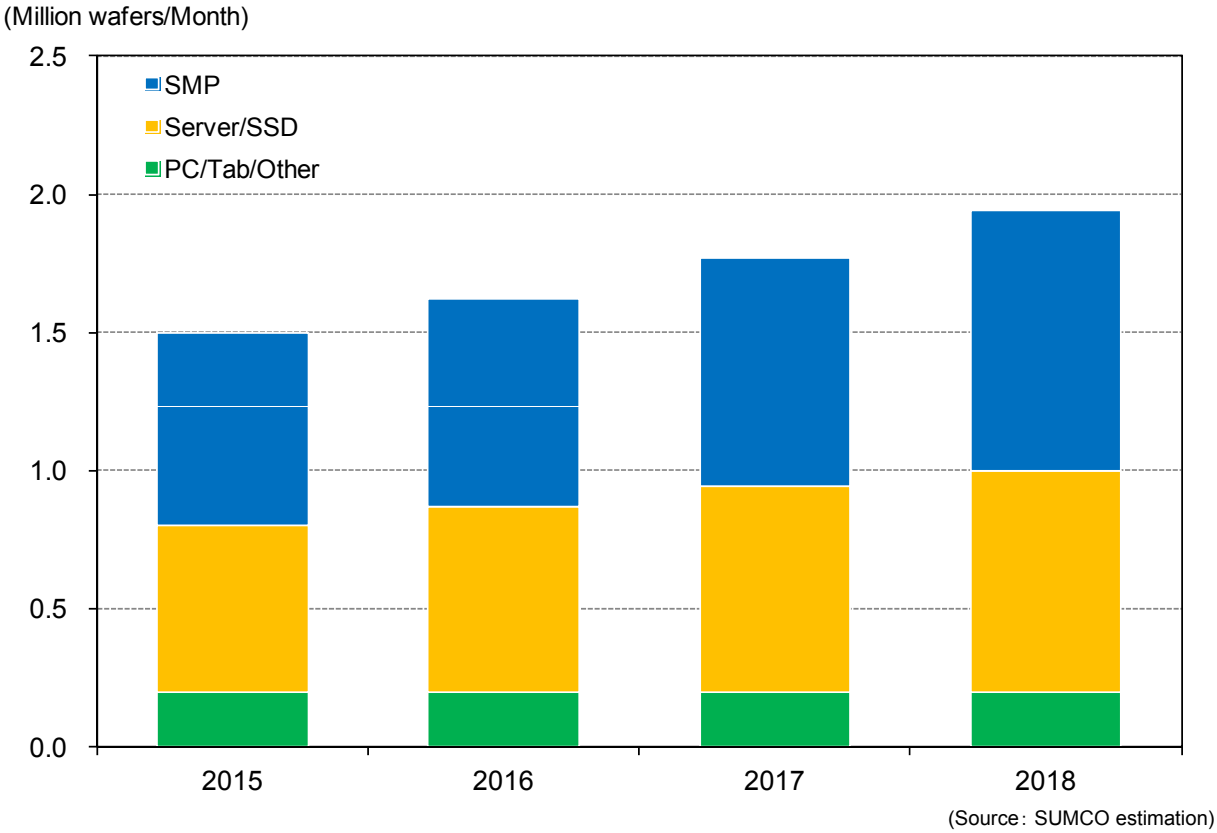
(Source：SUMCO estimation based on research reports)

4-4. Forecast　300mm Wafer Demand for Memory



(Source：SUMCO estimation based on research reports)

4-5. Forecast　300mm Wafer Demand for NAND



(Source：SUMCO estimation)

