

# **IR Presentation for Fiscal Year 2018, Ending March 2019**

**May 16, 2019**

**JTEKT Corporation**

**1. Results for Fiscal Year 2018, Ending March 2019**

**2. Forecasts for Fiscal Year 2019, Ending March 2020**

**3. Progress of Mid-term Business Plan**

# 1-1) Consolidated Performance

Despite an increase in income due to increased product quantity and M&As, profit decreased due to a drop in selling price levels and large increase in expenses. The net income halved due to the effect of optimization of B/S\*.

\*: Activities to reduce possible impairment risks through total check of the asset holdings and unification of management standards etc.

(%): Percentage of profit on sales		FY2017	FY2018	Increase/Decrease	Increase/Decrease (%)	(billions of yen) B/S optimization effect
Sales		1441.1	1520.8	+79.7	+5.5%	-
Operating profit	(5.6%)	81.3	(4.4%) 66.6	(14.7)	(18.2%)	(4.7) (1)
Ordinary profit	(5.7%)	82.5	(4.6%) 69.6	(12.9)	(15.6%)	(4.7) (1)
Profit attributable to owners of parent	(3.4%)	49.6	(1.6%) 24.6	(25.0)	(50.4%)	(16.8) (2)
Foreign exchange (April to next March)		¥110.85/USD ¥129.70/EUR	¥110.91/USD ¥128.41/EUR	¥0.06 weak yen ¥1.29 strong yen		
Capital expenditure		66.6	75.2	+8.5	+12.8%	
Depreciation		60.4	66.9	+6.4	+10.7%	
R&D costs	(3.8%)	55.2	(4.2%) 63.6	+8.3	+15.2%	
Divident	Interim	¥21	¥22	¥1		
	Term-end	¥22	¥22	-		

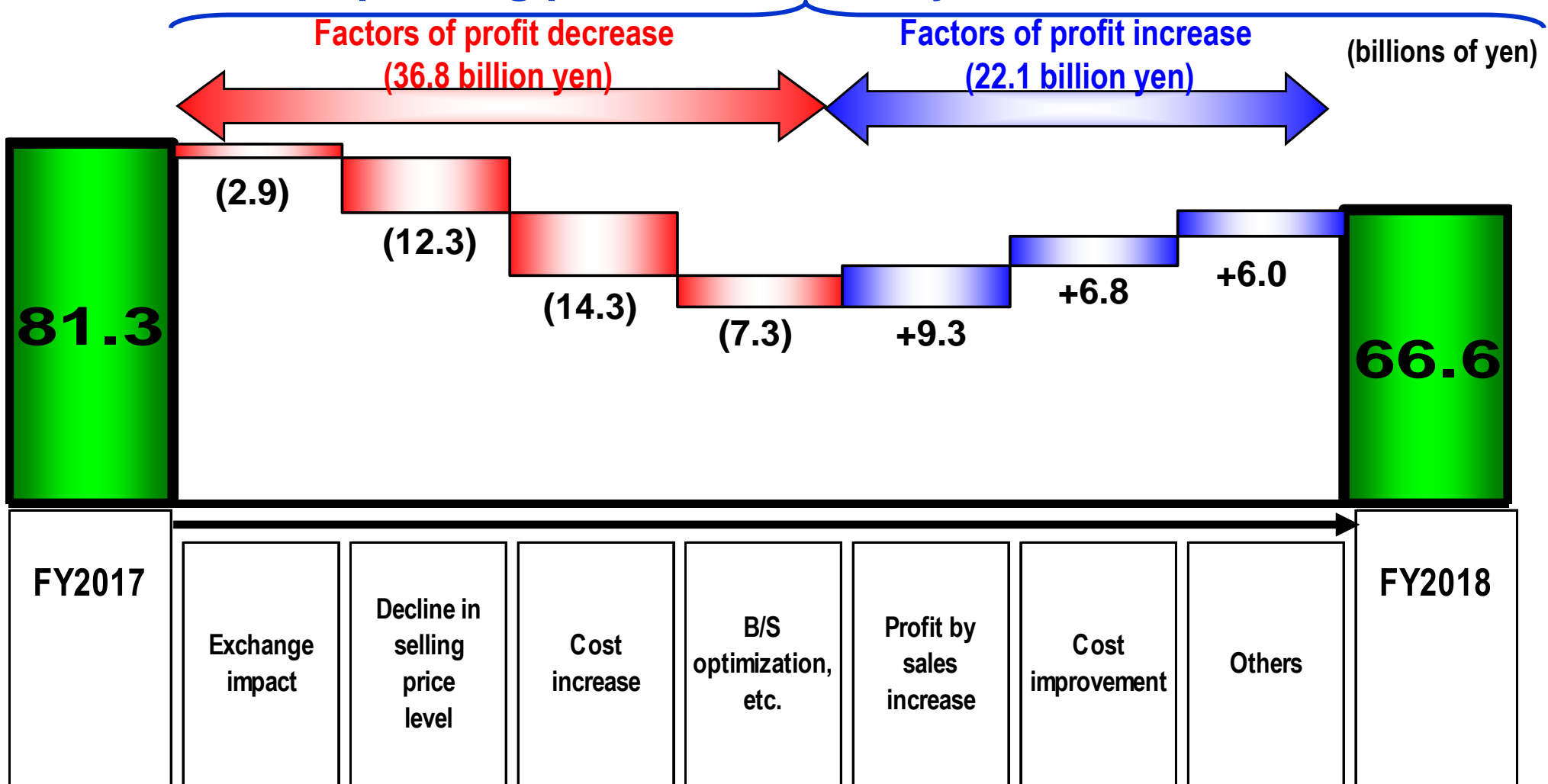
**Detail**

- Devaluation of inventory (STG, BRG)
- Fixed asset impairment (bearing subsidiaries)
- Disposal of deferred tax liabilities (North America subsidiaries)

# 1-2) Operating Profit Analysis

The drop in selling price levels and large increase in expenses could not be covered by increased income and cost improvement, and profit decreased due to a temporary loss from B/S optimization, etc.

## Operating profit: 14.7 billion yen decrease



# 1-3) Results by Business Units

## Mechanical Components

Increased income and M&As have had positive effects however profit has decreased largely due to a drop in selling price levels, large increase in expenses, and effect of B/S optimization.

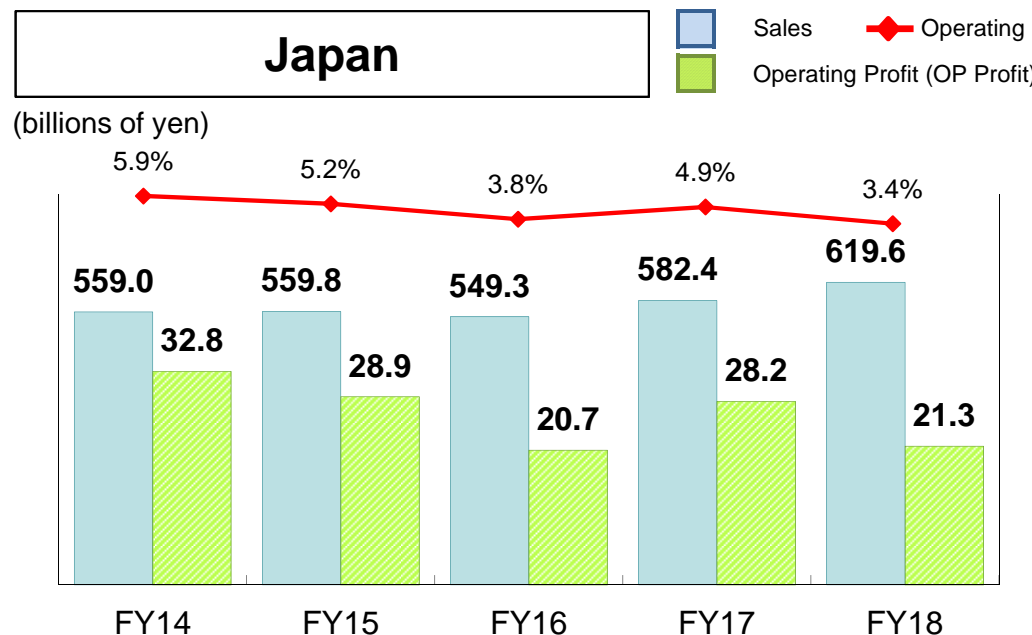
## Machine Tools

Sales have been strong primarily in Japan, North America, and China, resulting in increased income and increased profit.

(billions of yen)

		FY2017	FY2018	Increase/ Decrease	Increase/ Decrease (%)
<b>Mechanical components</b>	<b>Sales</b>	1279.5	<b>1345.8</b>	+66.2	+5.2%
	<b>Steering systems</b>	711.8	<b>770.7</b>	+58.9	+8.3%
	<b>Drivelines</b>	145.4	<b>157.2</b>	+11.7	+8.1%
	<b>Bearings</b>	422.3	<b>417.8</b>	(4.4)	(1.1%)
	<b>Operating profit</b> (Operating profit (%))	68.2 (5.3%)	<b>49.0</b> (3.6%)	(19.2)	(28.1%)
<b>Machine tools</b>	<b>Sales</b>	161.5	<b>175.0</b>	+13.4	+8.3%
	<b>Machine tools</b>	160.0	<b>173.1</b>	+13.0	+8.2%
	<b>Others</b>	1.5	<b>1.9</b>	+0.3	+25.2%
	<b>Operating profit</b> (Operating profit (%))	12.8 (8.0%)	<b>16.8</b> (9.6%)	+3.9	+31.1%

# 1-4) Financial Results by Company Location [1]

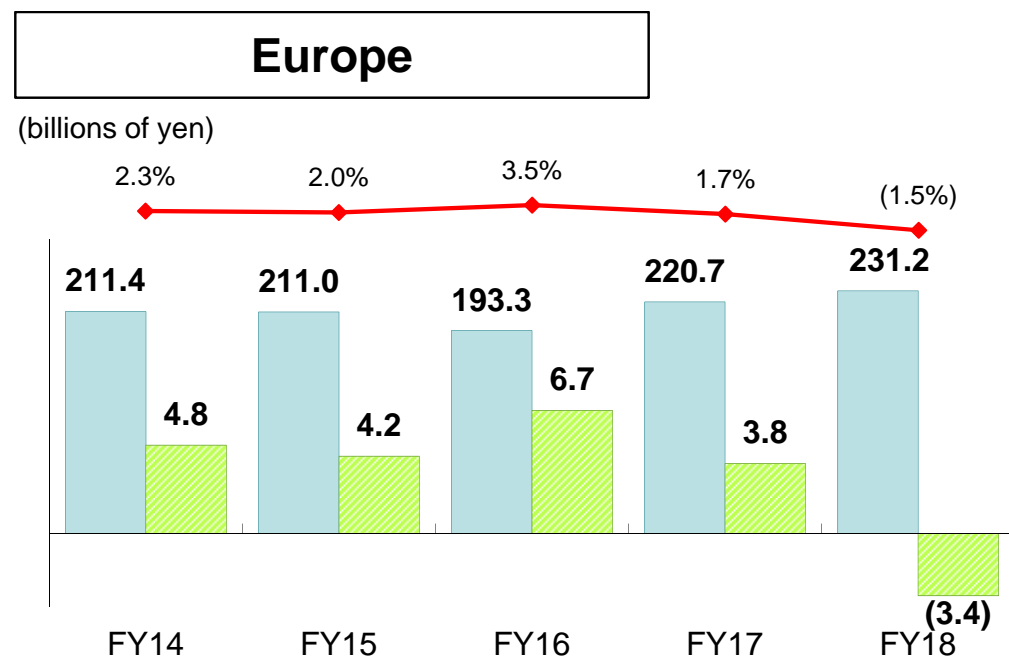


(billions of yen)

	FY17	FY18	Increase/Decrease
Sales	582.4	619.6	37.2
OP profit	28.2	21.3	(6.8)
OP profit (%)	4.9%	3.4%	-

**Increase in income/decrease in profits**

- Despite the positive effects of M&As and increased income, profit has decreased due to increases in material cost and fixed cost.



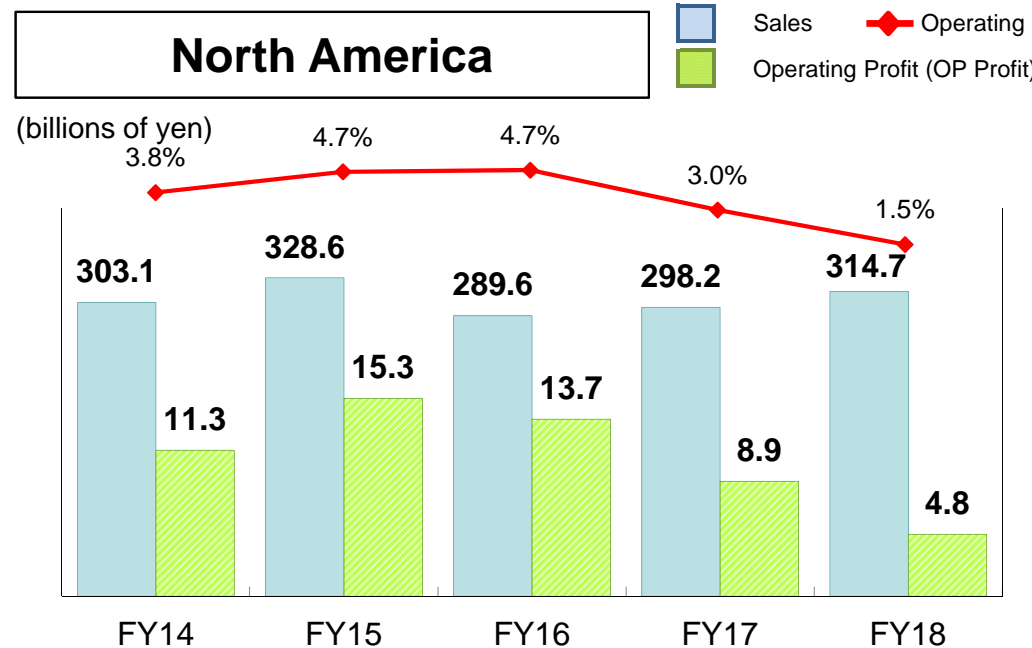
(billions of yen)

	FY17	FY18	Increase/Decrease
Sales	220.7	231.2	10.5
OP profit	3.8	(3.4)	(7.2)
OP profit (%)	1.7%	(1.5%)	-

**Increase in income/decrease in profits**

- Largely decreased profit as a result of expenses involved in launching rack-assist EPS, the deterioration of productivity, and B/S optimization effect.

# 1-5) Financial Results by Company Location [2]

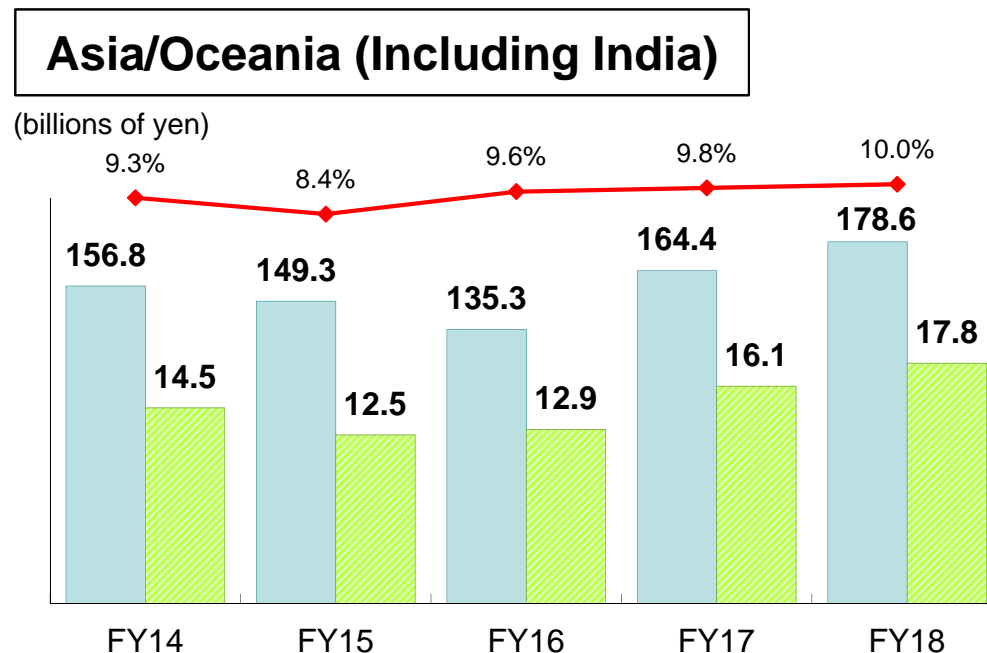


(billions of yen)

	FY17	FY18	Increase/Decrease
Sales	298.2	314.7	16.4
OP profit	8.9	4.8	(4.1)
OP profit (%)	3.0%	1.5%	-

### Increase in income/decrease in profits

○ Decreased profit as a result of expenses involved in launching rack-assist EPS, the deterioration of driveline and bearing profitability, and B/S optimization effect.



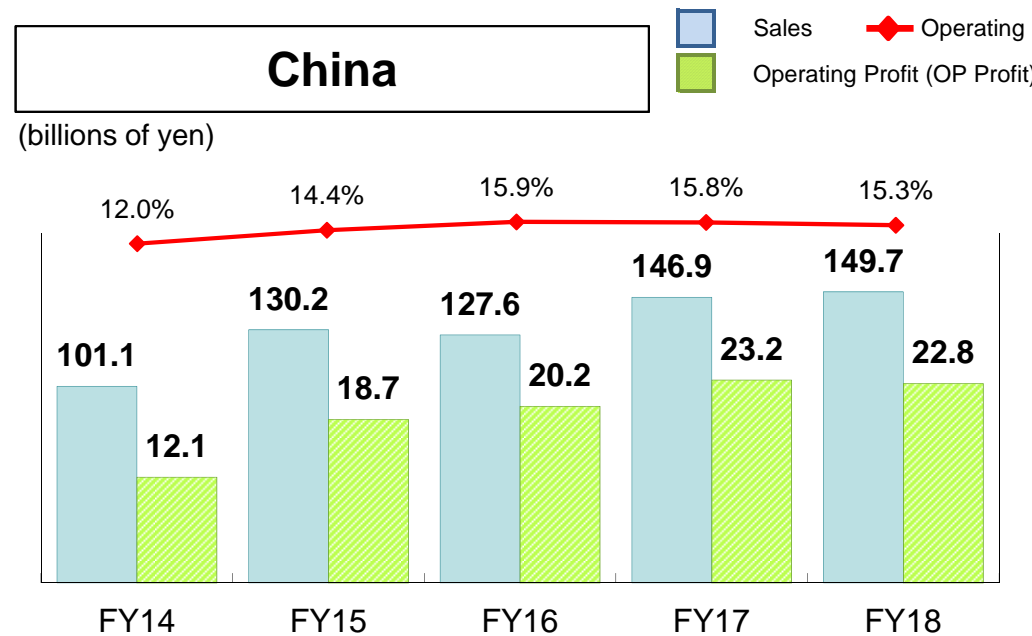
(billions of yen)

	FY17	FY18	Increase/Decrease
Sales	164.4	178.6	14.2
OP profit	16.1	17.8	1.7
OP profit (%)	9.8%	10.0%	-

### Increase in income/profits

○ Increased income/increased profit due to the positive effects of M&As and increased product quantity.

# 1-6) Financial Results by Company Location [3]

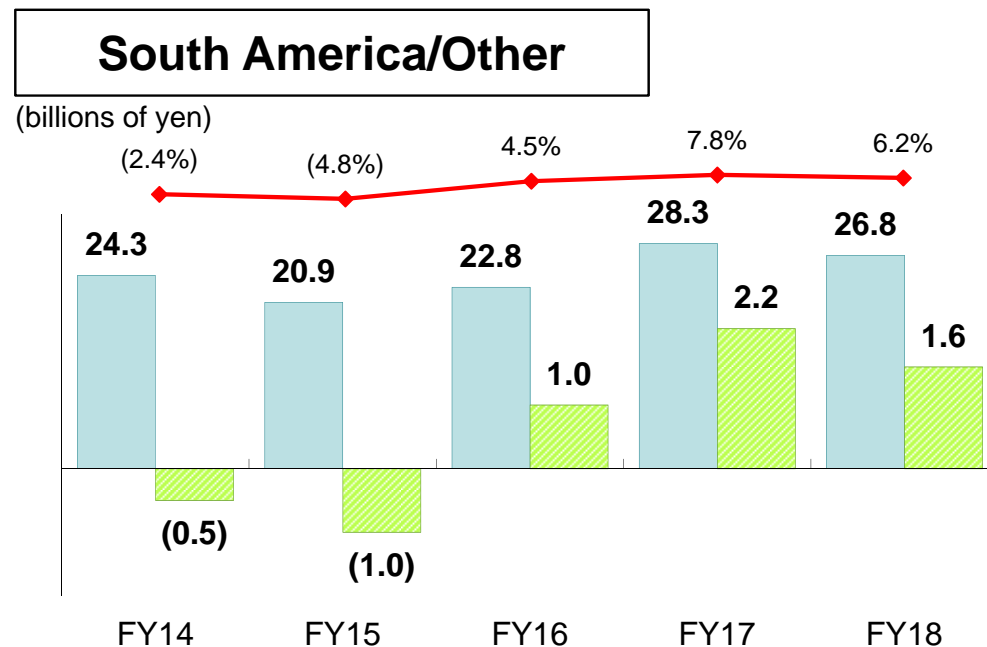


(billions of yen)

	FY17	FY18	Increase/Decrease
Sales	146.9	149.7	2.7
OP profit	23.2	22.8	(0.4)
OP profit (%)	15.8%	15.3%	-

**Increase in income/decrease in profits**

- Despite the positive effect of M&As, profit decreased due to a drop in selling price levels and a decrease in substantial product quantity.