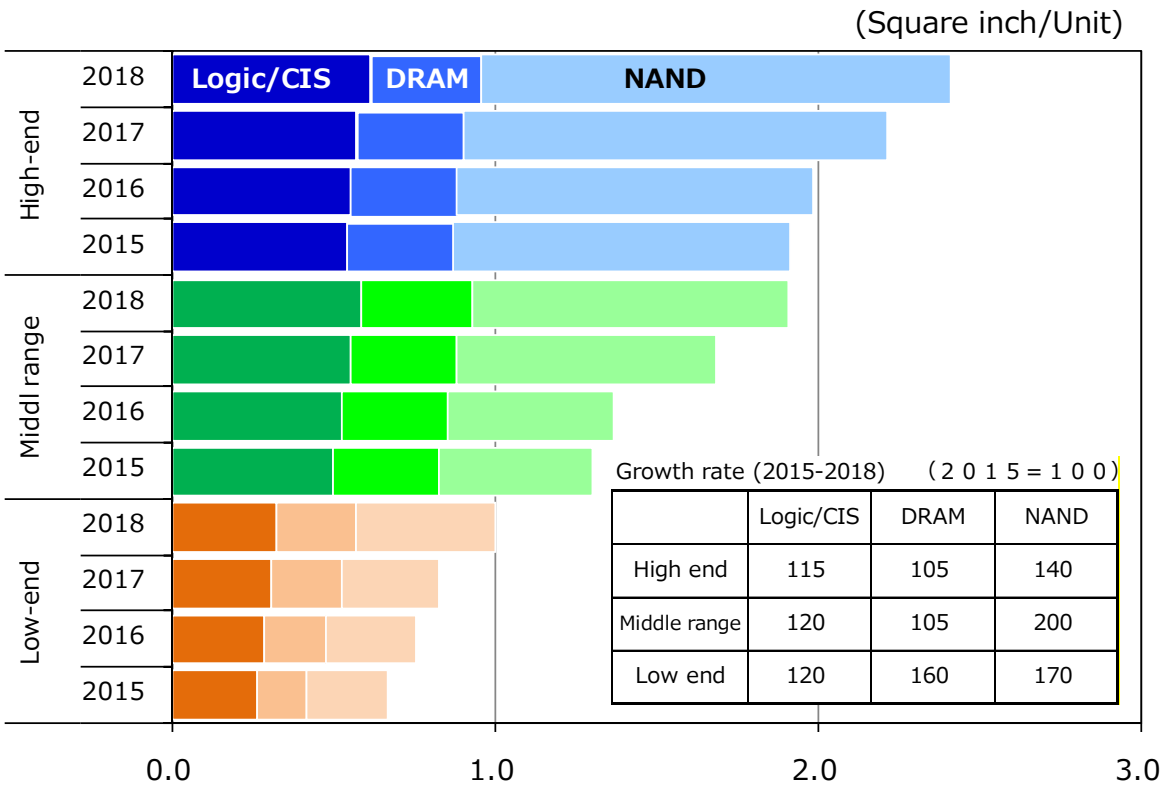
4-6. 300mmWF Demand is driven by SMP

✓ Continuous growth of Silicon Usage for Smartphone

		2014	2015	2016	2017	2018
High-end	AP	28nm	20nm/14nm	16nm/14nm	10nm	7nm
	Core	2-4Core	2-8Core	2-8Core	2-8Core	←
	Camera	8M-12M	12M-16M	12M-23M (Dual)	←	←
	NAND	16/32/128GB	16/64/128GB	32/64/128GB	32/128/256GB	←
	DRAM	1-2GB	2-3GB	2-4GB	2-6GB	←
Mid-range	AP	28nm	28nm	16/14nm	16/14nm	10nm
	Core	4-8Core	4-8Core	4-10Core	←	←
	Camera	13M	13M	13M-16M (Dual)	13-21M (Dual)	←
	NAND	16GB	16GB	16/32/64GB	32/64/128GB	32/64/128GB
	DRAM	1-2GB	2GB	2-3GB	2-4GB	2-6GB
Low-end	AP	45nm	28nm	28nm	28nm	←
	Core	2Core	2-4Core	2-8Core	←	←
	Camera	8M	8M-13M	←	←	←
	NAND	8GB	8-16GB	16GB	16GB	16-32GB
	DRAM	0.5GB	0.5GB	1-2GB	1-2GB	1-3GB

(Source：SUMCO estimation based on research reports)

4-7. Forecast 300mm Wafer Usage for SMP

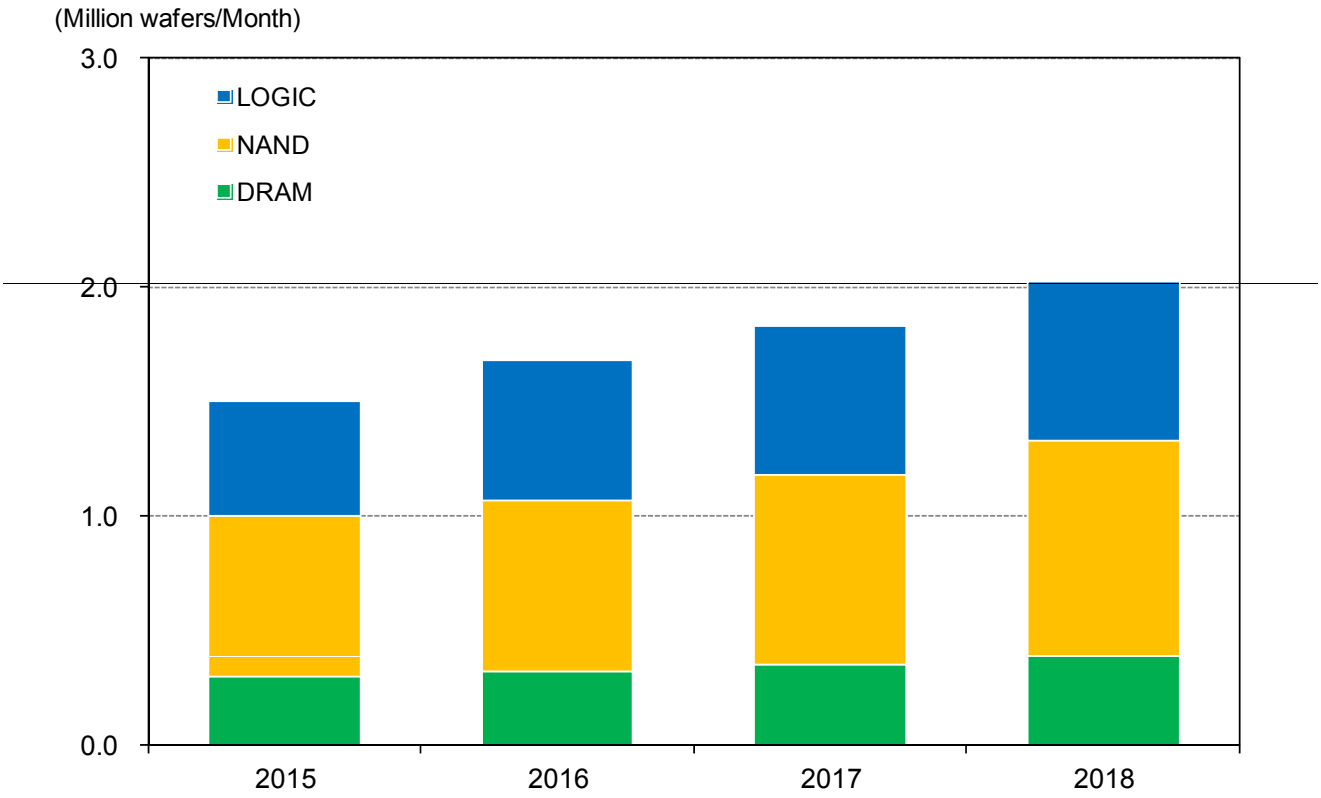


Growth rate (2015-2018) (2015=100)

	Logic/CIS	DRAM	NAND
High end	115	105	140
Middle range	120	105	200
Low end	120	160	170

(Source：SUMCO estimation based on research reports)

4-8. Forecast　300mm Wafer Demand for SMP

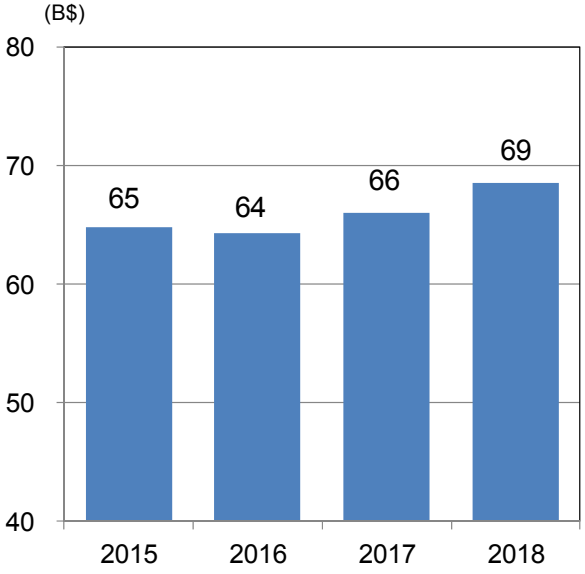


(Source：SUMCO estimation based on research reports)

4-9. Increase in Production Capacity of Semiconductor

- ✓ Demand increase for Smart Phone, Big data and Cloud
- ✓ Logic　: Leading-edge investment (14nm/16nm, 10/7nm)
- ✓ 3D-NAND、DRAM : 20nm/1Xnm

■ Investing forecast of semiconductors (Global)



■ Capacity forecast of 300mm wafers

(Thousand wafers/Month)