(billions of yen)

	FY17	FY18	Increase/Decrease
Sales	28.3	26.8	(1.4)
OP profit	2.2	1.6	(0.5)
OP profit (%)	7.8%	6.2%	-

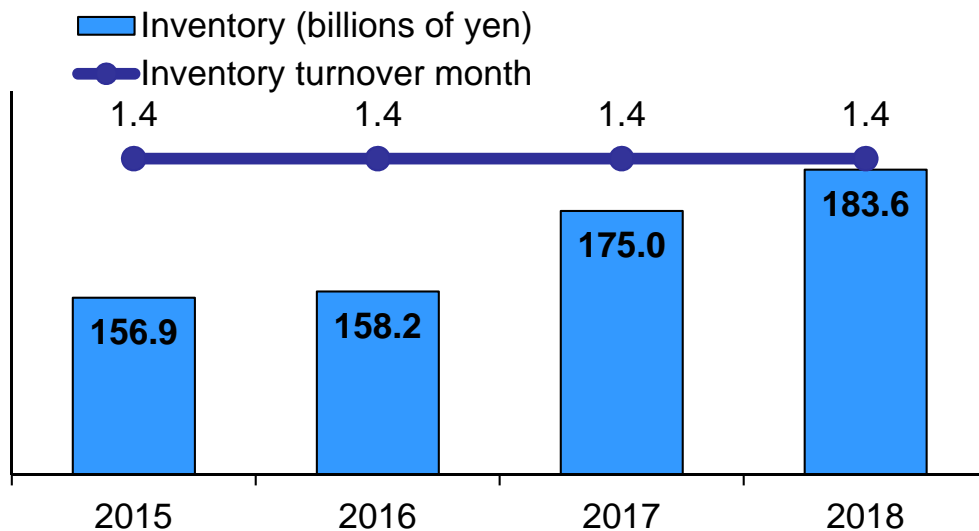
**Decrease in income/profits**

- Despite the increase in product quantity, income and profit decreased due to foreign exchange rates.



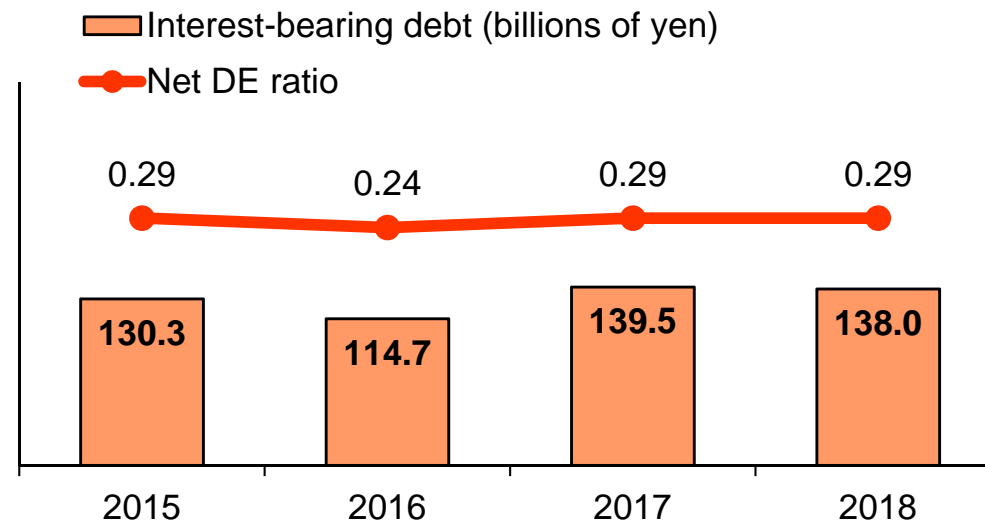
# 1-7) Financial Conditions

## Inventory

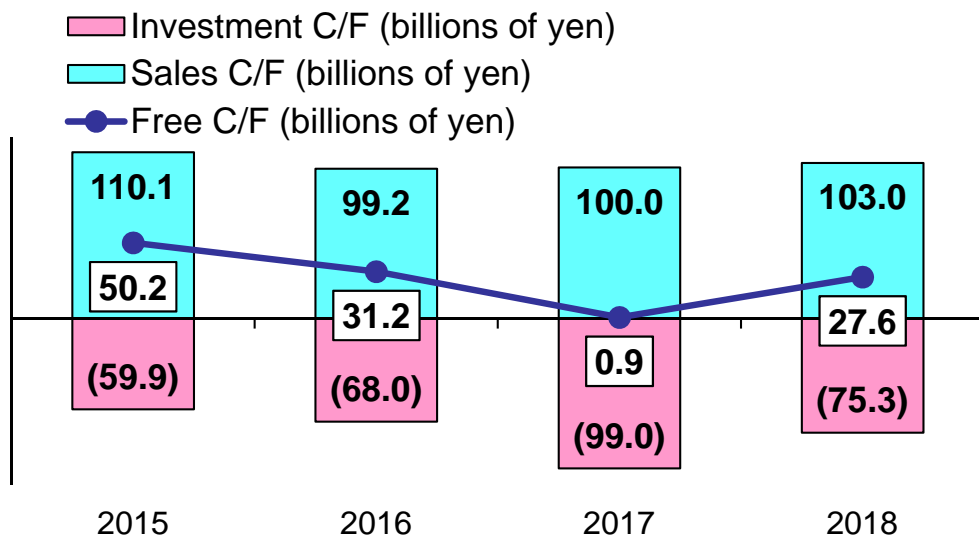


## Interest-bearing debt

\* Net amount of debt with interest and cash and deposits

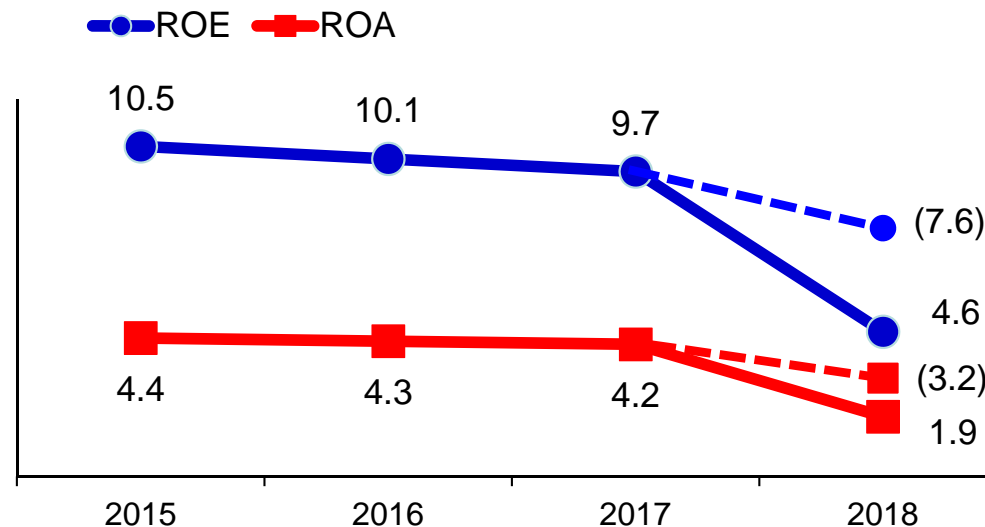


## Cash flow



## ROE/ROA

( ): Excluding B/S optimization



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### World economy

- Unpredictability due to the protectionist policies and impact from BREXIT (Britain exiting from the EU)
- Concern regarding world-wide impact due to trade friction while U.S. economy would steadily grow
- Slowdown in Chinese economy due to trade friction impacts, therefore conventional economic expansion would be difficult

### Japan

- Underpinning of the economy due to domestic demand, however the market is soft due to the slowdown in export and capital investment
- Carefully watch the progression of negotiations with U.S. regarding Trade Agreement on goods (TAG)

## 2-2) Forecasts for Fiscal Year 2019

Despite negative effects relating to foreign exchange, product quantity would increase, therefore plan to increase income and profits by improving cost price.

(billions of yen)

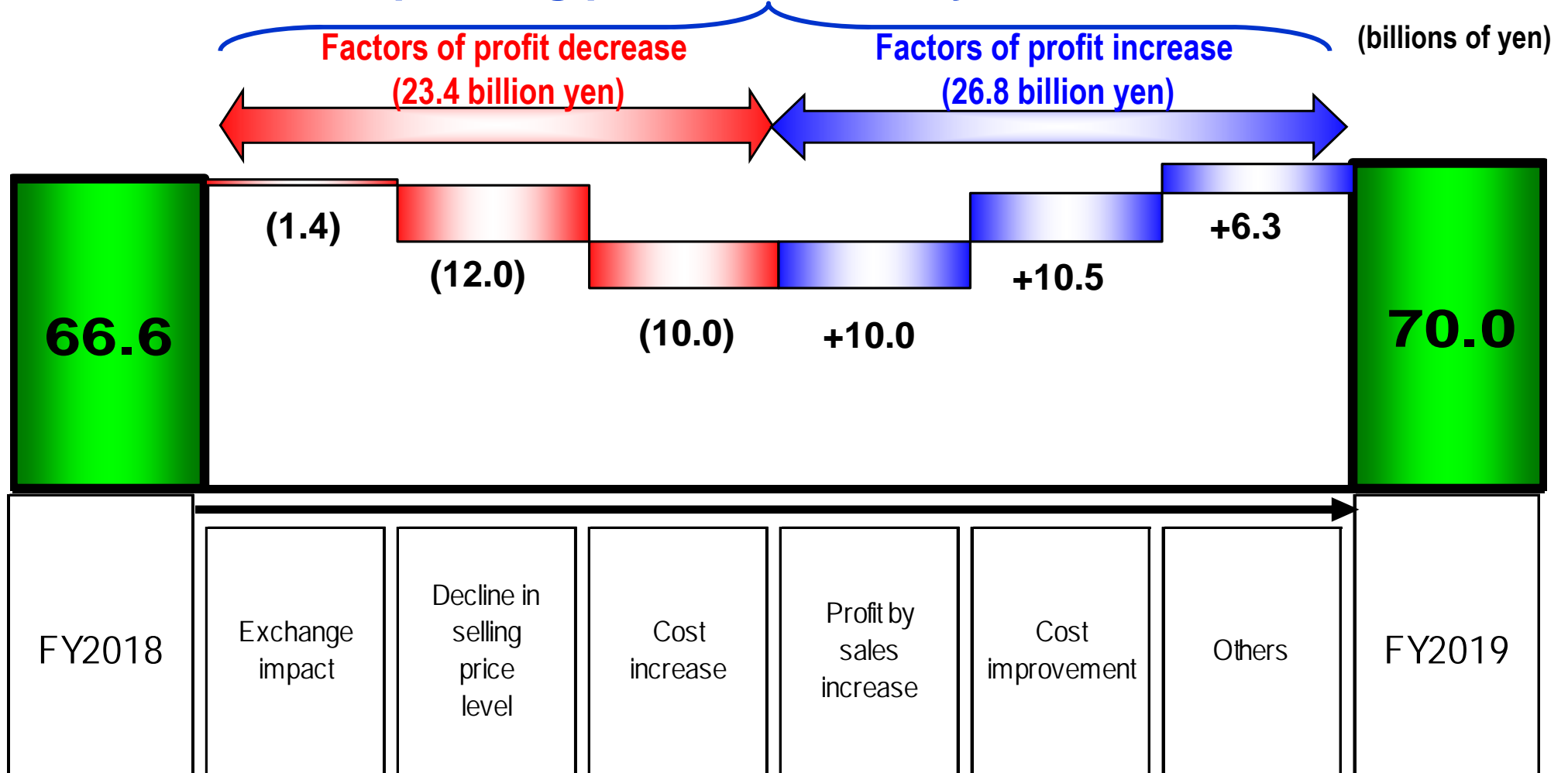
	FY2018 Full year (Result)	FY2019 (Forecast)			Increase/ Decrease	Increase/ Decrease (%)
		1H	2H	Full year		
Sales	1520.8	750.0	780.0	1530.0	+9.1	+0.6%
Operating profit	(4.4%) 66.6	(4.0%) 30.0	(5.1%) 40.0	(4.6%) 70.0	+3.3	+5.1%
Ordinary profit	(4.6%) 69.6	(4.1%) 31.0	(5.3%) 41.0	(4.7%) 72.0	+2.3	+3.4%
Profit attributable to owners of parent	(1.6%) 24.6	(2.3%) 17.0	(2.9%) 23.0	(2.6%) 40.0	+15.3	+62.2%
Foreign exchange rate (April to next March)	¥110.91/USD ¥128.41/EUR	¥110.00/USD ¥120.00/EUR	¥110.00/USD ¥120.00/EUR	¥110.00/USD ¥120.00/EUR	¥0.91 strong yen ¥8.41 strong yen	
Capital expenditure	75.2	40.5	48.5	89.0	+13.8	+18.4%
Depreciation	66.9	31.0	36.0	67.0	+0.1	+0.1%
R&D costs	(4.2%) 63.6	(4.3%) 32.0	(4.6%) 36.0	(4.4%) 68.0	+4.3	+6.8%
Dividend	¥44	¥22	¥22	¥44	-	

( %): Percentage of profit on sales

# 2-3) Operating Profit Analysis

Decline in selling price level and increased expenses will be covered by increased income and cost improvement. Plan increased profits due to the settlement of temporary loss.

**Operating profit: 3.4 billion yen increase**



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- 1) Review and Measures
- 2) CASE and Actions for New Business
- 3) Steering Systems
- 4) Drivelines
- 5) Bearings
- 6) Machine Tools & Mechatronics

## 2. Actions to Achieve Higher Corporate Value

# 1) Review and Measures



# 3-1-1) Review on Forecast and Results

(At FY2013 mid-term plan creation)

## Achieved sales target, but big gap in profit

Management Rate: ¥95/US\$, ¥110/€, ¥16/yuan

	FY2018 Target (Set in FY2013)	FY2018 Result	Increase/Decrease
Sales	1340 billion yen	<b>1431.3 billion yen</b>	+91.3 billion yen
Operating profit	100 billion yen	<b>54.7 billion yen</b>	<b>(45.3 billion yen)</b>
Operating profit ratio	7.5%	<b>3.8%</b>	<b>(3.7%)</b>

### Impact from external environment change

1. Economic environment: Slow down in world-wide automobile sales growth
2. Competitive environment: Drop in selling price due to commoditization

### Impact from internal factor

1. Delay in achieving planned value after product model change
2. Non-achievement of productivity improvement target
3. Insufficient purchasing improvement
4. Effect of B/S optimization initiatives
5. Continuing structural reform costs

\* See slides on bearings for details

# 3-1-2) External Environment Change

## (1. Economic environment)

Sales increased at a level higher than the automobile production volume growth rate

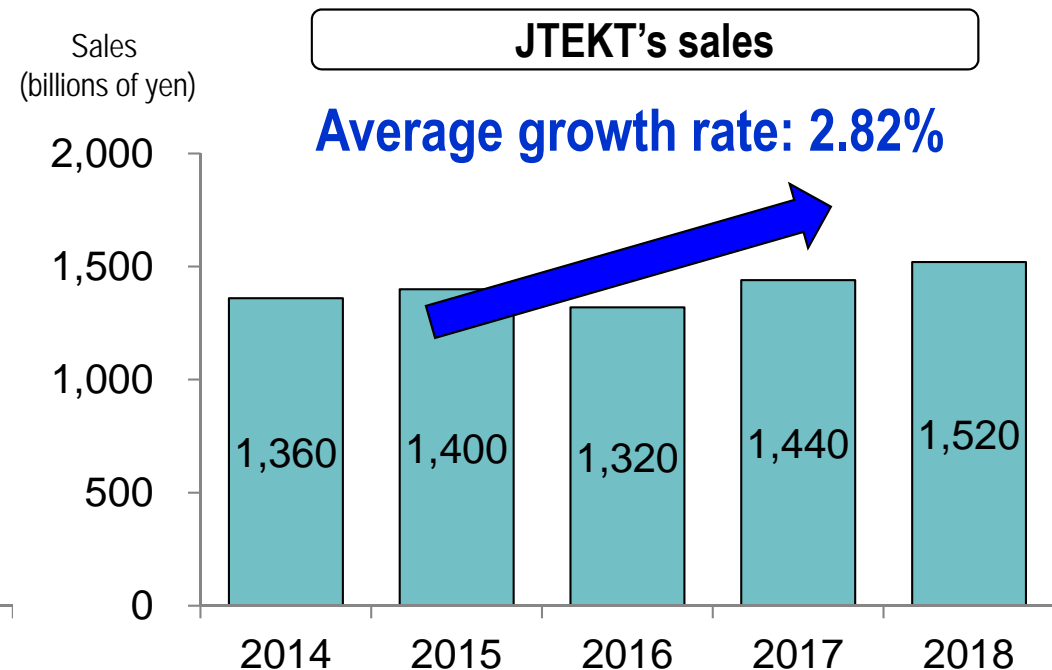
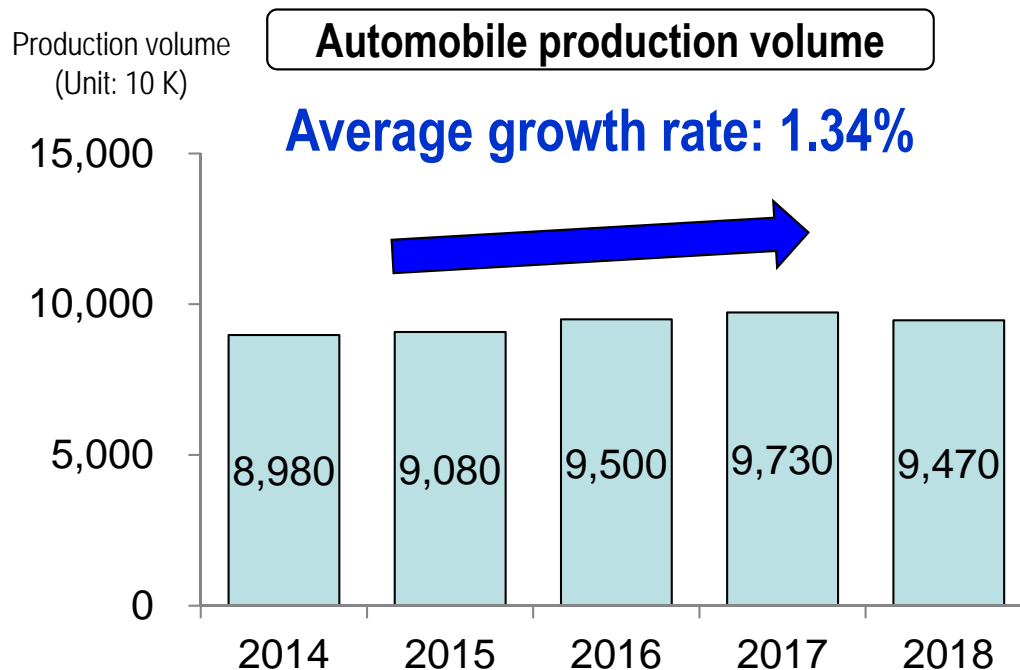
### [Major reason of automobile sales decrease]

- Slow down in Chinese market due to the tax cut termination
- Increased foreign trade concerns due to the trade issue between the United States and China since November 2018.