Device	2015/E →2016/E	2016/E →2017/E	2017/E →2018/E	2015/E →2018/E
Logic/CIS	100	105	110	315
NAND	110	185	250	545
DARM	-	-	-	-
300mm	210	290	360	860

(Source：SUMCO estimation based on research reports)

2Q-2016
Consolidated Business Results

Michiharu Takii
Representative Director,
President & COO

5-1. Summary of Consolidated Business Results

(Billions of Yen)

	1H-2015 Actual	1H-2016 Actual			Change
		1Q	2Q	Total	
Net sales	123.0	51.7	51.5	103.2	(19.8)
Operating income	18.3	3.6	2.5	6.1	(12.2)
Non-operating income and expenses	(3.0)	(1.0)	(0.8)	(1.8)	+1.2
Ordinary income	15.3	2.6	1.7	4.3	(11.0)
Extraordinary income and expenses	-	-	-	-	-
Income taxes	(4.4)	(1.1)	(0.9)	(2.0)	+2.4
Net income attributable to owners of the parent	10.9	1.5	0.8	2.3	(8.6)
Capital expenditure (Acceptance basis)	5.7	6.2	4.6	10.8	+5.1
Depreciation	10.4	5.0	5.2	10.2	(0.2)
EBITDA (*1)	29.6	9.0	8.2	17.2	(12.4)
Exchange rate (Yen/US$)	120.2	118.3	111.1	114.6	(5.6)
Operating margin (%)	14.9%	7.0%	5.0%	6.0%	(8.9%)
EBITDA margin (%)	24.1%	17.4%	16.0%	16.7%	(7.4%)
ROE (%)	11.1%	3.0%	1.4%	2.2%	(8.9%)
Net income per share (Yen)	40.38	5.37	2.49	7.87	(32.51)

(Note) *1. EBITDA = Operating Income + Depreciation + Amortization of Goodwill

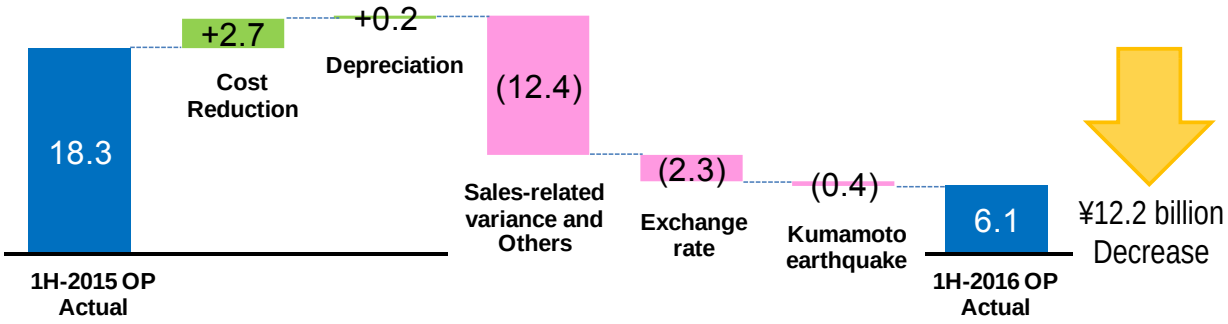
5-2. Analysis of Changes in Operating Income

■ 1H-2015 Actual → 1H-2016 Actual

(Billions of Yen)

	1H-2015 Actual	1H-2016 Actual	Change
Net Sales	123.0	103.2	(19.8)
Operating Income	18.3	6.1	(12.2)
Exchange Rate (Yen/US$)	120.2	114.6	(5.6)

【Analysis of Changes in Operating Income】



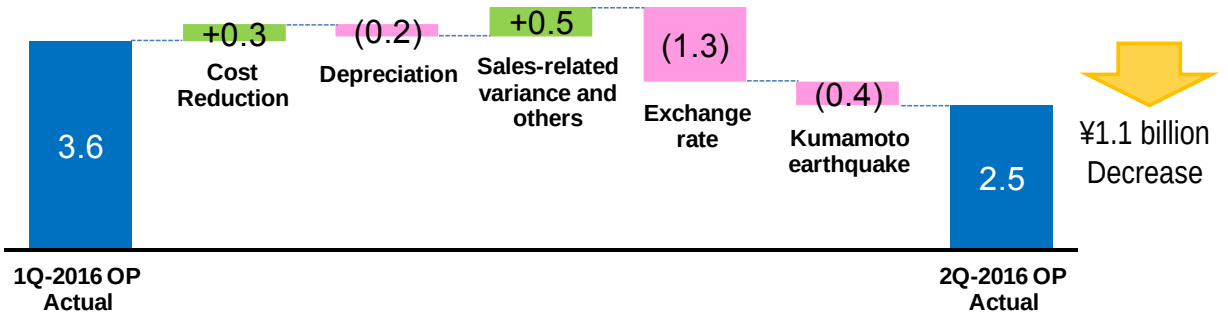
5-3. Analysis of Changes in Operating Income

■ 1Q-2016 Actual → 2Q-2016 Actual

(Billions of Yen)

	1Q-2016 Actual	2Q-2016 Actual	Change
Net Sales	51.7	51.5	(0.2)
Operating Income	3.6	2.5	(1.1)
Exchange Rate (Yen/US$)	118.3	111.1	(7.2)

【Analysis of Changes in Operating Income】



5-4. Consolidated Balance Sheet

(Billions of Yen)

	End of Dec-2015	End of Jun-2016	Change
Cash and time deposits	46.9	41.8	(5.1)
Finished products and WIP	29.4	27.2	(2.2)
Raw materials and supplies	134.2	143.0	+8.8
Tangible and intangible assets	172.5	166.2	(6.3)
Deferred income tax assets	6.7	5.3	(1.4)
Other assets	100.1	91.8	(8.3)
Total Assets	489.8	475.3	(14.5)
Debt and borrowings	180.3	179.8	(0.5)
Other liabilities	65.0	64.3	(0.7)
Liabilities	245.3	244.1	(1.2)
Capital stock	138.7	138.7	-
Capital surplus	23.3	23.3	-
Retained earnings	48.5	47.8	(0.7)
Others	34.0	21.4	(12.6)
Equity	244.5	231.2	(13.3)
Shareholders' equity ratio	43.2%	42.7%	(0.5%)
Equity per share (Yen)	721.8	692.0	(29.8)
D/E ratio (gross)	0.9x	0.9x	0.0x
D/E ratio (net)	0.6x	0.7x	0.1x

5-5. Consolidated Cash-Flow

(Billions of Yen)

	2Q-2016 (6 months)
Income before income taxes	4.3
Depreciation	10.2
Subtotal	14.5
Increase in inventories	(7.1)
Changes in working capital, etc.	6.4
Net cash provided by operating activities	13.8
Capital expenditure (Acceptance basis)	(10.8)
Others, net	(0.6)
Net cash used in investing activities	(11.4)
Free cash-flow	2.4

3Q-2016
Consolidated Business Forecasts

6-1. 3Q-2016 Consolidated Business Forecasts

(Billions of Yen)

	3Q-2015 Actual (9 months)	3Q-2016 Forecast 1Q Actual	2Q Actual	3Q FCT	Total (9 months)	Change
Net sales	181.9	51.7	51.5	51.0	154.2	(27.7)
Operating income	25.5	3.6	2.5	2.0	8.1	(17.4)
Non-operating income and expenses	(3.3)	(1.0)	(0.8)	(1.0)	(2.8)	+0.5
Ordinary income	22.2	2.6	1.7	1.0	5.3	(16.9)
Extraordinary income and expenses	-	-	-	-	-	-
Income taxes	(6.5)	(1.1)	(0.9)	(0.5)	(2.5)	+4.0
Net income attributable to owners of the parent	15.7	1.5	0.8	0.5	2.8	(12.9)
Capital Expenditure (Acceptance basis)	10.4	6.2	4.6	3.0	13.8	+3.4
Depreciation	16.0	5.0	5.2	6.0	16.2	+0.2
EBITDA (*1)	42.7	9.0	8.2	8.5	25.7	(17.0)
Exchange Rate (Yen/US$)	120.9	118.3	111.1	105.0	111.5	(9.4)
Operating Margin (%)	14.0%	7.0%	5.0%	3.9%	5.3%	(8.7%)
EBITDA Margin (%)	23.5%	17.4%	16.0%	16.7%	16.7%	(6.8%)
ROE (%)	10.7%	3.0%	1.4%	1.0%	1.8%	(8.9%)
Net Income per Share (Yen)	56.56	5.37	2.49	1.69	9.55	(47.01)