### [Major reason for sales increase]

- Selling price increased due to the change from hydraulic to EPS
- Won new customers

### <Comparison of automobile production volume and JTEKT's sales>



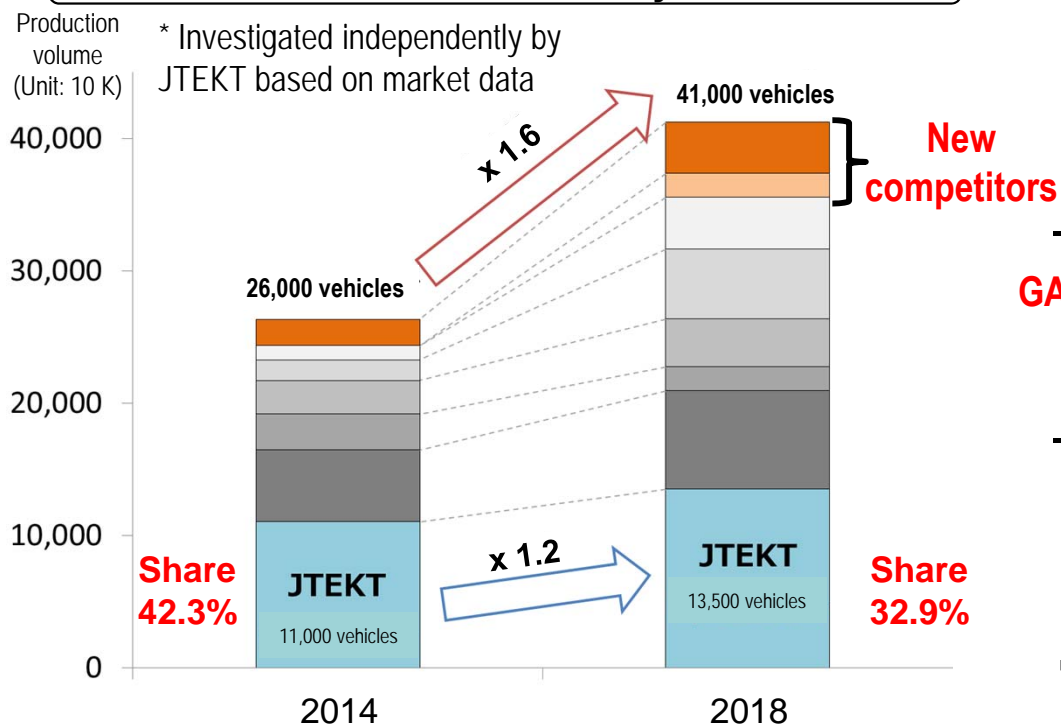
## (2. Competitive environment)

Cost reduction couldn't absorb the impact of decline in selling price due to the C-EPS commoditization, and resulted in lower profit rate

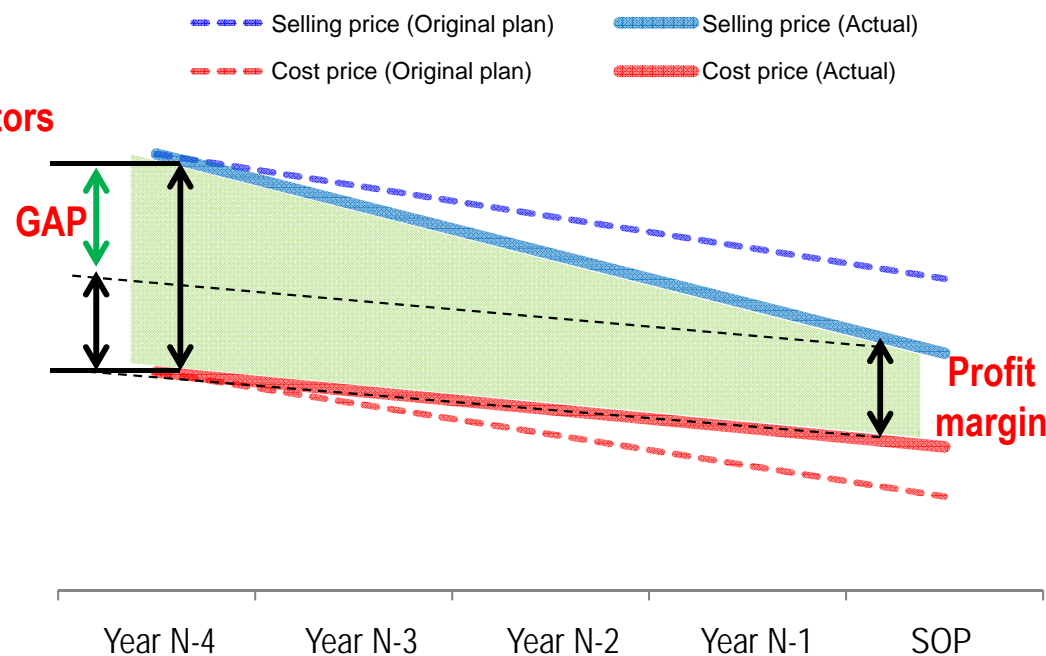
### [Major reason for decline in selling price]

- C-EPS commoditization and intensification of competition due to new competitors

Production volume of C-EPS by manufacture



Transition in selling/cost price



# 3-1-4) Internal Factor

## (1. Non-achievement of planned cost after model change)

**Factor:** Failed to achieve target cost at the launch of rack-assist EPS  
**Measure:** Improve fundamental technologies / Enhancement of production preparation and project management

### Factor

[Lost initiative in development/  
production preparation]

- On-vehicle requirements surpassed estimation
- Insufficient global standards (design/production/management)

### Measure

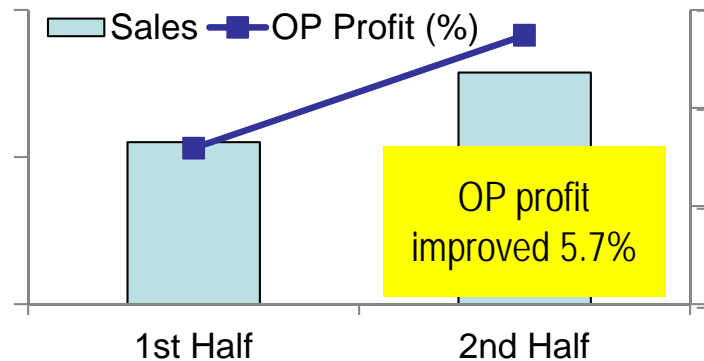
[Take initiative in development/  
production preparation]

- Achieve the required performance by improving the fundamental technologies
- Simultaneous development of products and production processes (initiative)
- In-depth target setting and follow-up

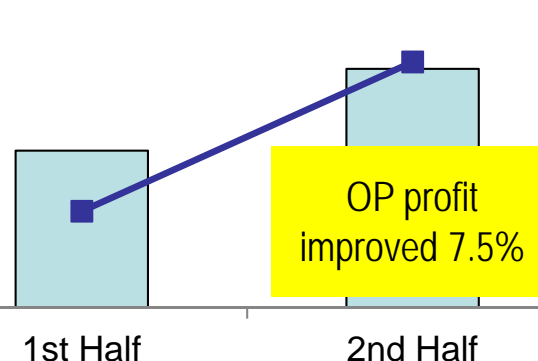
### Effect of measures

\* Examples of three plants manufacturing rack-assist EPS

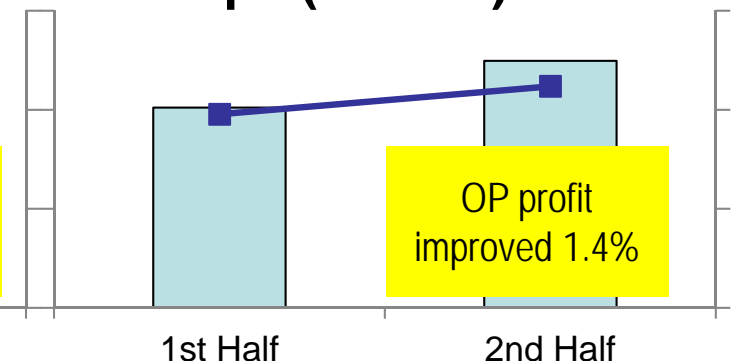
#### Japan (Hanazono Plant)



#### North America



#### Europe (France)

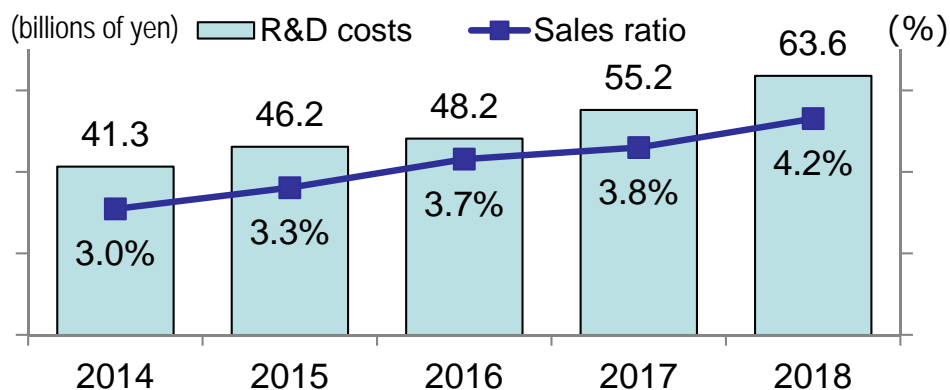


## (2. Non-achievement of productivity improvement target)

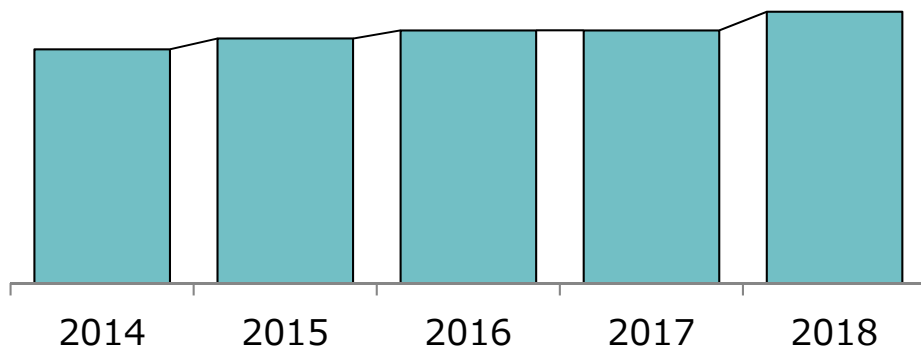
**Factor:** The growth of R&D costs and indirect labor's share exceeded the sales growth  
**Measure:** Accelerate productivity improvement of plants and indirect departments with a firm resolution

### Factor

#### R&D costs increased 22.3 billion yen (vs 2014)



#### Labor's share of indirect departments increased



### Measure

**For a sustainable growth, continue investing in R&D and business foundation costs (e.g. IT, operation reform)**

#### [Direct Departments]

- Automation (or *Jidoka*), manpower saving
- Monitor productivity index (e.g. BEKIDO ratio\*, CHOKKO ratio\*, PPLH) weekly in major plants and use PDCA to achieve target by the end of this third quarter

BEKIDO ratio: machine running ratio  
 CHOKKO ratio: direct run ratio

#### [Indirect Departments]

- Reap the effect of operation reform by using IT and RPA
- Promote operation reform, improve IT literacy

# 3-1-6) Internal Factor

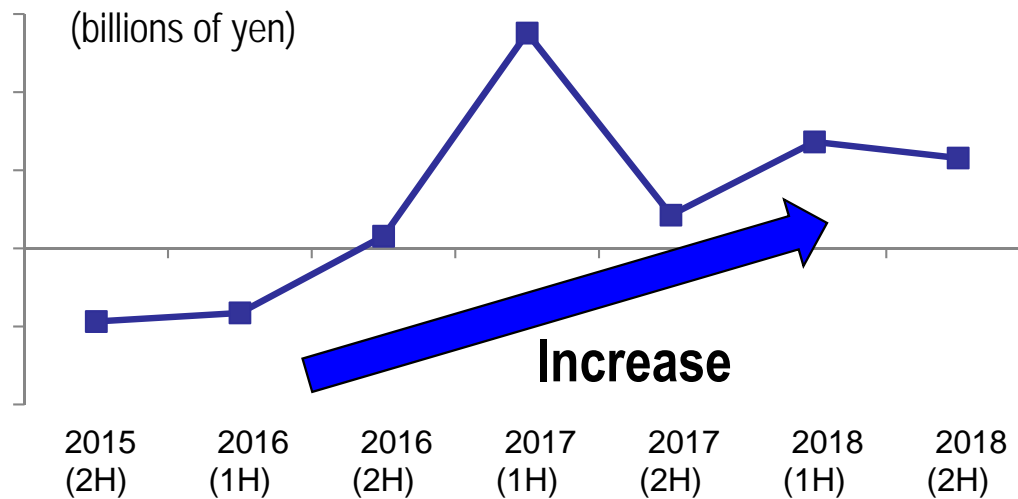
## (3. Insufficient purchasing improvement)

**Factor: Material price increase exceeded cost price improvement ratio**  
**Measure: Promotion of VAVE activities together with suppliers**

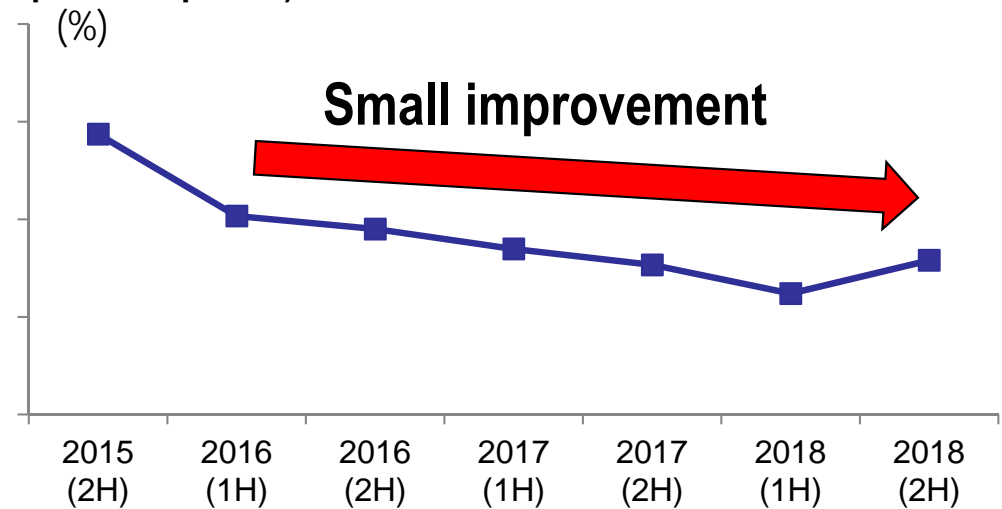
### [Main reason for increase in cost price]

- Failed to absorb the increase in material purchasing price such as steels despite the improved purchasing price

<Transition of material price (vs. previous period)>



<Transition of purchasing price improvement ratio (vs. previous period)>



## (4. Effect of B/S optimization initiatives)

Promotion of full inspection of unnecessary assets and unification of management standard for maintaining an appropriate B/S, to reduce possible asset impairment risks

### Factor of unnecessary assets

### Measure

#### [Inventory]

- Stock of old model due to model change
- Ununified evaluation standard for stagnating inventories

#### [Thorough application following policy/standards]

- Strengthening of phase-out-control
- Unification of evaluation standard, review on standard inventory

#### [Fixed asset]

- Unnecessary equipment/ idle machines/ spare parts for equipment due to model change

#### [Strengthen system for effective use of idle machines]

- Share information and application of idle machines world-wide
- Correlate equipment with spare parts for the equipment

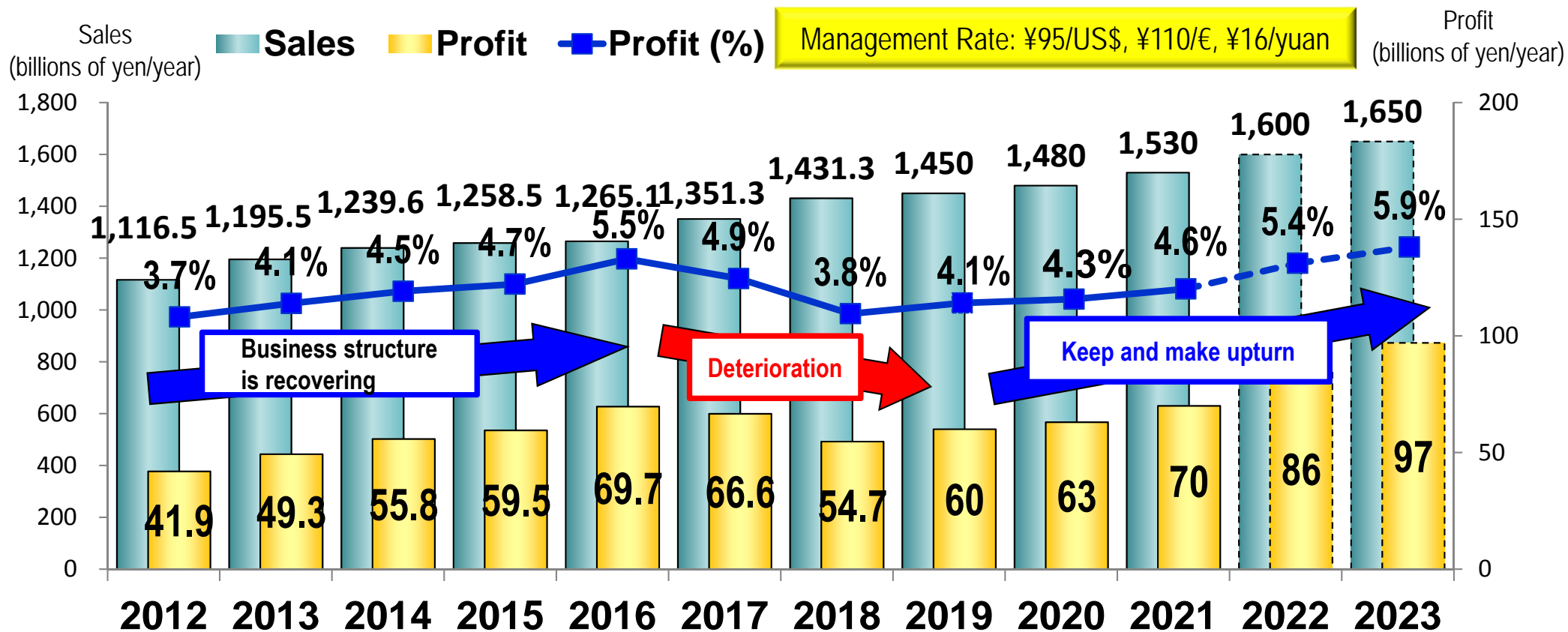
(billions of yen)

	Operating profit	Net income		Total
	Devaluation of inventory	Fixed asset impairment, etc.	Reversal of deferred tax asset	
Effect on P/L	4.7	5.8	6.3	16.8

# 3-1-8) Review: Profit & Loss Trend (Management rate) Koyo TOYODA

Business structure was improving until FY16 (except foreign exchange impact), however, the following two years resulted in income increase and **profit decrease**.

-> In FY2019, aim to return to growth track by achieving planned value of Rack-assist EPS, reaping bearing structure reform effect, and results of various measures (e.g. productivity improvement measures by indirect departments)





## CONNECTED

### Technologies contributing to "Connected"

#### Product security enhancement

STG

- Development of system for EVITA\*  
\*(E-safety vehicle intrusion protected applications)



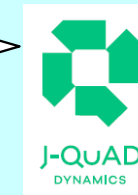
Blocks the cyberattacks and prevents vehicles to be hacked.

## AUTONOMOUS

### Technologies and products that support "Autonomous"

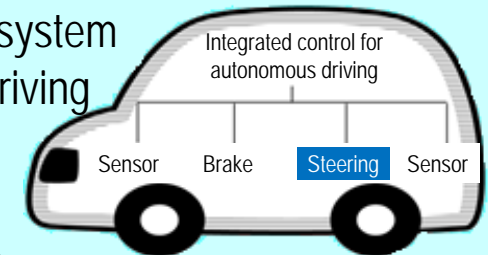
#### Collaboration with other companies

STG



#### J-QuAD DYNAMICS

- A joint venture company for system development of autonomous driving integrated control
- Established on April 2019



#### Industry-government-academia collaboration

STG

- Participation in the next-generation logistics system project (led by METI)
- Participation in "SIP (Cross-ministerial Strategic Innovation Promotion Program)" (led by the Cabinet Office)

#### SBW (Steer by Wire)

STG

- Development of leading-edge systems by utilizing our patented technologies

## SHARED

Decrease in the number of automobiles due to the increase in the shared mobility -> Creation of new business

J-PAS

New business

- A power-assisted suit offering new proposals for work related to heavy items



**J-PAS**

Lithium-ion Capacitor

New business

- In-vehicle capacitor without cooling. Supports -40 to 85°C environment (World's first!)



Factory agent

New business

- A cloud service for matching manufacturers

## ELECTRIC

Technologies and products that support "Electric"

Practical use of E-AWD

Driveline

- Develop and offer customers E-AWD by utilizing AWD engineering and knowledge accumulated over many years

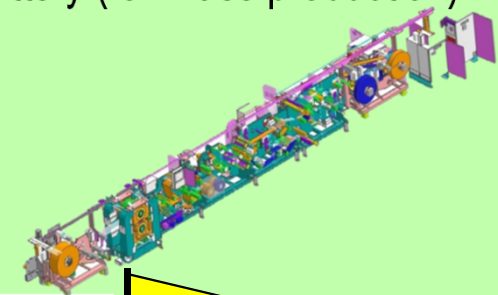


Volume production of equipment for battery

Machine tools

- Equipment for lithium-ion battery (for mass production): already delivered

- Kneader
- Coating machine • Press
- Electrode drying machine (Koyo Thermo Systems)



Small type SBB for motors and reducers

Bearing

- For high speed rotation usage, a quietness-improved ball bearing

Challenge: To yield new profits less affected by automobile market changes

## Factory agent

A cloud service for matching manufacturers

- Simultaneous request for quotes to multiple companies
- Manufacturing process progress management
- Completes delivery, inspection, and payment arrangement on a website



Abundant data base of enterprises



Supports deferred payment



Supported with programming & agents



Collect multiple quotes

**Establishment of a smart factory collaboration research laboratory (JTEKT - AIST (The National Institute of Advanced Industrial Science and Technology))**

- Smartification of machines and production lines, and R&D of the related element technologies
- Aim to create next-generation smart factory

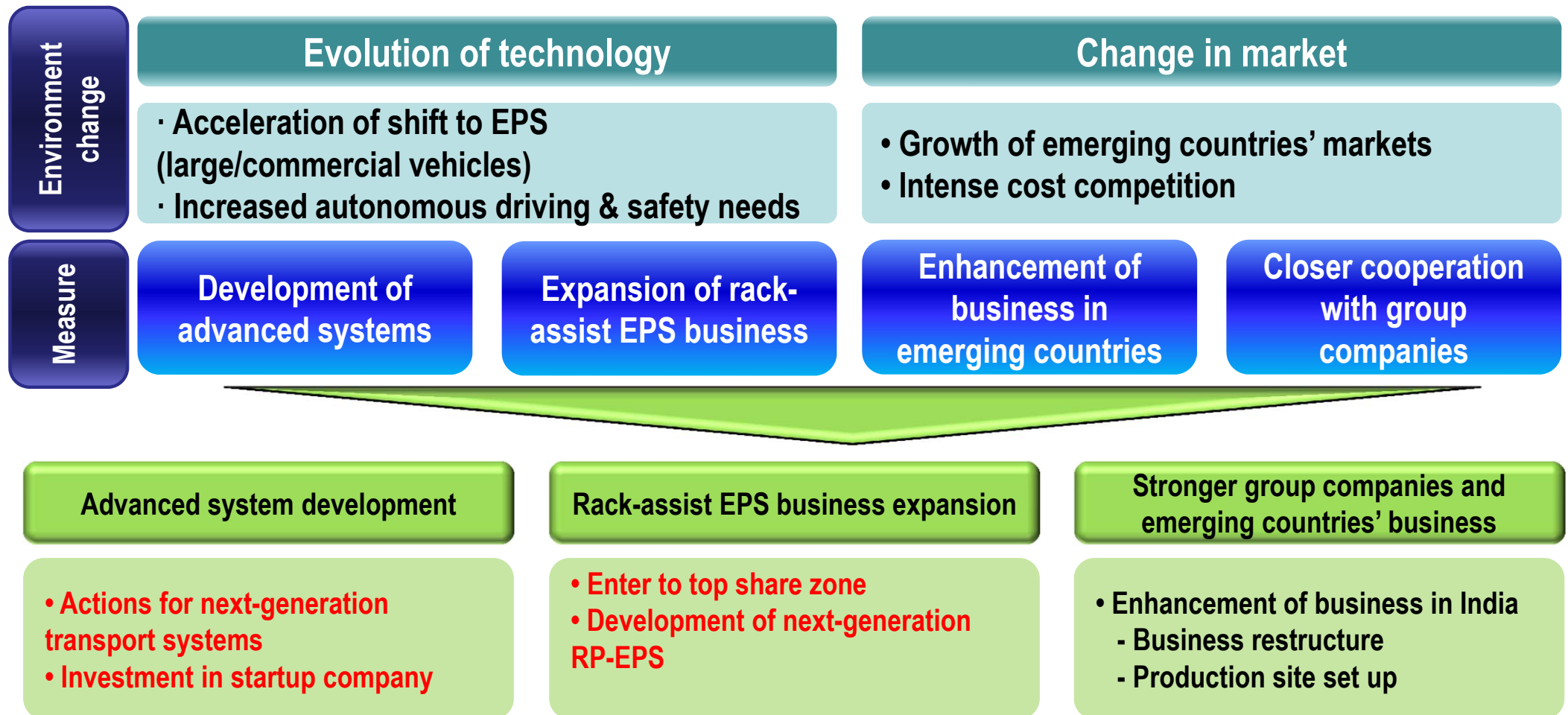


# 3) Steering Systems

# 1. FY18 Main Action Results and Response

Development for practical use of advanced systems/ Investment in startup companies/Enhancement of rack-assist EPS business foundation/ Promotion of business enhancement in emerging countries