(Note) *1. EBITDA = Operating Income + Depreciation + Amortization of Goodwill

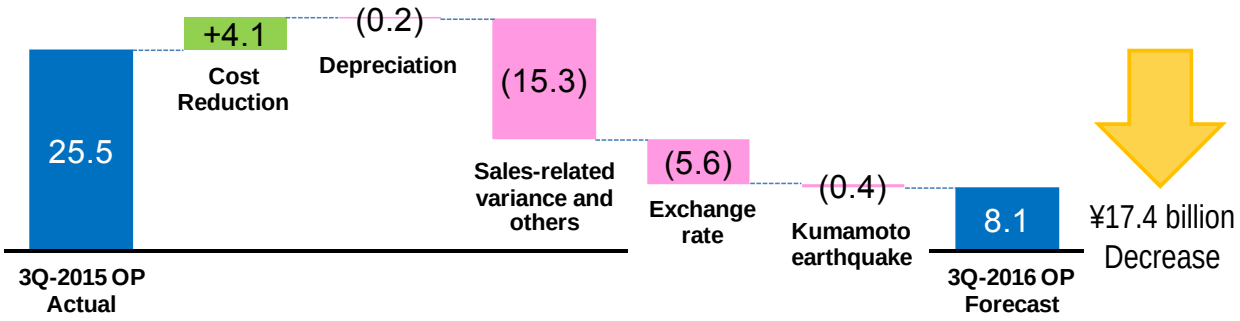
6-2. Analysis of Changes in Operating Income

■ 3Q-2015 Actual → 3Q-2016 Forecast

(Billions of Yen)

	3Q-2015 Act (9 months)	3Q-2016 FCT (9 months)	Change
Net Sales	181.9	154.2	(27.7)
Operating Income	25.5	8.1	(17.4)
Exchange Rate (Yen/US$)	120.9	111.5	(9.4)

【Analysis of Changes in Operating Income】



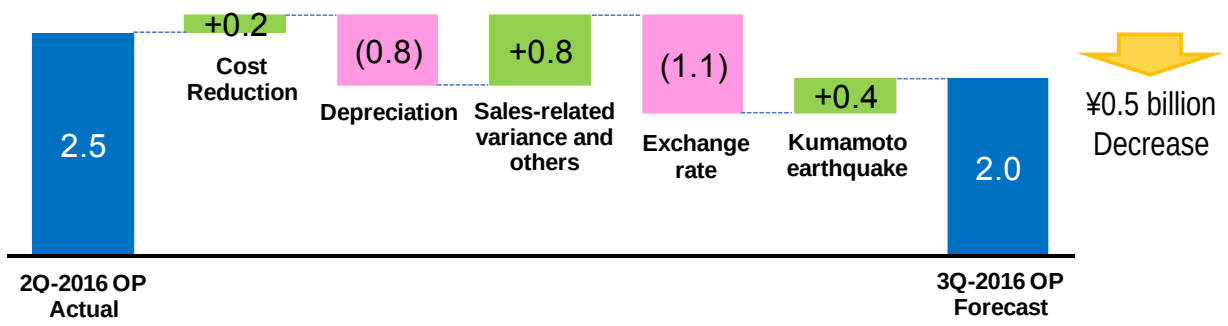
6-3. Analysis of Changes in Operating Income

■ 2Q-2016 Actual → 3Q-2016 Forecast

(Billions of Yen)

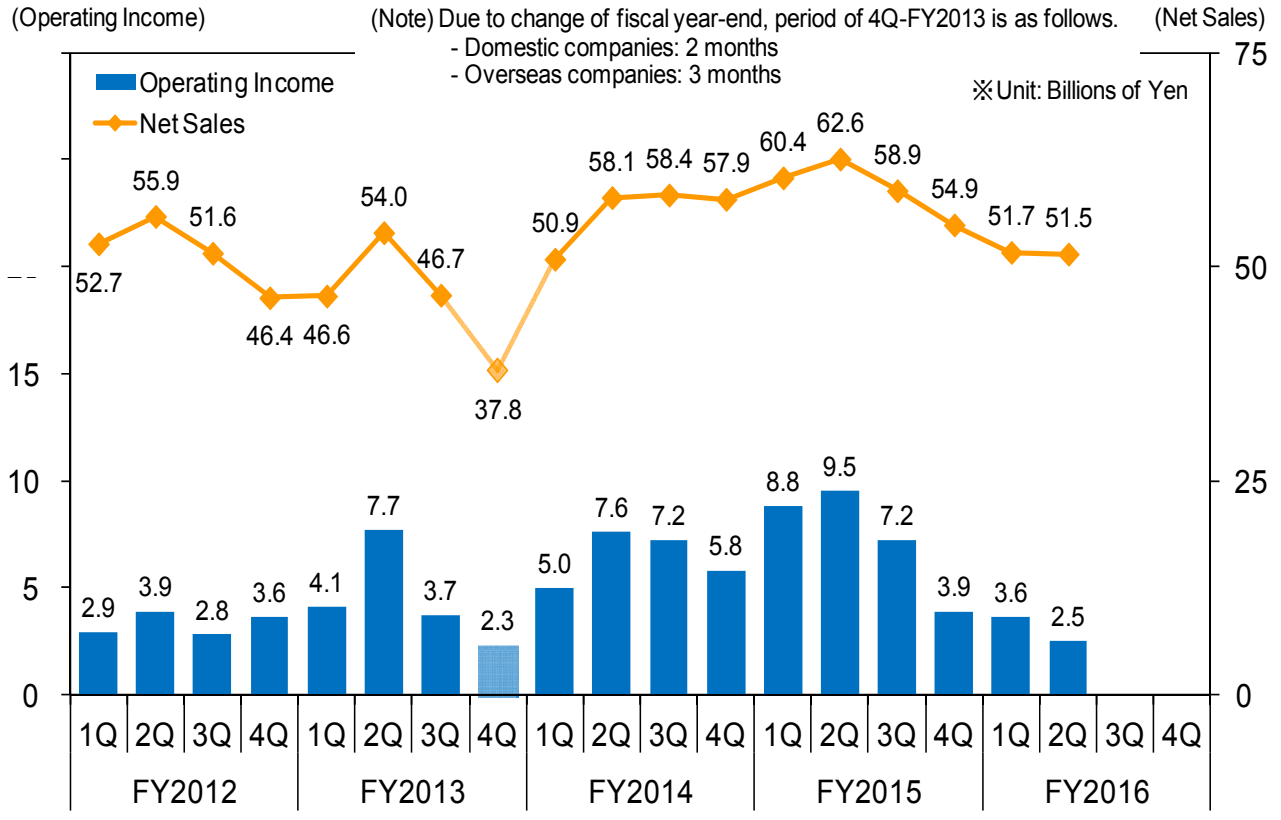
	2Q-2016 Actual	3Q-2016 Forecast	Change
Net Sales	51.5	51.0	(0.5)
Operating Income	2.5	2.0	(0.5)
Exchange Rate (Yen/US$)	111.1	105.0	(6.1)