Continue to maintain the top share for steering, and to be “No. 1 & Only One” as the top runner with advanced steering technology such as ADAS



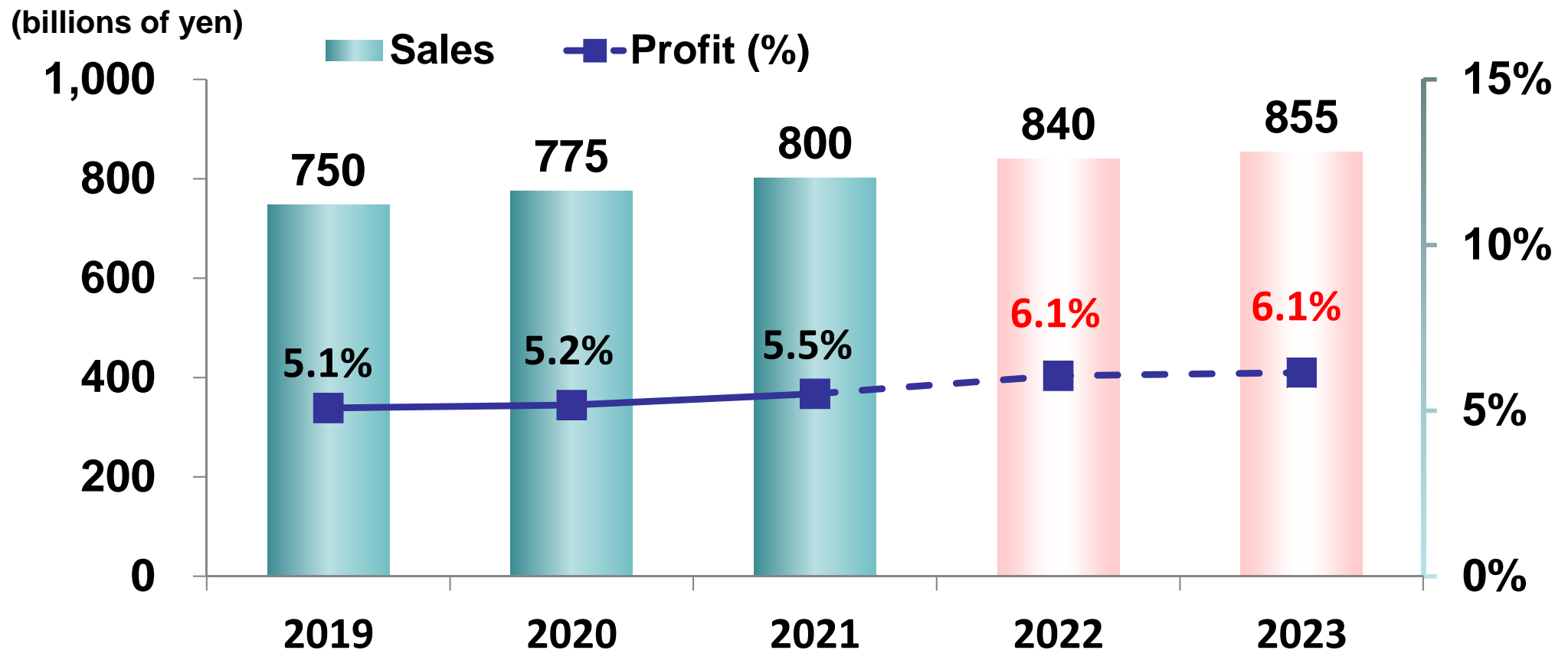
## 2. Steering systems Mid-term Business Plan Forecast

Sales and Profit Forecast from FY2019

¥95/US\$, ¥110/€, ¥16/yuan

Sales: Predicts favorable increase through rack-assist EPS business expansion

Profit: Aim to gain competitiveness through early achievement of planned cost and next-generation EPS market introduction



# 3. Strategies After 2019 (Advanced systems)

Contribution to solving social issues in public transport/logistics fields through the practical use of autonomous driving technologies in collaboration with a startup company

<Next-generation public transport system>  
Contribute to next-generation mobility with autonomous driving and precise docking control technology, and aim to solve unprofitable bus route

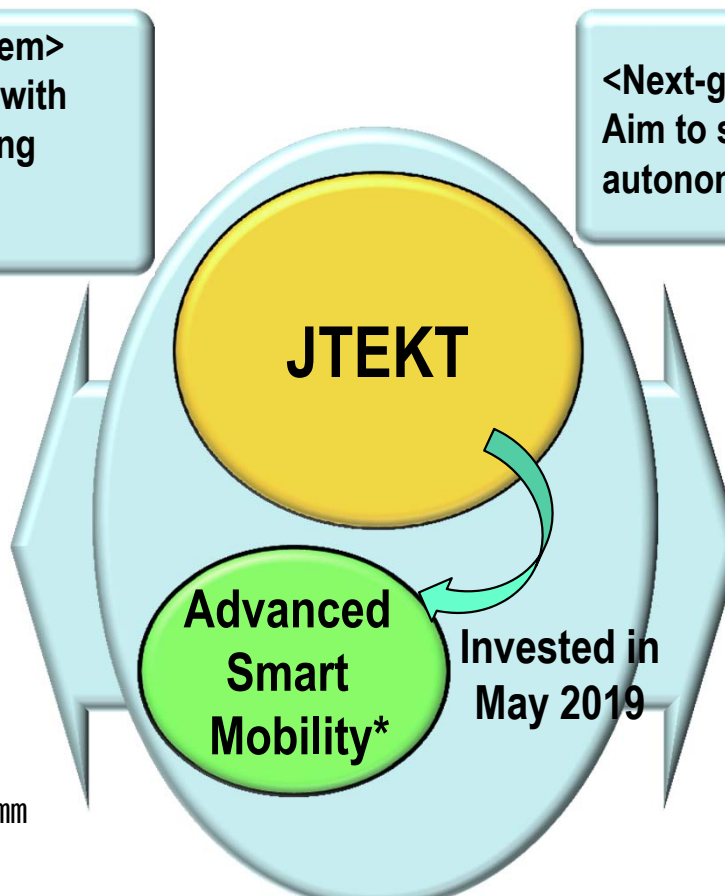


Boarding with stroller  
(Bus pulled over to sideways  $\pm 40$  to 20 mm and stopped)

<Next-generation logistics system>  
Aim to solve driver shortage through autonomous driving of large vehicles



Conceptual image of truck platooning



## Advanced Smart Mobility Co., Ltd. (established in 2014)

University of Tokyo startup company engaged in autonomous driving technologies and system application development

Ratio of controlling share: JTEKT: 21.7%, SB Drive: 21.7%,

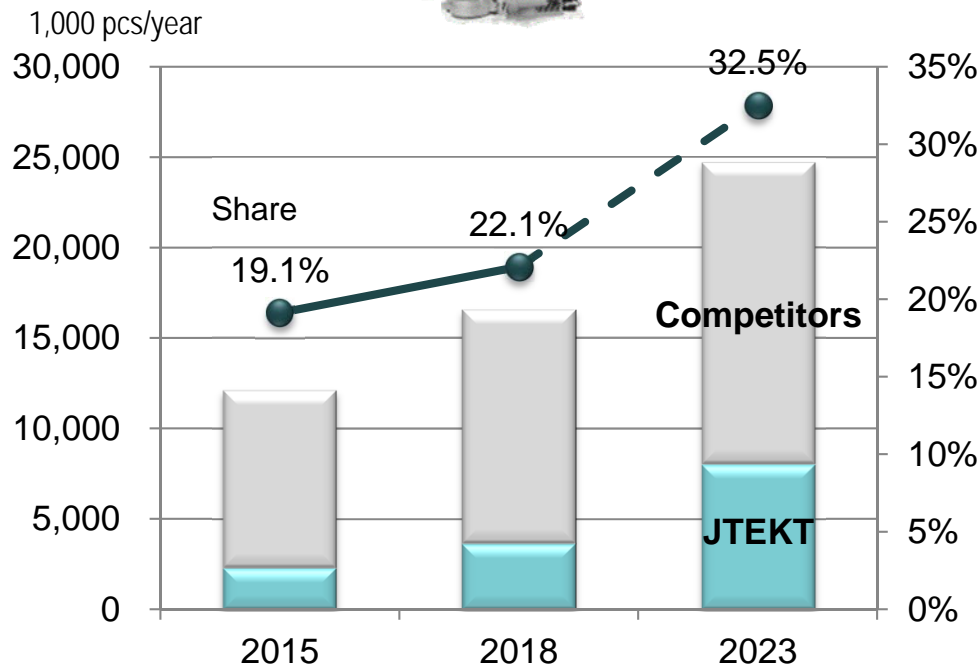
Aichi Steel: 16.2%, Four founding shareholders: 40.4%



# 4. Strategies After 2019 (Expansion of rack-assist)

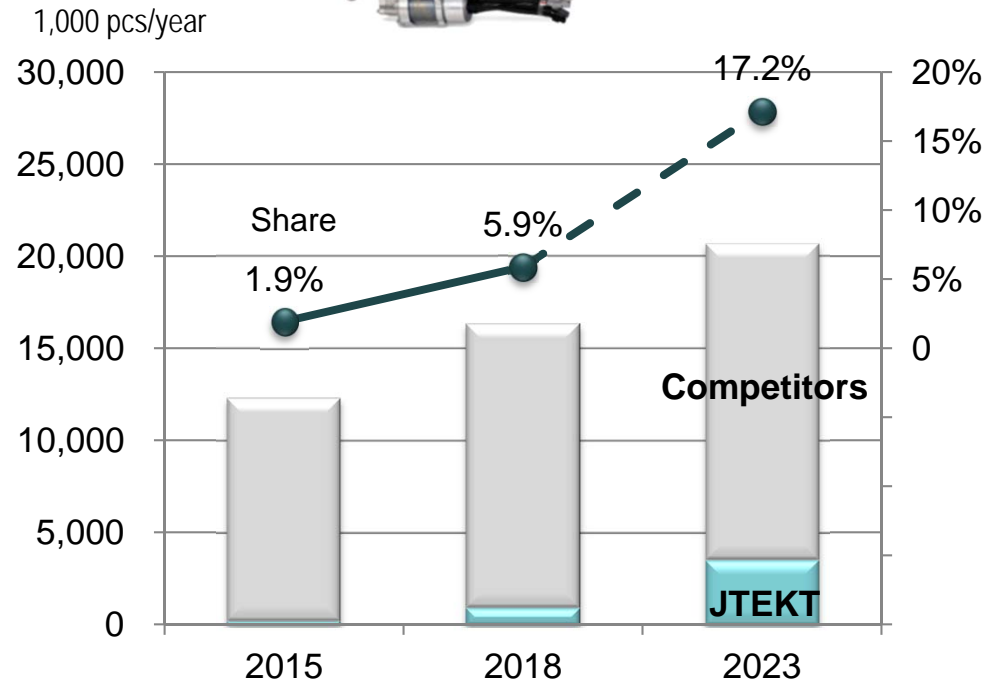
## Expand rack-assist EPS business and improve profitability

**DP-EPS (Dual pinion type)**



**Enter top share zone**

**RP-EPS (Rack parallel type)**



**Recover delay and increase share and volume**

**Improvement of profitability through early achievement of planned cost**

\* Investigated independently by JTEKT based on market data

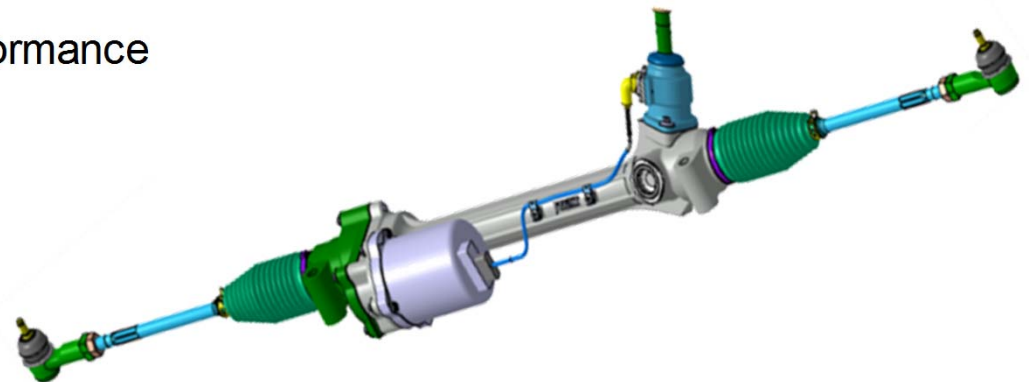
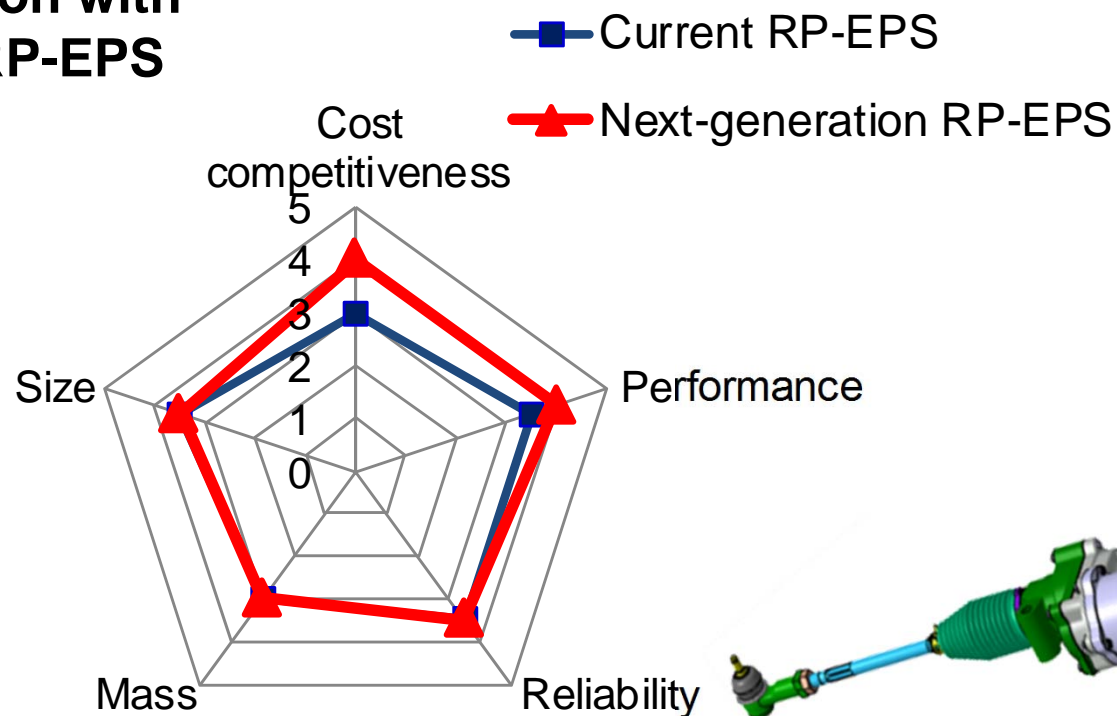


Development of next-generation RP-EPS for expanding rack-assist EPS business (towards the market introduction by the end of FY2021).

### ◆ Aim of Development ◆

Develop low-cost and high-performance RP-EPS to improve our competitiveness

### Comparison with current RP-EPS



# 4) Drivelines

[List of Abbreviations]

AWD: All Wheel Drive

CVJ: Constant Velocity Joints

TCD: Torque Control Device

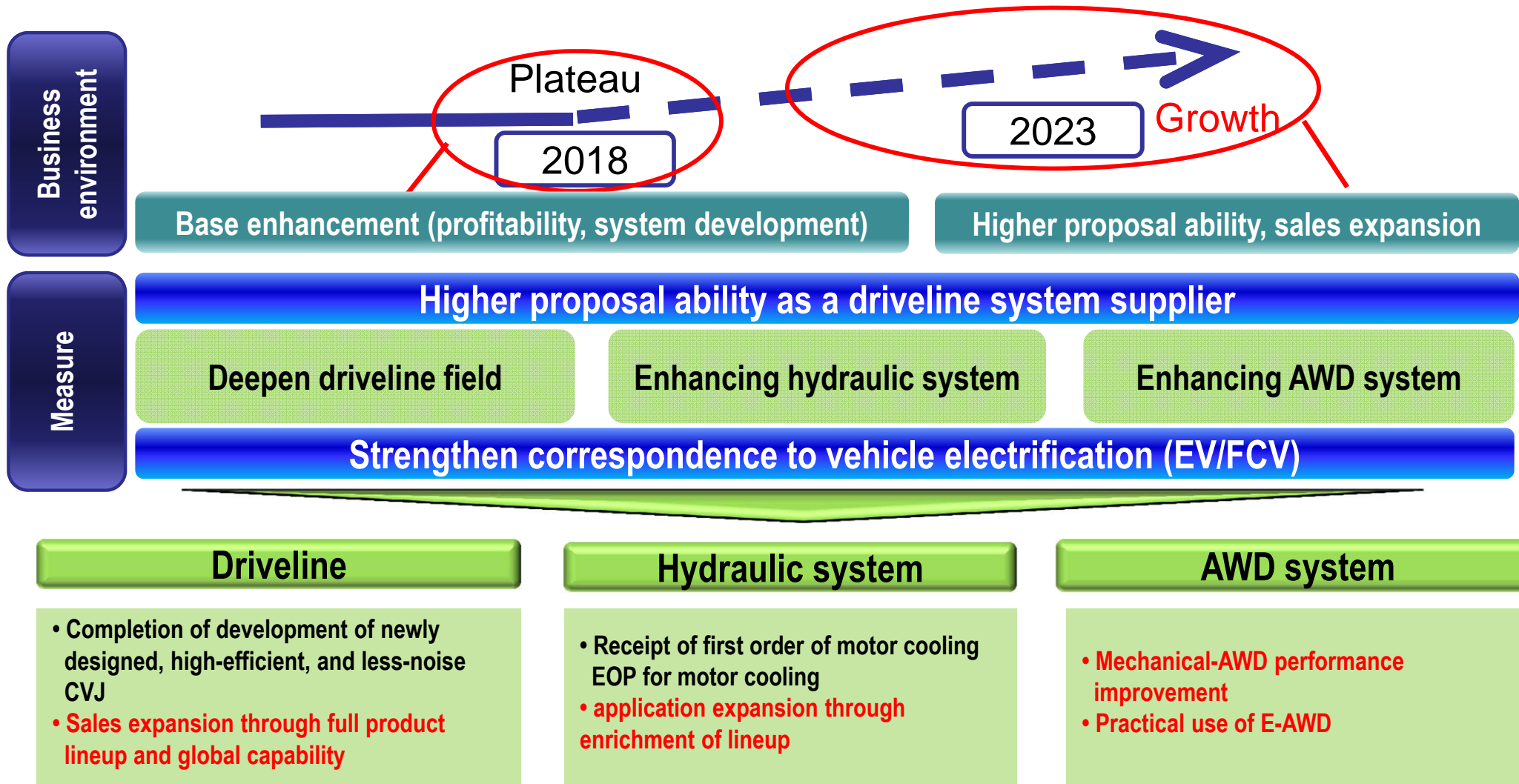
ITCC: Intelligent Torque Controlled Coupling

TORSEN: Torque Sensing Limited Slip Differential

# 1. FY18 Main Action Results and Response

Promoting deepening driveline field, enhancing hydraulic systems and enhancing AWD systems, as a base enhancement for business expansion

As a distinctive system supplier that takes advantage of strengths such as AWD and hydraulics, aim to become “No. 1 & Only One” for the driveline business.