【Analysis of Changes in Operating Income】

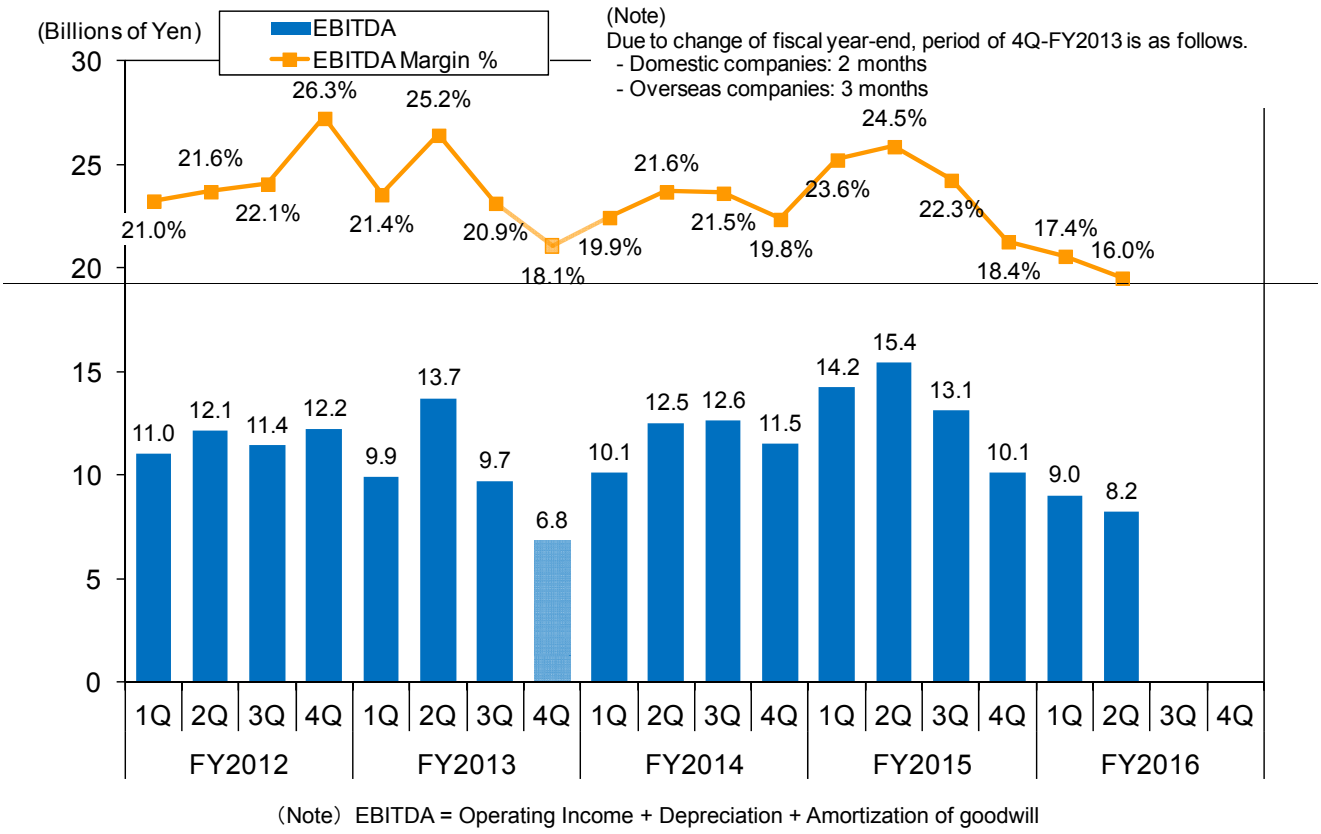


Reference Materials

Reference Materials: Quarterly Trend



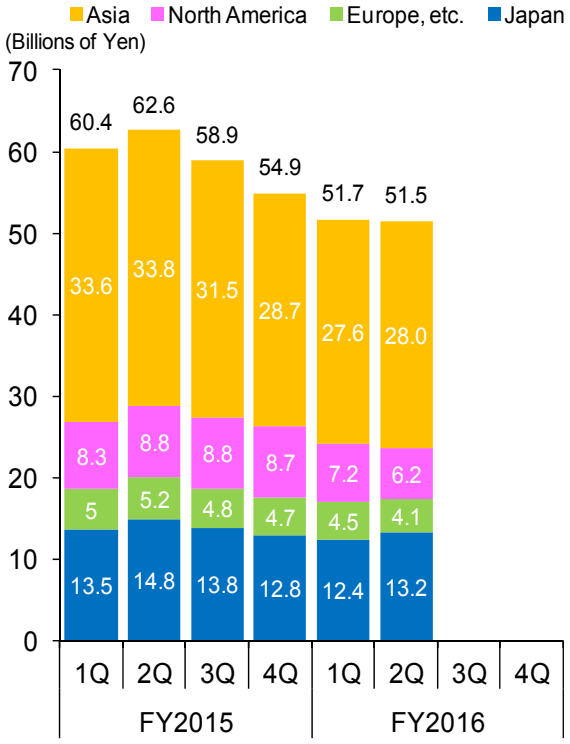
Reference Materials: EBITDA



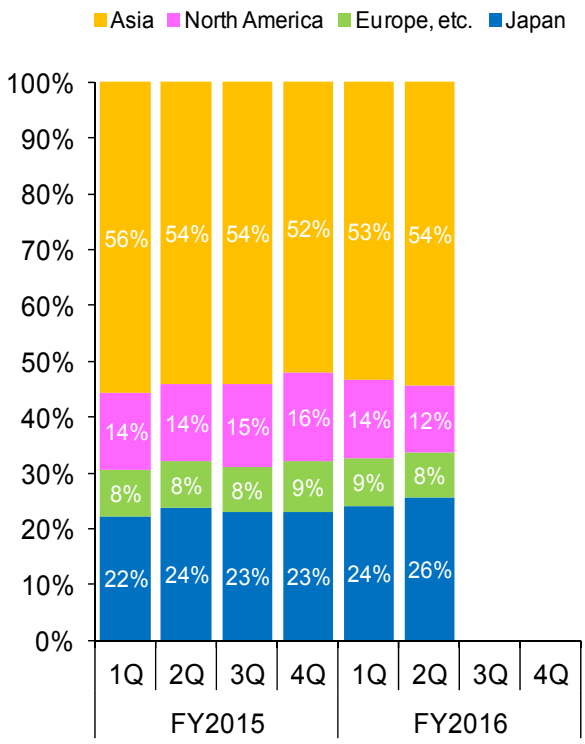
（Note）EBITDA = Operating Income + Depreciation + Amortization of goodwill

Reference Materials: Sales Results

Changes in Sales



Sales by Region





URL http://www.sumcosi.com/