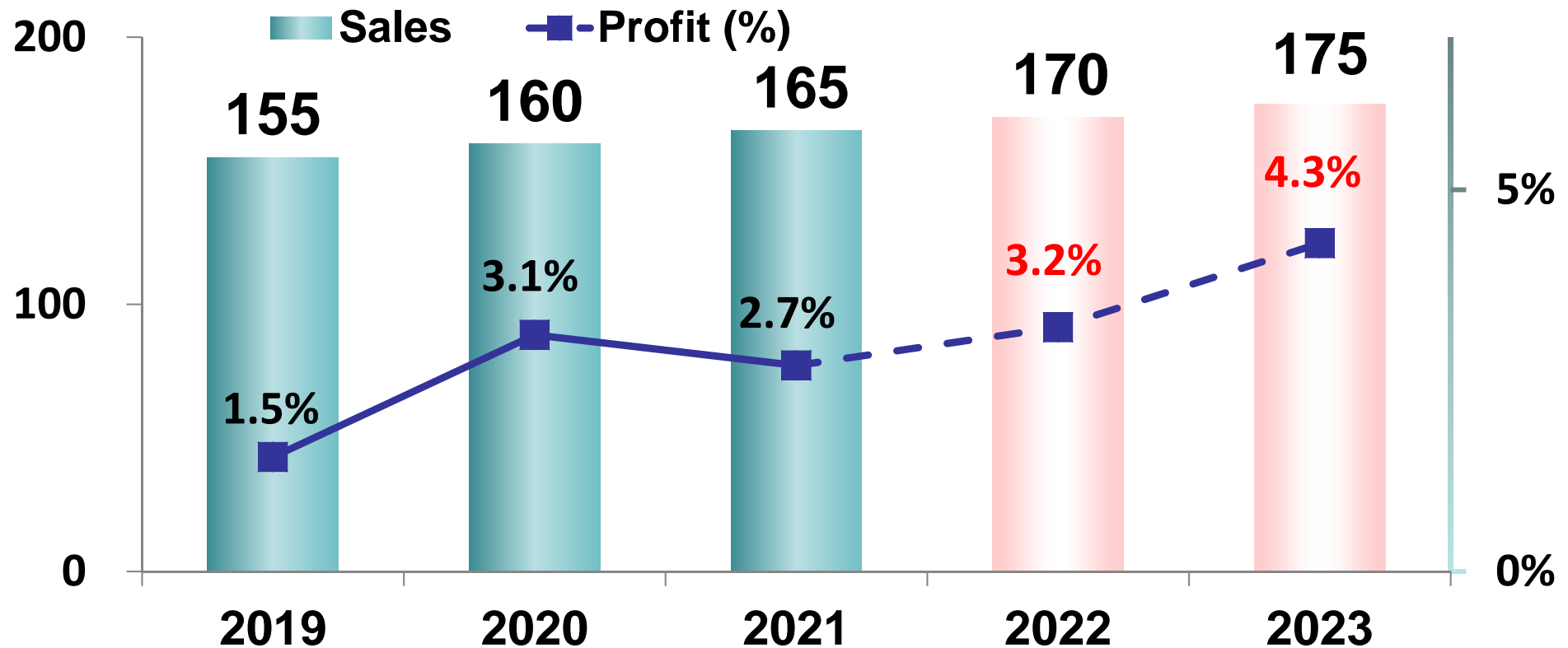
## 2. Drivelines Mid-term Business Plan Forecast

Sales and Profit Forecast from FY2019

¥95/US\$, ¥110/€, ¥16/yuan

Sales: Predicts steady sales increase towards 2023  
Profit: Early achievement of planned cost, aims to increase profitability through productivity improvement

(billions of yen)



Promote sales expansion of products adaptable to various vehicles (EV/HV/ICE) through the enrichment of product lineup and stronger global capabilities

### Enrichment of lineup

- Full product lineup through size expansion
- Size enrichment of high-efficient CVJ series
- Highfunction products development (High rigidity and quietness excellent products)

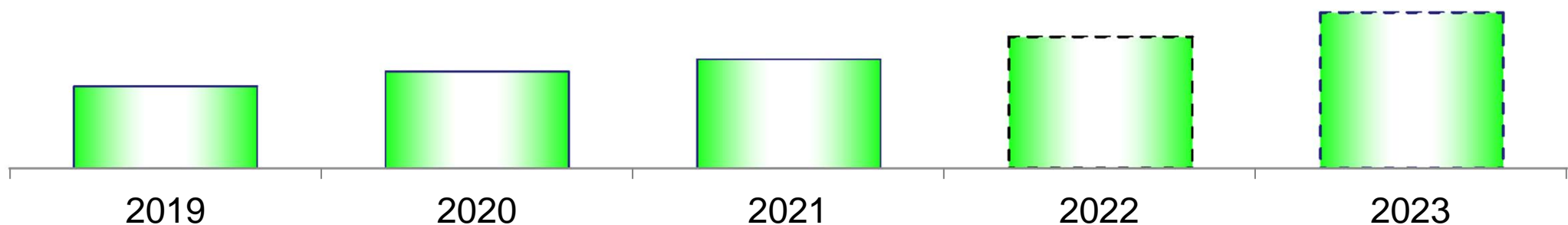
Supports vehicle electrification

### Stronger global capability

- Organize global production structure  
⇒ Target markets: North America, ASEAN
- Localization of application development  
⇒ Enhance local employees' ability of response for business deals

Efficient use of our worldwide locations



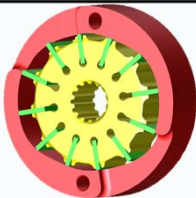
Driveline sales transition (future image)



Responds to various application by lineup expansion that leverage strengths

### Mechanical pump (MOP)

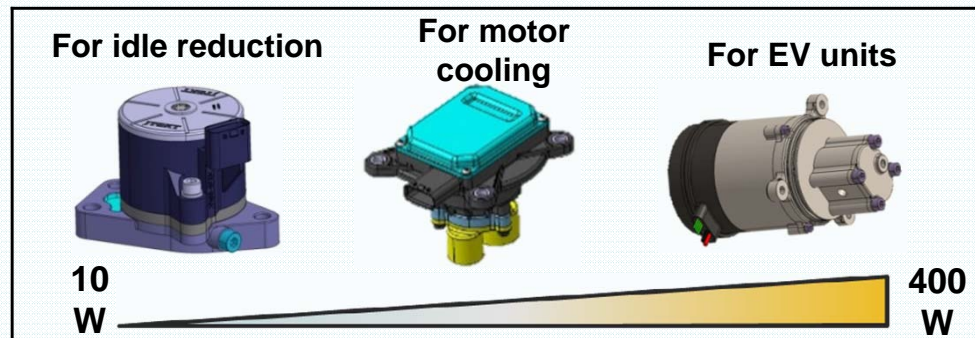
Strength: Able to propose three pump types

Internal gear type	External gear type	Vane type
		
Less noise, low cost	High output, low cost	Less noise, high output

Propose high-performance pumps suitable for customers' applications

### Electric pump (EOP)

Strength: Design/manufacture from ECU/motor



Propose compact and lightweight products based on the accumulated steering and idle reduction engineering

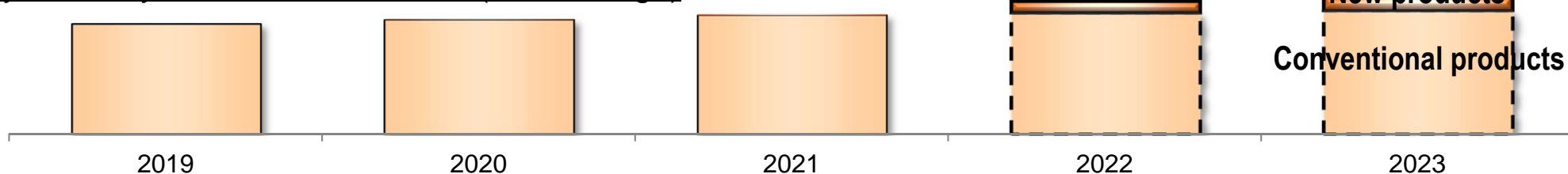
### Lineup enrichment for application expansion

Cooling (EV motor)

Lubrication (Transmission)

Actuator (E-AWD) \* (Representatives)

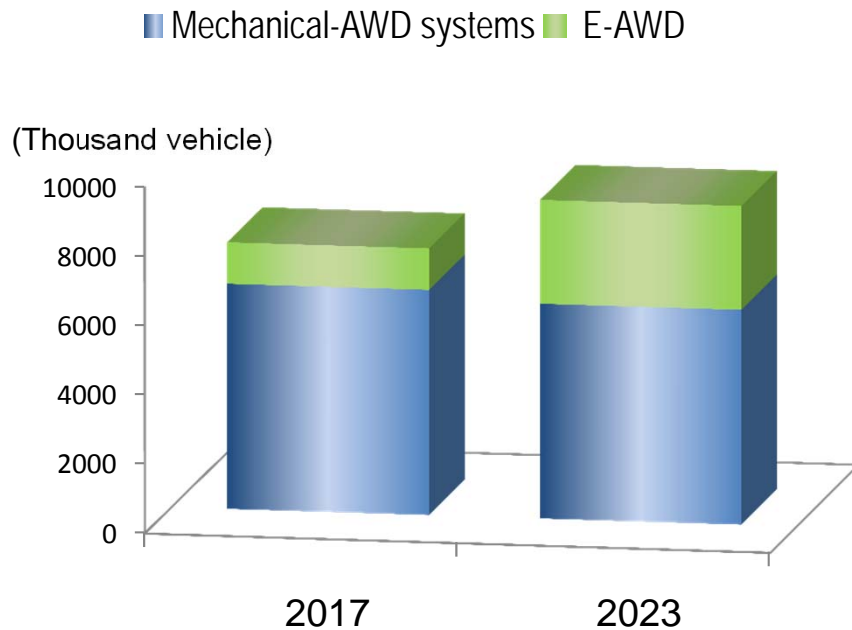
Hydraulic systems sales transition (future image)



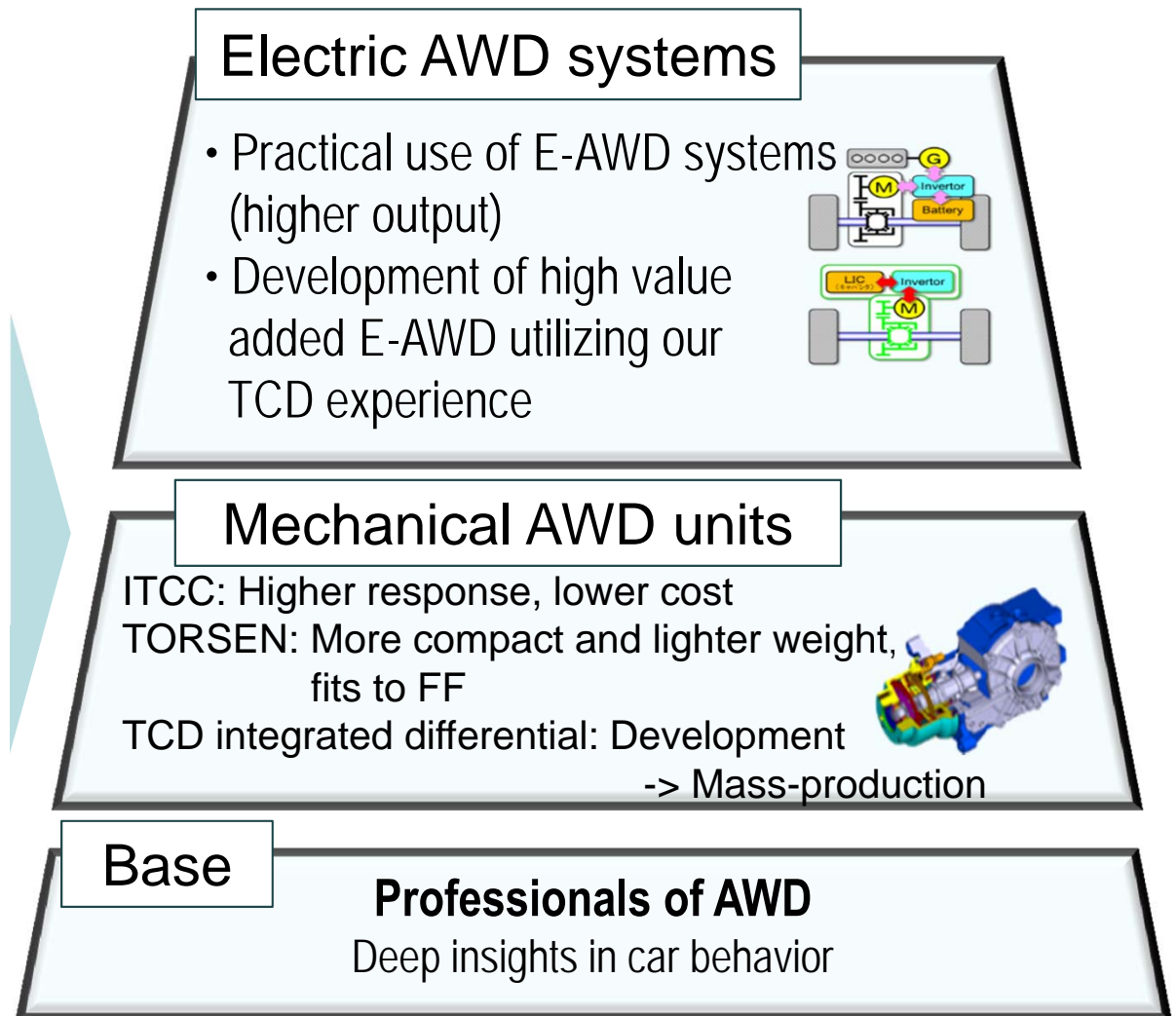
# 5. Strategies After 2019 (Strengthening of AWD system)

As a group of AWD professionals, responds in view for electrification and mechanical AWD demands

## AWD electrification forecast



- Technological innovation and fuel efficiency regulations of each country ⇒ Steady progress in electrification
- Mechanical systems also still accounts for large percentage



# 5) Bearings

(Abbreviation list)

TRB: Tapered Roller Bearing

HUB: Hub unit

NRB: Needle Roller Bearing

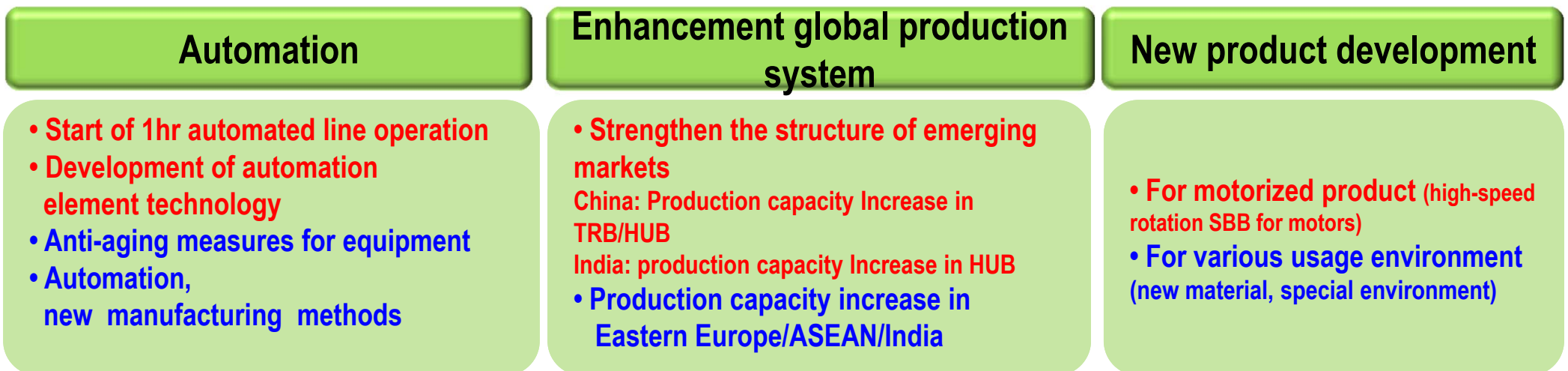
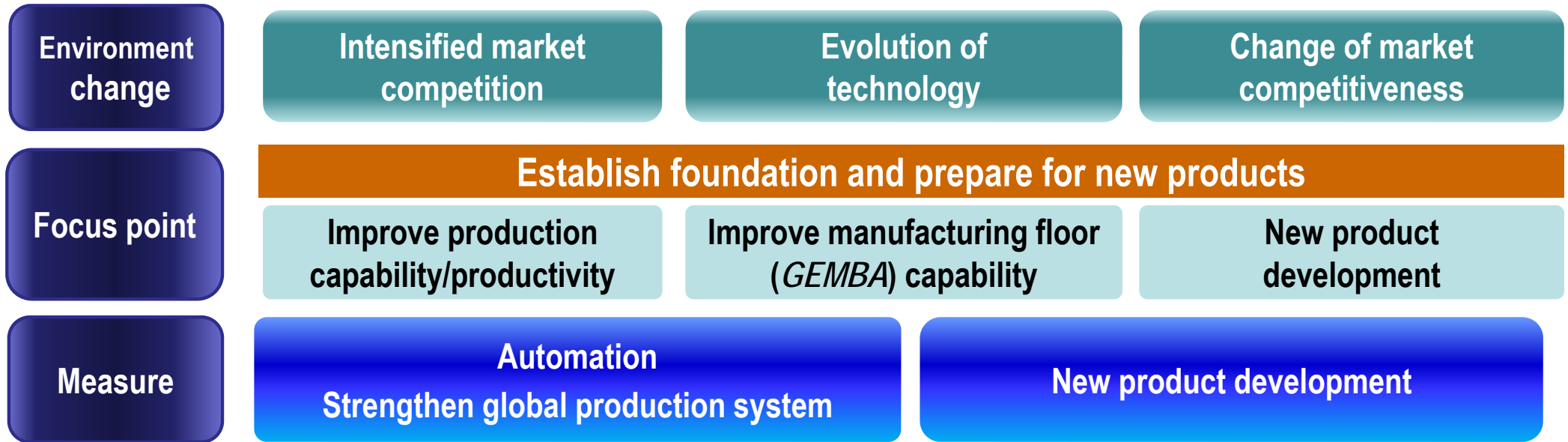
SBB: Single Ball Bearing

LFT: Low Friction Torque



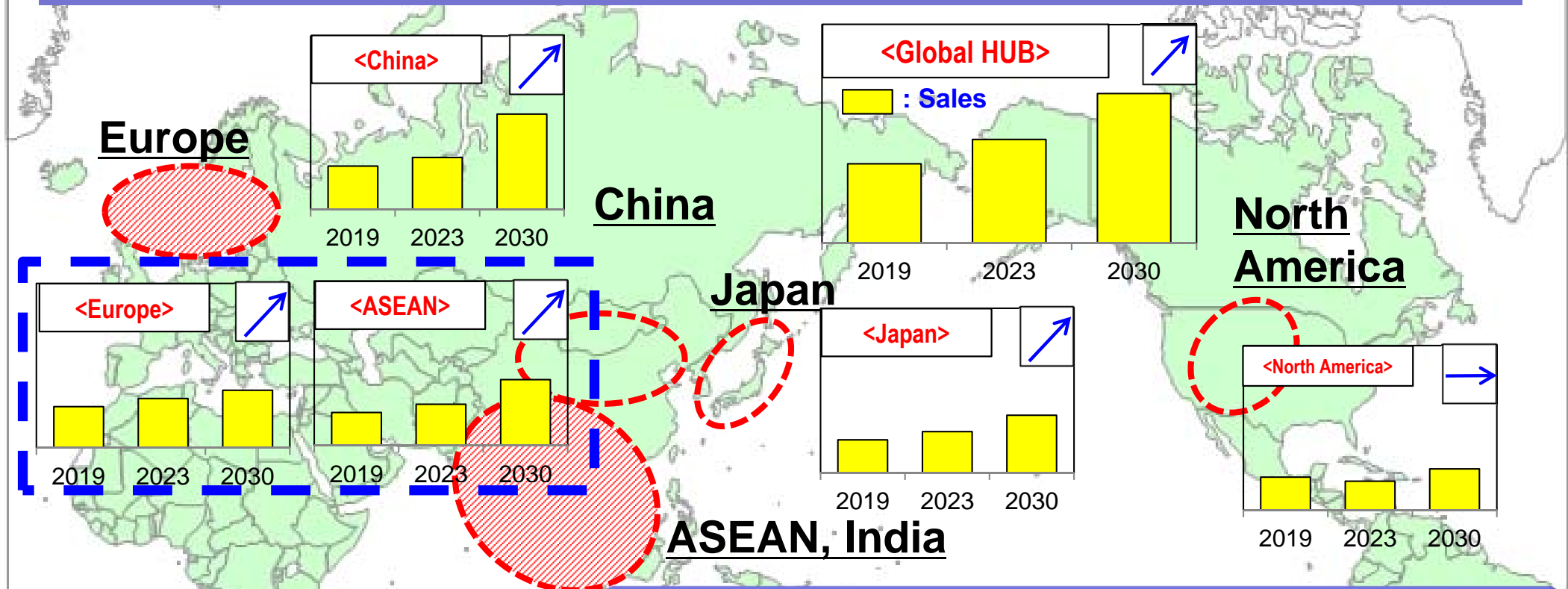
# 1. FY18 Main Action Results and Response

Continue to create value, impress customers, and praised by customers  
— Lift the "Koyo" to be the leader brand in the world —



# 1. Business Strategy After FY19 (Strengthen production system)

## Strengthen hub unit production system



### Production in Europe

- Enhance European market competitiveness
- Two locations for Europe (Romania plant in addition to UK plant)

### Production in ASEAN and India

- Respond to ASEAN market
- Two locations for ASEAN (Indonesia plant in addition to Thailand plant)
- Respond to Indian market
- Two locations for India (Gujarat in addition to Haryana)

# 2. Business Strategy After FY19 (For electrification)

## Product development for vehicle electrification

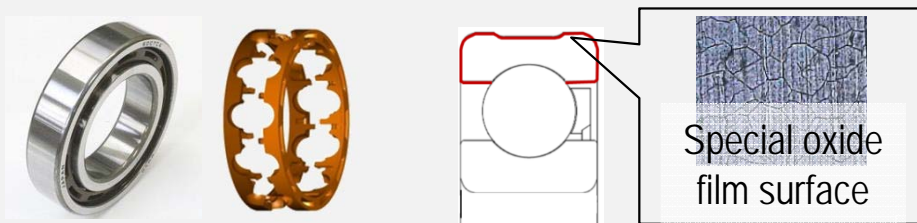
### ◆ SBB

Contribute to downsizing of motor and reducer

Respond to high speed rotation, improved creep resistance/corrosion resistance/silence

[SBB for high rotational speed]

[Creep resistant SBB]

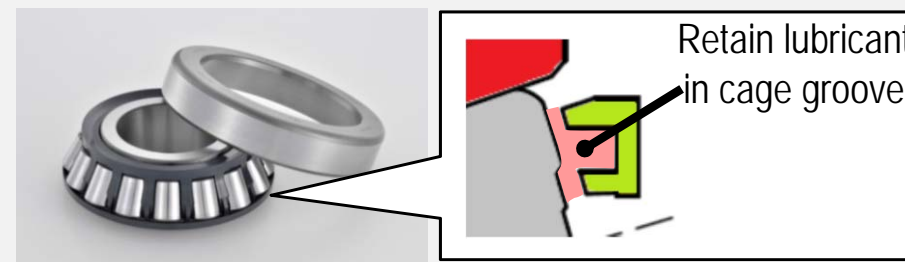


### ◆ TRB

Contribute to lower loss of driving unit

Less lubricant, lower viscosity, lower torque

[Improved seizure resistance TRB]

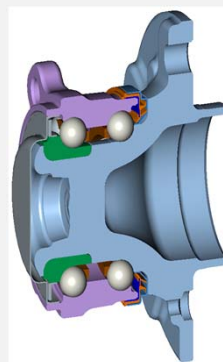


### ◆ HUB

[Lightweight/low torque HUB]

Contribute to fuel efficiency and vehicle control

Lighter weight, lower torque, road surface condition sensing technology

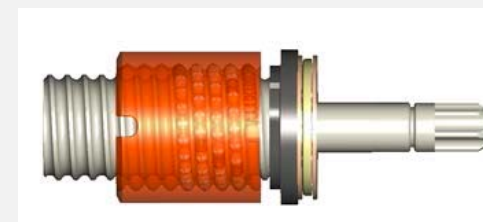


### ◆ Ball screw

For motor-driven brake

High-efficient, more compact

[Ball screw for electric actuator]



# 3. Business Strategy After FY19 (For usage environment)

## Product Development for various usage environment

### ◆ New material (NK bearing)

**NK : new advanced knowledge**

- Long life, high durability
- Compact



[Application]

- Agricultural and construction vehicle
- Transmission, axle



Press release on February 2019

### ◆ Railway vehicle

- Long life, high durability
- Less torque fluctuation
- Improved mountability



Auxiliary driveshaft with rubber coupling

[Application]

- Diesel car

Press release on November 2018

### ◆ Sport

**Broadcasted on a Japanese TV program  
on July 25, 2018**

- Super low torque
- Lightweight
- High durability



Super low torque deep groove ball bearing

[Application]

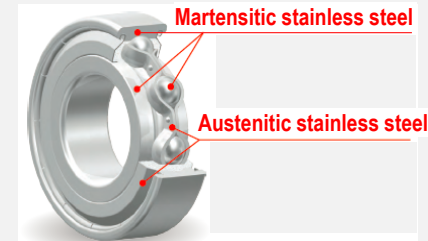
- Skateboard



Press release on July 2018

### ◆ Special environment

- For super high temperature environment ( $\leq 300^{\circ}\text{C}$ )
- Low gas emission
- Long life



Super high temperature grease enclosed bearing

[Application]

- Semiconductor manufacturing equipment
- Film manufacturing equipment

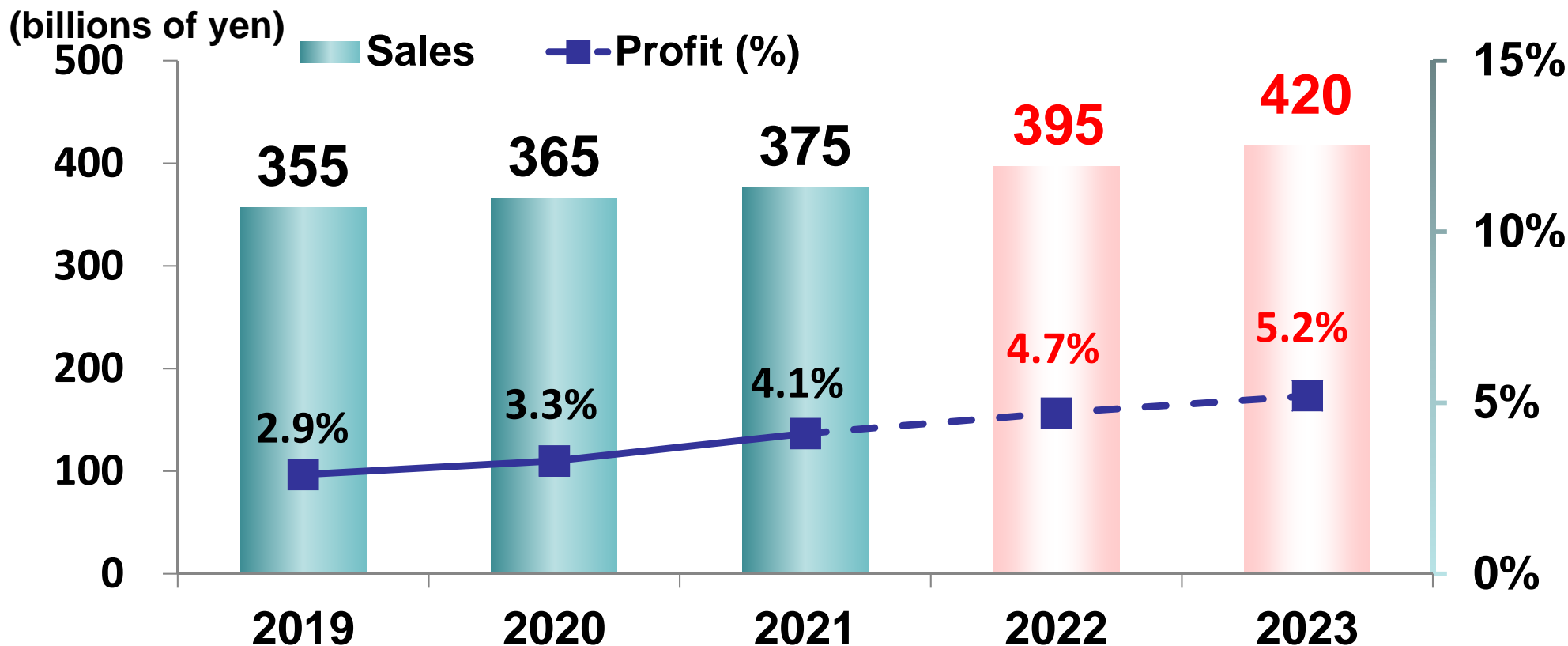
Press release on December 2018

# 4. Bearings Mid-term Business Plan Forecast

Sales and Profit Forecast from FY2019

¥95/US\$, ¥110/€, ¥16/yuan

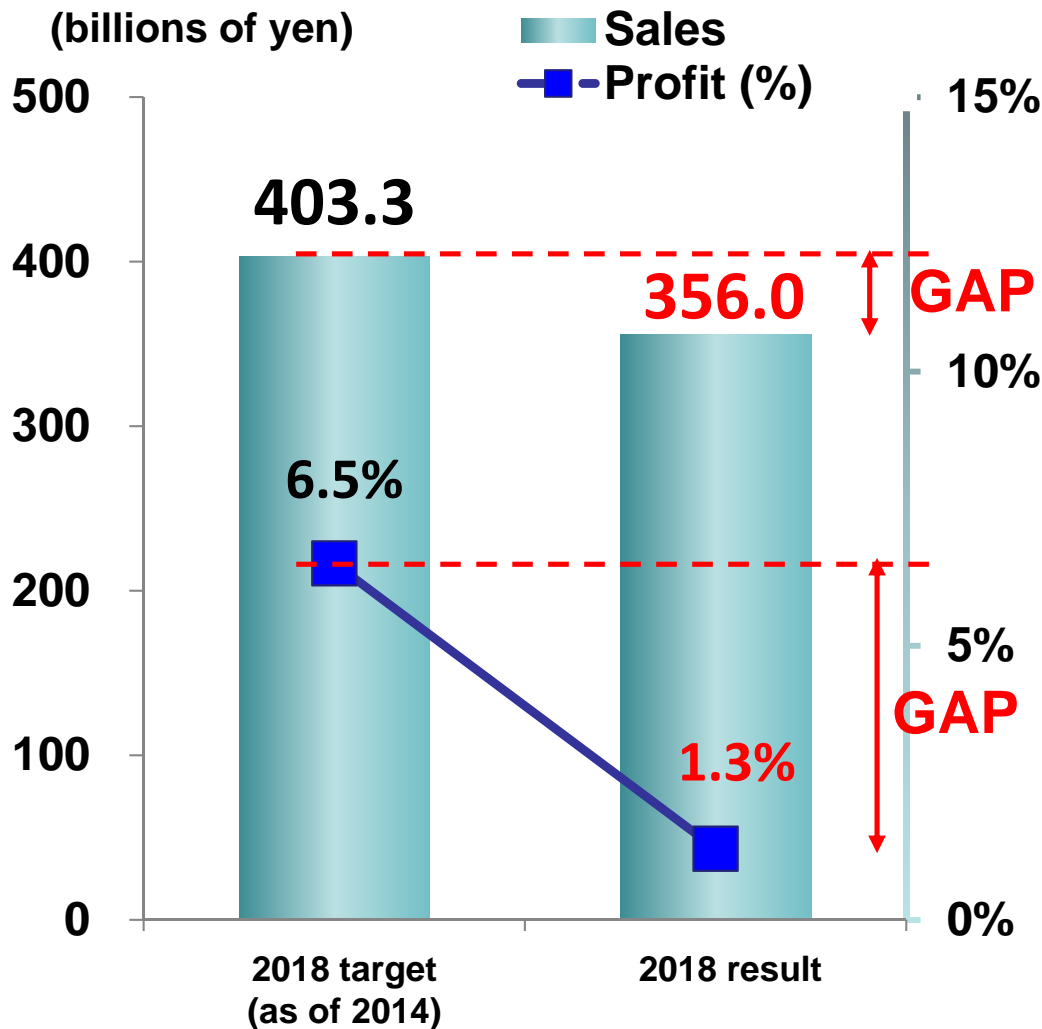
Sales: Aim for steady increase in sales towards FY23  
⇒ New product introduction (Automotive BRG: For EV use,  
Industrial BRG: For special environment use, etc.)  
Profit: Aim for profitability improvement by enhancing cost reduction  
activities and productivity improvement



# 5. Factors and Measures for Gap Between FY18 Results and Mid-term Plan

Sales and profit largely not achieved the initial mid-term business plan made 2014

## Target and result of FY2018



## Factor of gap

- Less production and sales
- Material price increase
- Stagnation of productivity improvement (delay in HR development, equipment aging)
- Reorganization loss cost (Rebuilding costs in Japan, Europe and North America, review of supply chains in Japan)

## Measures

1. Cost reduction activity enhancement
2. Productivity improvement
3. Reorganization/Review of system

See next page for details

# 6. Factors and Measures for Gap Between FY18 Results and Mid-term Plan

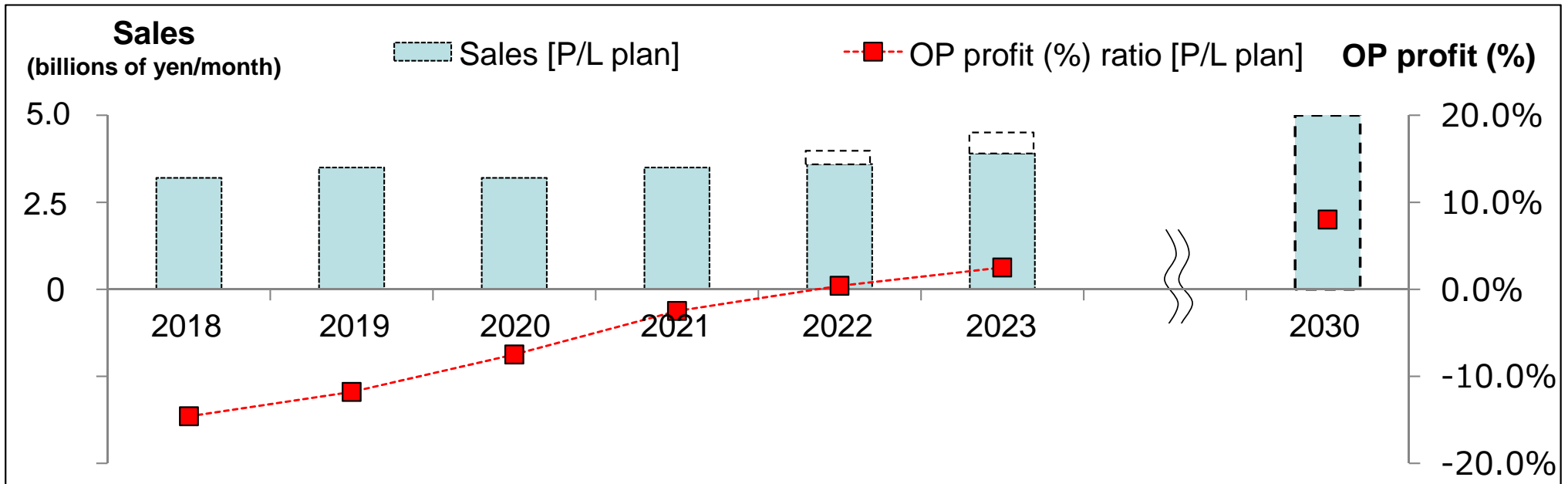
## Key measures after FY2019

### Concrete Measures

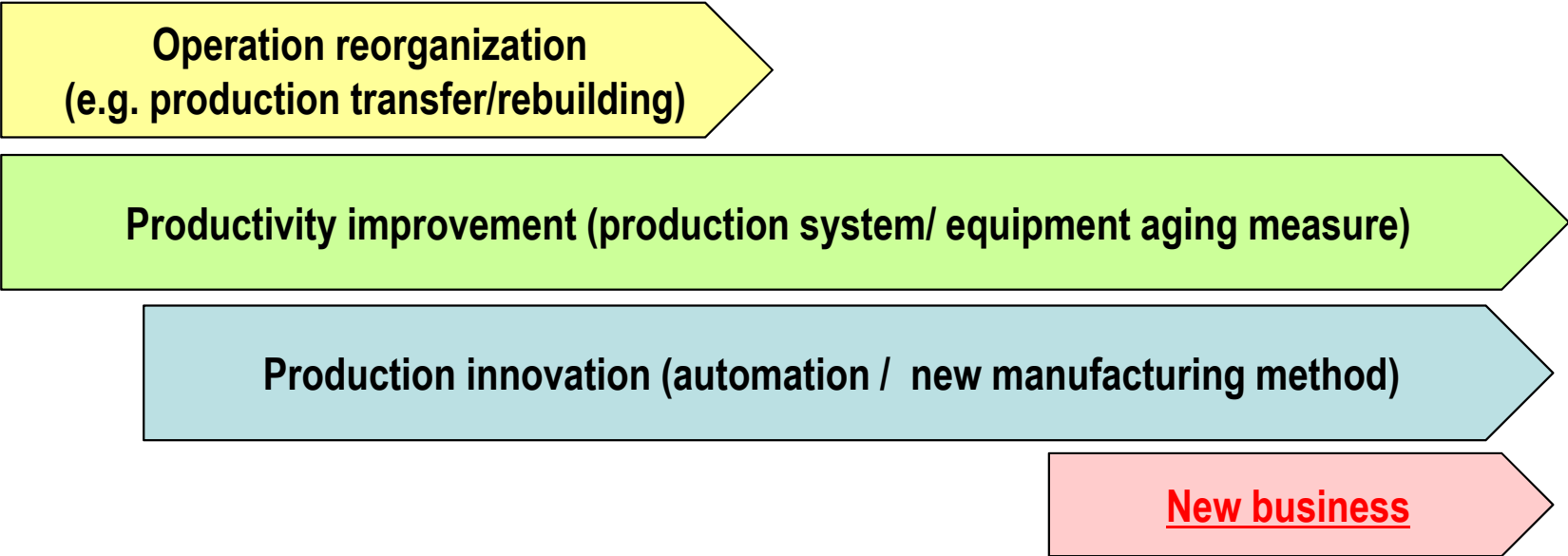
<p><b>1. Strengthen cost reduction activities</b></p>	<ul style="list-style-type: none"> <li>• <b>Obeya activity*</b> <ul style="list-style-type: none"> <li>- Review activity promotion system (Board member/Plant manager)</li> <li>- Enhance VAVE activity</li> </ul> </li> </ul> <p><small>*Obeya activity: Multifaceted examination and information sharing at one time by the meeting of all concerned sections and parties at one location.</small></p>
<p><b>2. Productivity improvement</b></p>	<ul style="list-style-type: none"> <li>• <b>Production system reform (streamlining)</b></li> <li>• <b>HR development, development of multi-skilled worker (through JPS training)</b></li> <li>• <b>Equipment aging measure (3-year plan: 2018-2020)</b></li> <li>• <b>Automation</b></li> <li>• <b>New manufacturing method</b></li> </ul>
<p><b>3. Reorganization/ Review of system</b></p>	<ul style="list-style-type: none"> <li>• <b>Japan: Production reform and improvement, safety response and rebuilding</b></li> <li>• <b>North America, Europe: Reformation of each product type (HUB, NRB, SBB, TRB)</b></li> </ul>

# 7. Kokubu Plant: Ongoing Structural Reform

## Kokubu Plant P/L Change



### Main activities

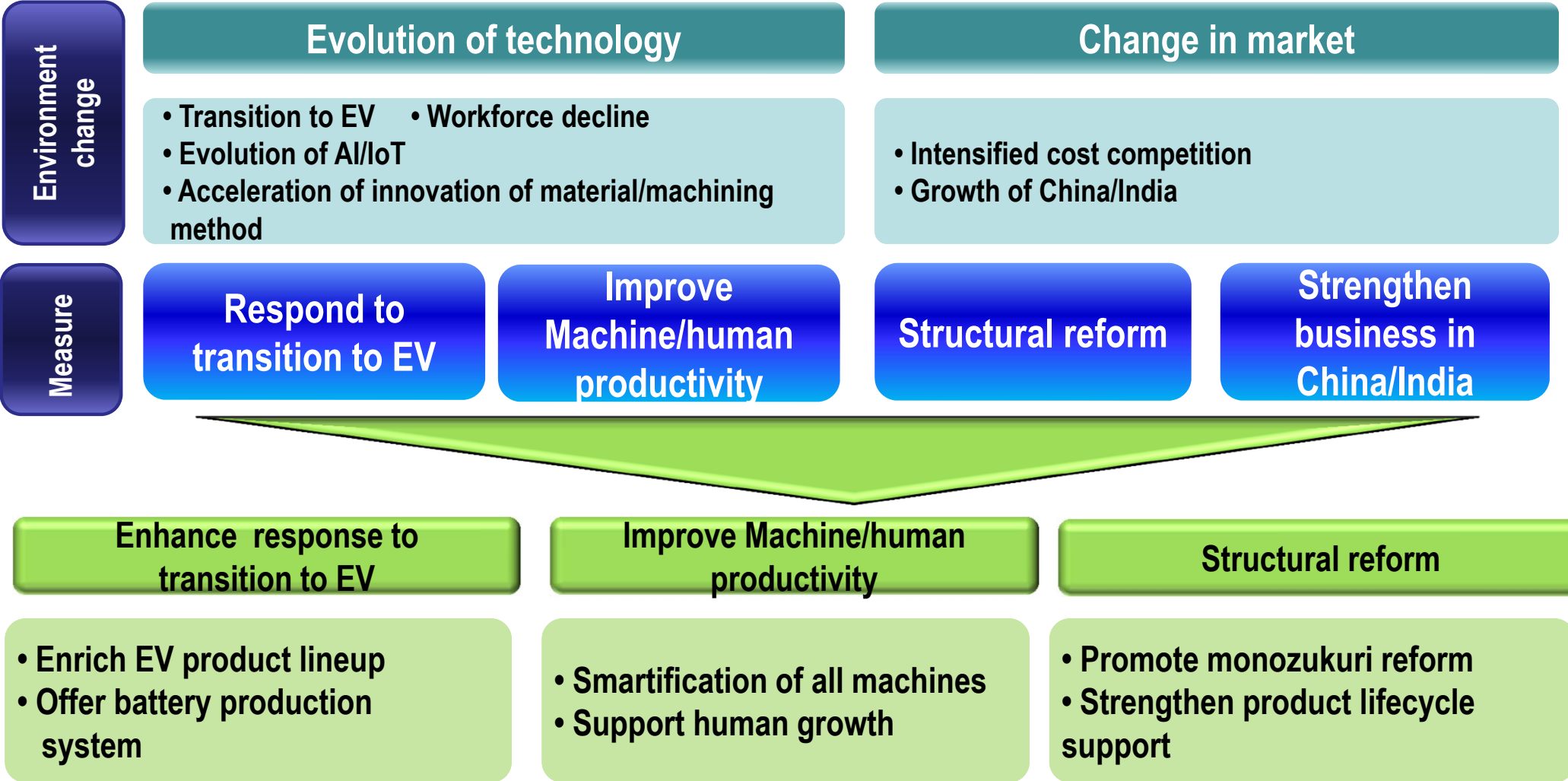




# 6) Machine Tools & Mechatronics

# 1. FY18 Main Action Results and Response

**Offer value in all monozukuri phases**  
 - Contribute raising value of customer with our “Only one technology” -



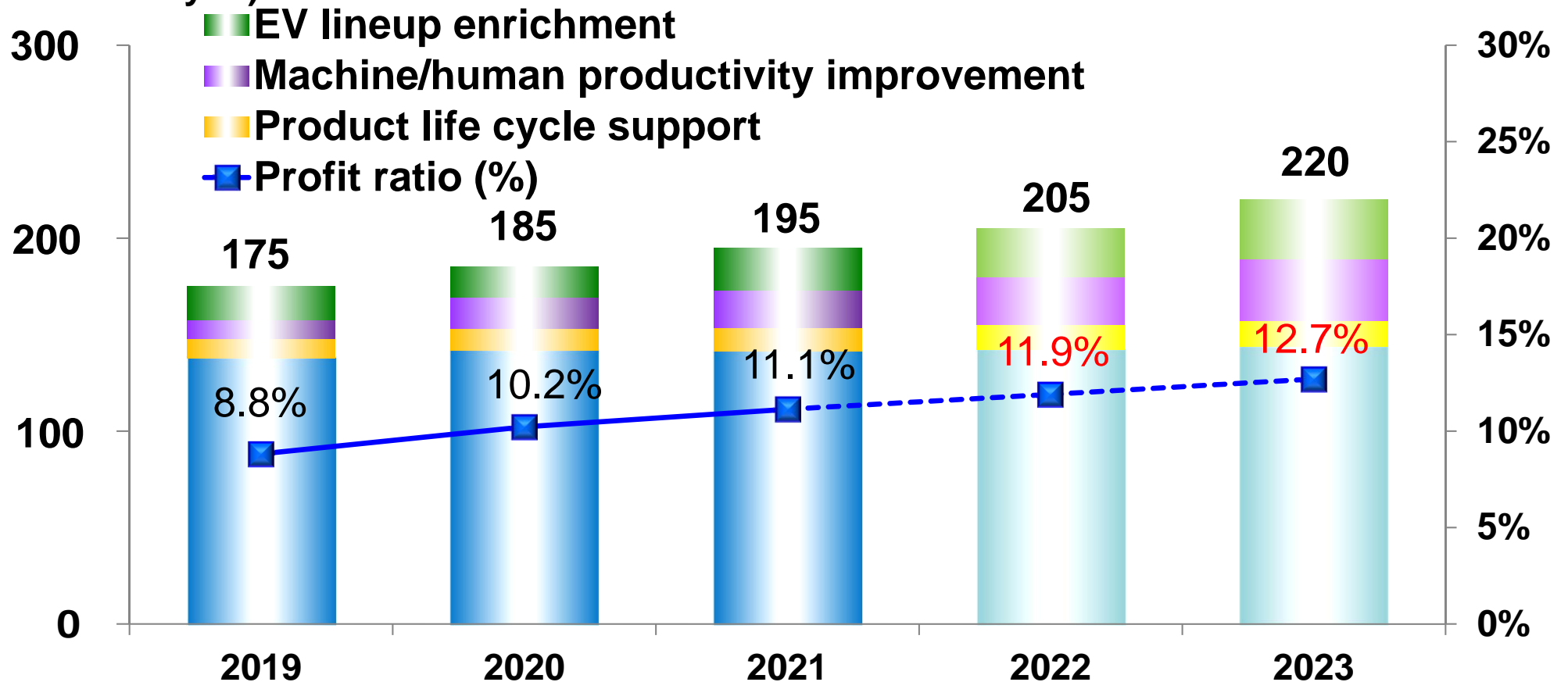
# 2. MT & M Mid-term Business Plan Forecast

Sales and Profit Forecast from FY2019

¥95/US\$, ¥110/€, ¥16/yuan

Pursuit of required new values to contribute to raising customers' values  
Promotion of structural reform for solid revenue base

(billions of yen)



# 3. Strategy After FY19 (EV lineup enrich)

Enrich product lineup for EV by leveraging our grinding and skiving strength  
 Offer wide range between highly accurate machining roll grinder to battery production system

Improve EV component machining productivity

Offer battery production system

Motor shafts



Reduction gears



**Skiving**



Reduction gear eccentric shafts



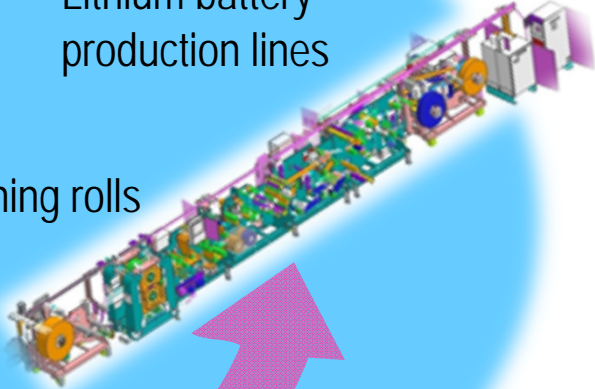
**Grinders**



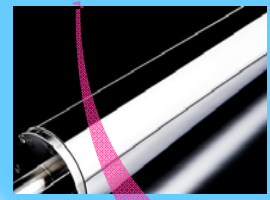
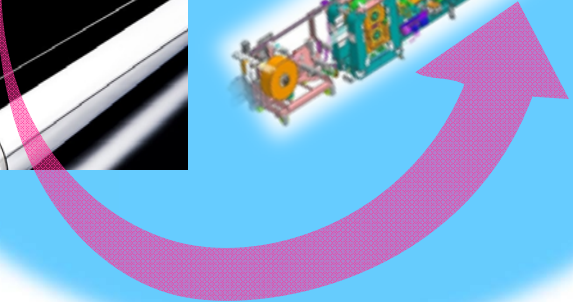
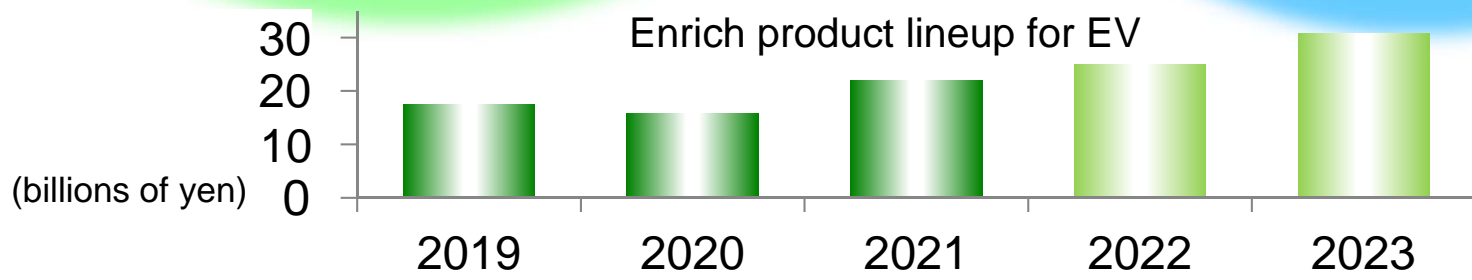
Power semiconductor wafer




Lithium battery production lines



Highly accurate machining rolls

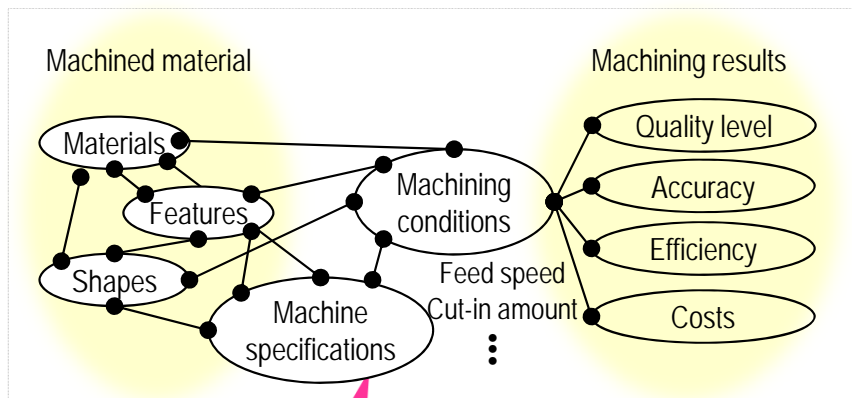
# 4. Strategy After FY19

## (Machine/human productivity improvement)

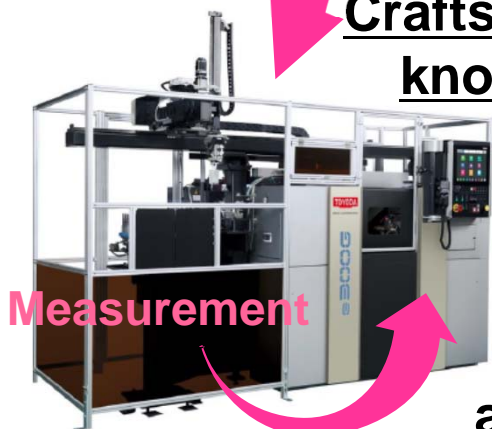
Smartification of all machine tools with our accumulated machining skills  
 Utilize data and roll out products that support maximum operation and human growth

Machine tools independent from skilled worker

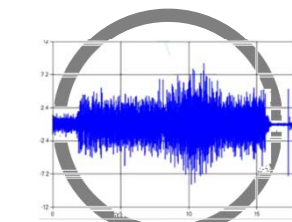
Support human ability improvement



**Craftsmanship know-how**



**Quality autonomy**



**Symptomatic management**



**Data collection**



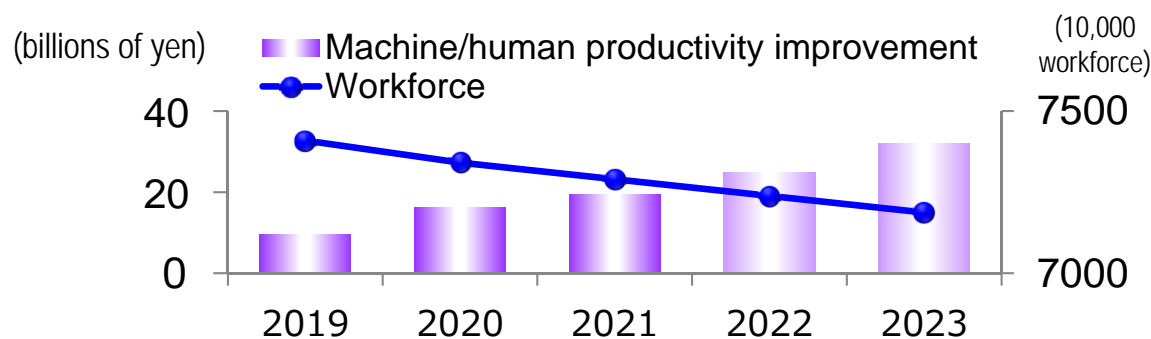
**Max. operation**

E/C	F/F	PLAN
1	1	800
2	2	ACTUAL
3	3	780
U/B	U/R	OPR
7	3	97.5
6	2	OT
5	1	0.5
4	3	
3	2	
2	1	
1	0	
M/B1	S/M-R	M/B2
1	1	5
2	2	4
3	3	3
4	4	2
5	5	1
6	6	0
7	7	

**e-factory management**



**Human growth app**



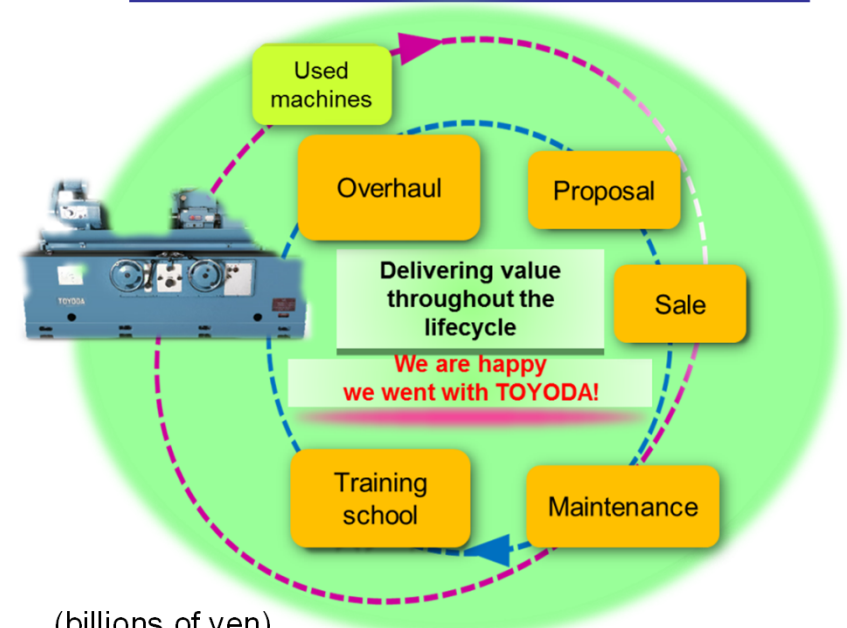
# 5. Strategy After FY19 (Structural reform)

Expansion of production volume through monozukuri reform  
emphasized on production lead time  
Strengthen revenue base through  
stronger product lifecycle support

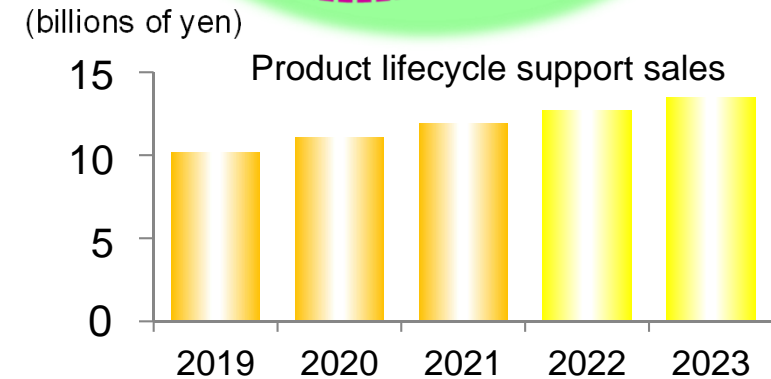
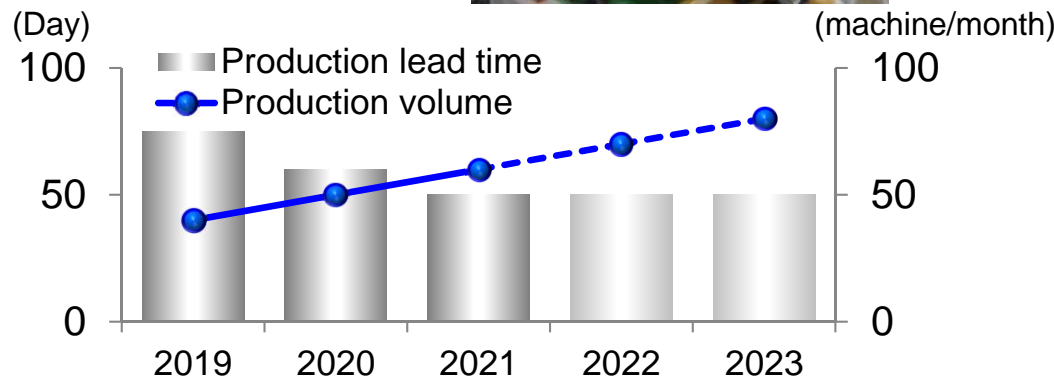
## Just-in-Time supply



## Stronger product lifecycle support



## IoT-utilizing Kaizen



## 2. Actions to Achieve Higher Corporate Value

- Enhancement of Fundamental Basis -

## 3-2) Actions for Developing Corporate Value

Follow the reliable growth trend on a medium-to long-term basis

Environment  
change

Decline in workforce

Engineering innovation (AI, IoT)

Higher importance on governance

Work style diversity

Measure

Work style reform

R&D Structure Improvement

Enhancement of ESG activities

Sophistication of human resources

Acquisition of ESG ratings

Opening of innovation center



## 3-2-1) Results of Encouraging ESG Activities

### Inclusion to FTSE Japan Index\*

- ◆ Our ESG activities were rated high from an internationally influential ESG rating institute FTSE

\*FTSE4Good Index Series and FTSE Blossom Japan Index

Item	JTEKT	Sub Sector Avg.: Auto Parts	Country Avg.: Japan
<b>ESG Rating (max. 5.0)</b>	<b>3.2</b>	<b>2.1</b>	<b>1.9</b>
<b>E</b> nvironment	<u>3.7</u>	<u>2.0</u>	<u>1.9</u>
<b>S</b> ocial	<u>3.3</u>	<u>1.8</u>	<u>1.5</u>
<b>G</b> overnance	<u>2.6</u>	<u>2.6</u>	<u>2.4</u>

## Received “Derwent Top 100 Global Innovators 2018” award

- ◆ JTEKT is elected to Clarivate Analytics sponsored “Derwent Top 100 Global Innovators 2018-19” four consecutive years which awards world’s innovative enterprises and institutes.
- ◆ There are four evaluation criteria (see below).  
JTEKT scored high in the “global performance” and “influence of the patent”

1. Number of patents:	Number of patents (number of patent acquired in the latest five years)
2. Success rate:	Percentage of the patent applied for which succeeded in the registry
<b>3. Global performance:</b>	Number of basic patents acquired in the primary markets (Europe, U.S.A., China, Japan)
<b>4. Influence of the patent:</b>	The degree of patent applied for which was cited at other companies’ inventions



## Certified to “The Health and Productivity Enterprises (White 500)” in consecutive three years

JTEKT’s activities were awarded by METI and certified to the “Large enterprise category of the 2019 Certified Health & Productivity Management Outstanding Organizations Recognition Program (White 500)” in consecutive three years in February 2019

### <Main activities>



For maintaining healthy mental state	For maintaining healthy body
<ul style="list-style-type: none"><li>• Mental-health measures</li></ul>	<ul style="list-style-type: none"><li>• Stop smoking challenge</li></ul>
<ul style="list-style-type: none"><li>• Return-to-work support for employees on leave on mental illness</li></ul>	<ul style="list-style-type: none"><li>• Specific health guidance</li></ul>
<ul style="list-style-type: none"><li>• Elimination of excessive work</li></ul>	<ul style="list-style-type: none"><li>• Health <i>Dojo</i> (Training)</li></ul>
<ul style="list-style-type: none"><li>• Enactment of “Health Day”</li></ul>	<ul style="list-style-type: none"><li>• Health guidance (stay overnight)</li></ul>
<ul style="list-style-type: none"><li>• Workplace improvement based on stress check-ups</li></ul>	<ul style="list-style-type: none"><li>• Data Health Plan</li></ul>

## 3-2-4) R&D Structure Improvement

“Construction of workplace stimulating employees’ intellectual imagination”  
- For activating communication and raising creativity and motivation

### JTEKT R&D INNOVATION CENTER Kariya (Kariya city, Aichi)

- R&D base of cutting-edge technologies

### G-JOIN (Ginza, Tokyo) (Ginza Jtekt Open INnovation center)

- Hub for external institution coordination and information exchange

#### Purpose of opening

- Acceleration of innovation creation
- Environment formation for new researches and development of human resource for innovation

#### Plan

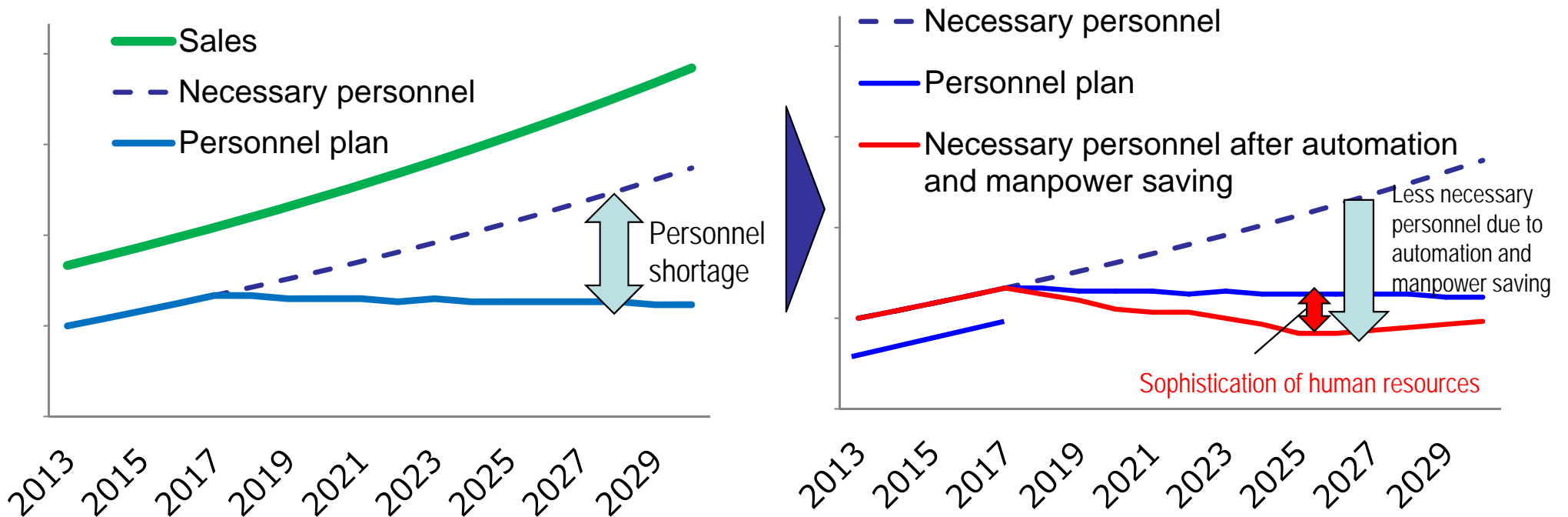
- Development of liberal environment in a location different from the present R&D bases to draw unique ideas (special area for R&D)
- Agile development with accelerated ideas, trials, and evaluation verifications based on Design Thinking
- Fusion of FFR\* Department (for new business field) and Data Analytics R&D Department (AI) for new value creation (\* FFR: Future & Frontier Research)
- Creation of various ideas through diversity

# 3-2-5) Actions for Work Style Reform

Improving manufacturing (or GEMBA) capability by factory automation and multi-skill worker development  
 Supplementing reduction of production workers and maintaining sales growth

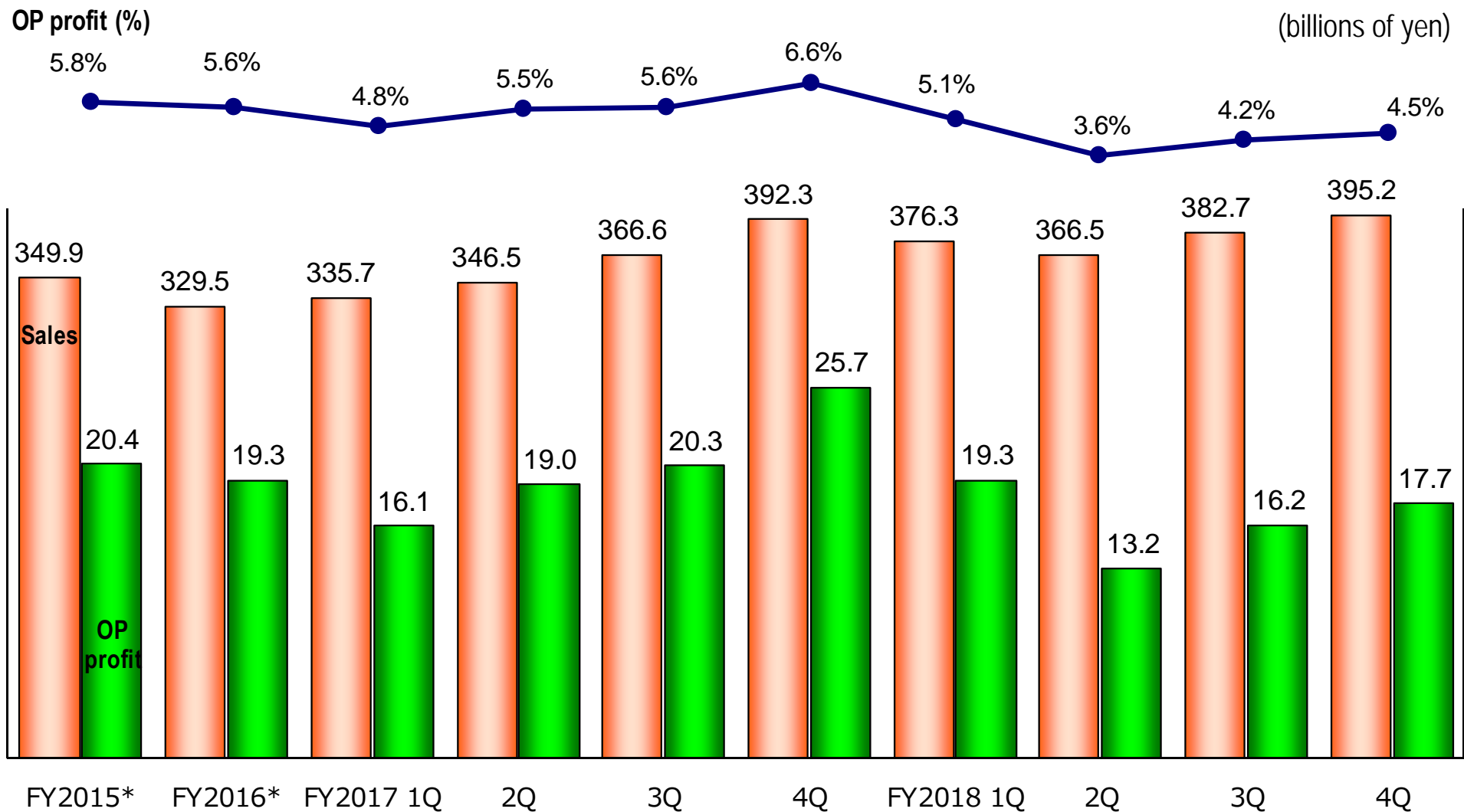
- Promote automation in production sections to implement approx. 1,000 manpower saving in 2022.
- Put the surplus employees/recruitment numbers generated from manpower saving to:
  1. Improvement of manufacturing (or *GEMBA*) capability (e.g. human resources sophistication, multi-skill worker development)
  2. For securing strategic personnel

## <Production personnel and sales transition>



Thank you

# (Reference) Quarterly Result Trend



USD	JPY120	JPY108	JPY111	JPY111	JPY113	JPY108	JPY109	JPY111	JPY113	JPY110
EUR	JPY133	JPY119	JPY122	JPY130	JPY133	JPY133	JPY130	JPY130	JPY129	JPY125

\*: The FY2015 and FY2016 show the quarterly average. The same applies to the following slides.

# (Reference) Sales Forecast by Business

(billions of yen)

		Fy2018 Full year (Actual)	FY2019 (Forecast)			Increase/ Decrease	Increase/ Decrease (%)
			1H (Forecast)	2H (Forecast)	Full year (Forecast)		
Mechanical components	Steering systems	770.7	378.5	389.5	768.0	(2.7)	(0.4%)
	Drivelines	157.2	78.0	81.0	159.0	+1.7	+1.1%
	Bearings	417.8	201.5	211.5	413.0	(4.8)	(1.2%)
	<b>[Total]</b>	<b>1345.8</b>	<b>658.0</b>	<b>682.0</b>	<b>1340.0</b>	<b>(5.8)</b>	<b>(0.4%)</b>
Machine tools and others	Machine tools	173.1	91.0	97.0	188.0	+14.8	+8.6%
	Others	1.9	1.0	1.0	2.0	+0	+4.9%
	<b>[Total]</b>	<b>175.0</b>	<b>92.0</b>	<b>98.0</b>	<b>190.0</b>	<b>+14.9</b>	<b>+8.5%</b>
<b>[Total Sales]</b>		<b>1520.8</b>	<b>750.0</b>	<b>780.0</b>	<b>1530.0</b>	<b>+9.1</b>	<b>+0.6%</b>



# (Reference) Sales Forecast by Region

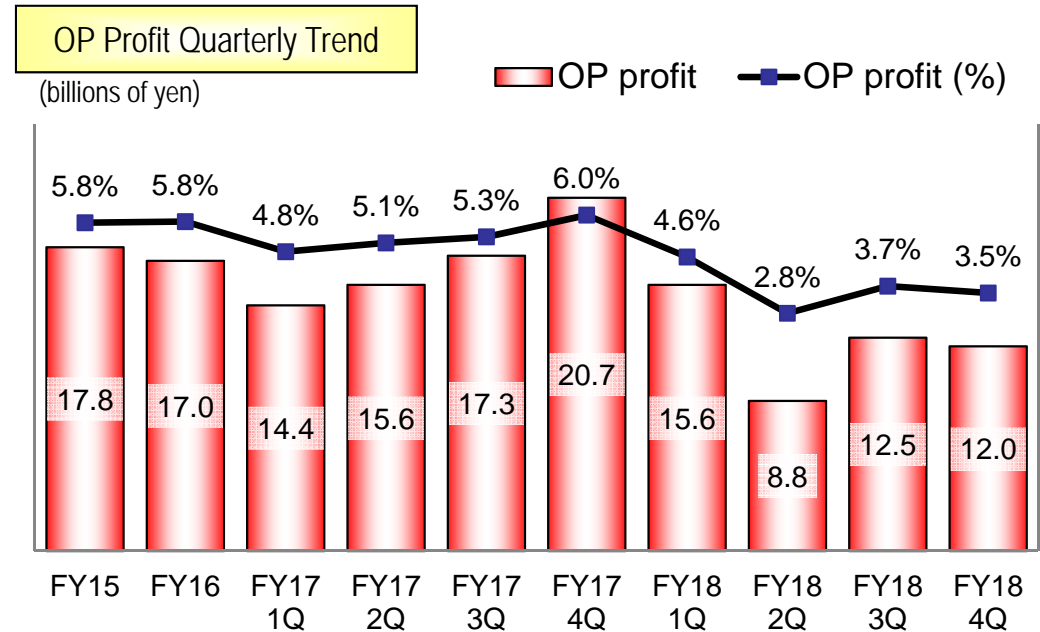
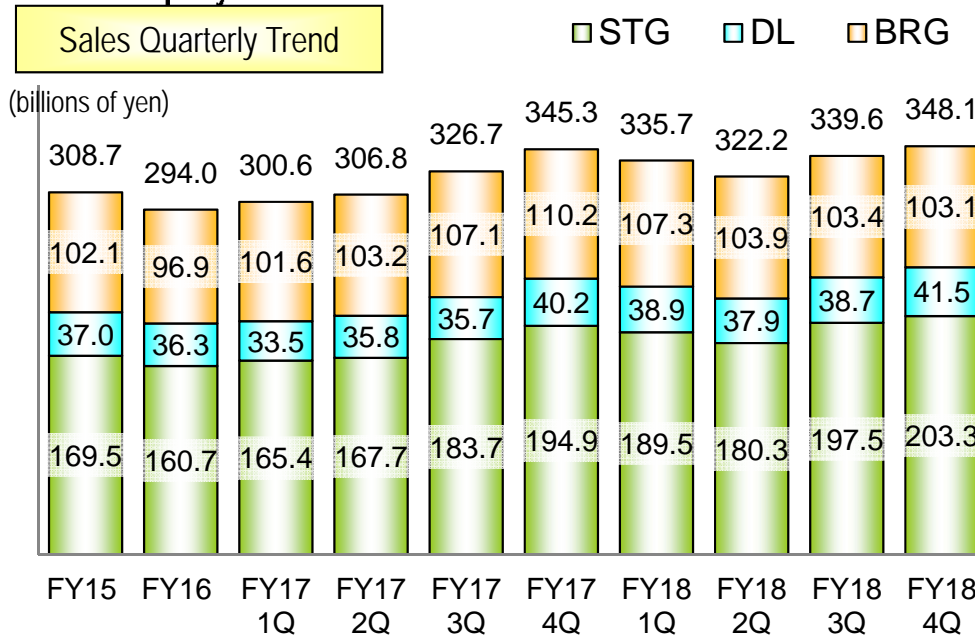
(billions of yen)

	FY2018 Full year (Actual)	FY2019 (Forecast)			Increase/ Decrease	Increase/ Decrease (%)
		1H (Forecast)	2H (Forecast)	Full year (Forecast)		
Japan	619.6	307.0	315.5	622.5	+2.8	+0.5%
Europe	231.2	104.0	108.0	212.0	(19.2)	(8.3%)
North America	314.7	156.0	161.5	317.5	+2.7	+0.9%
Asia/Oceania (including India)	178.6	89.0	95.0	184.0	+5.3	+3.0%
China	149.7	81.0	85.0	166.0	+16.2	+10.9%
South America & others	26.8	13.0	15.0	28.0	+1.1	+4.1%
<b>[Total Sales]</b>	<b>1520.8</b>	<b>750.0</b>	<b>780.0</b>	<b>1530.0</b>	<b>+9.1</b>	<b>+0.6%</b>

# (Reference) Financial Results by Business (Mechanical Components)

Mechanical components		FY2017	FY2018	Increase/ Decrease	Increase/ Decrease (%)
Steering systems	Sales	711.8	770.7	+58.9	+8.3%
Drivelines	Sales	145.4	157.2	+11.7	+8.1%
Bearings	Sales	422.3	417.8	(4.4)	(1.1%)
[Total]	Sales	1279.5	1345.8	+66.2	+5.2%
	OP profit	68.2	49.0	(19.2)	(28.1%)
	OP profit (%)	5.3%	3.6%		

\* Intercompany deletion is omitted.



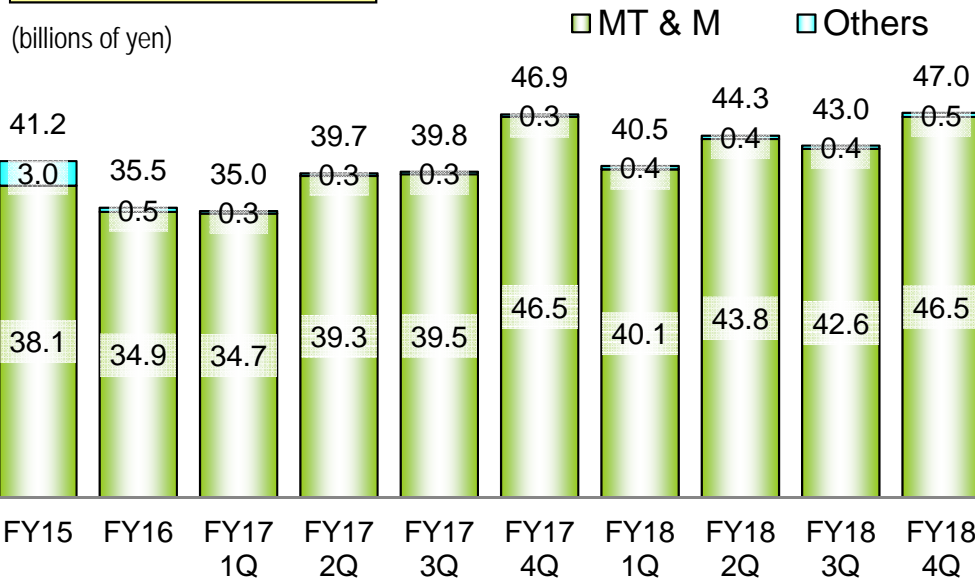
# (Reference) Financial Results by Business (Machine Tools & Others)

(billions of yen)

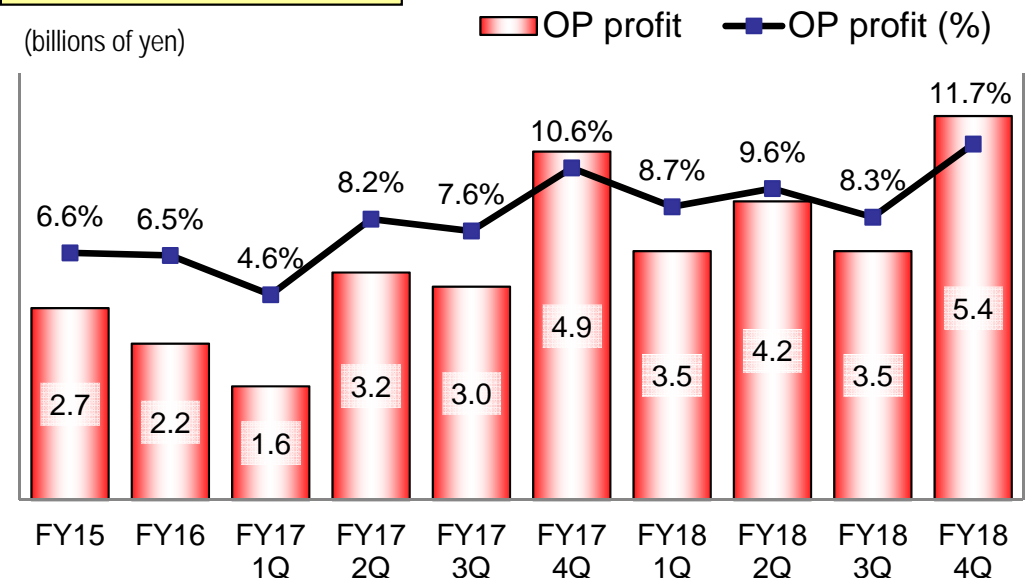
Machine tools and others		FY2017	FY2018	Increase/ Decrease	Increase/ Decrease (%)
Machine tools	Sales	160.0	173.1	+13.0	+8.2%
Others	Sales	1.5	1.9	+0.3	+25.2%
[Total]	Sales	161.5	175.0	+13.4	+8.3%
	OP profit	12.8	16.8	+3.9	+31.1%
	OP profit (%)	8.0%	9.6%		

\* Intercompany elimination is omitted.

Sales Quarterly Trend



OP Profit Quarterly Trend

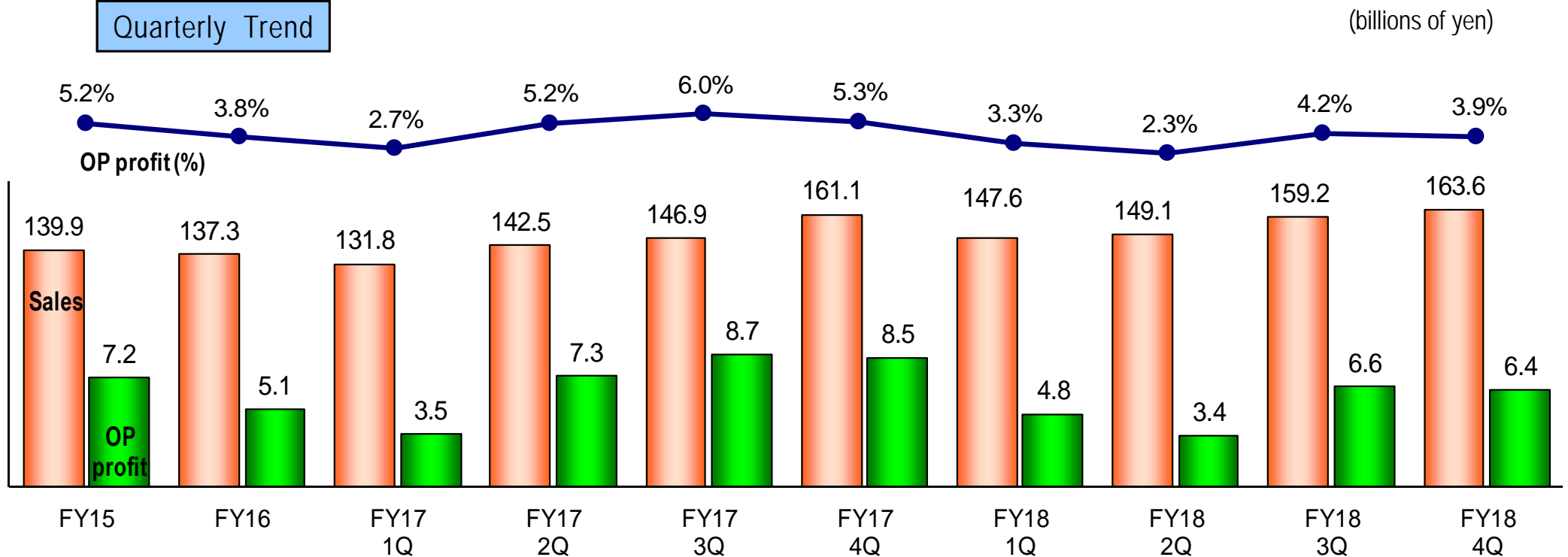


# (Reference) Financial Results by Region (Japan)

(billions of yen)

Japan	FY2017	FY2018	Increase/Decrease	Increase/Decrease (%)
Sales	582.4	619.6	+37.2	+6.4%
OP profit	28.2	21.3	(6.8%)	(24.4%)
OP profit (%)	4.9%	3.4%		

Quarterly Trend

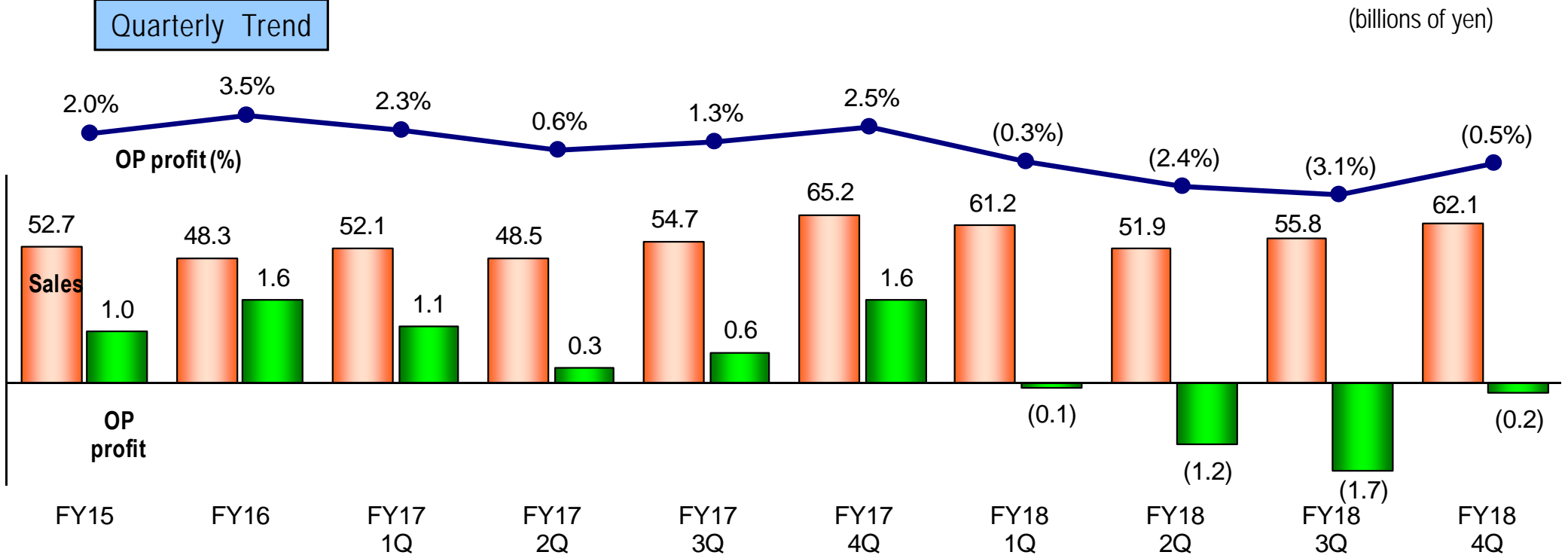


# (Reference) Financial Results by Region (Europe)

(billions of yen)

Europe	FY2017	FY2018	Increase/Decrease	Increase/Decrease (%)
Sales	220.7	231.2	+10.5	+4.8%
OP profit	3.8	(3.4)	(7.2)	(188.8%)
OP profit (%)	1.7%	(1.5%)		

Quarterly Trend

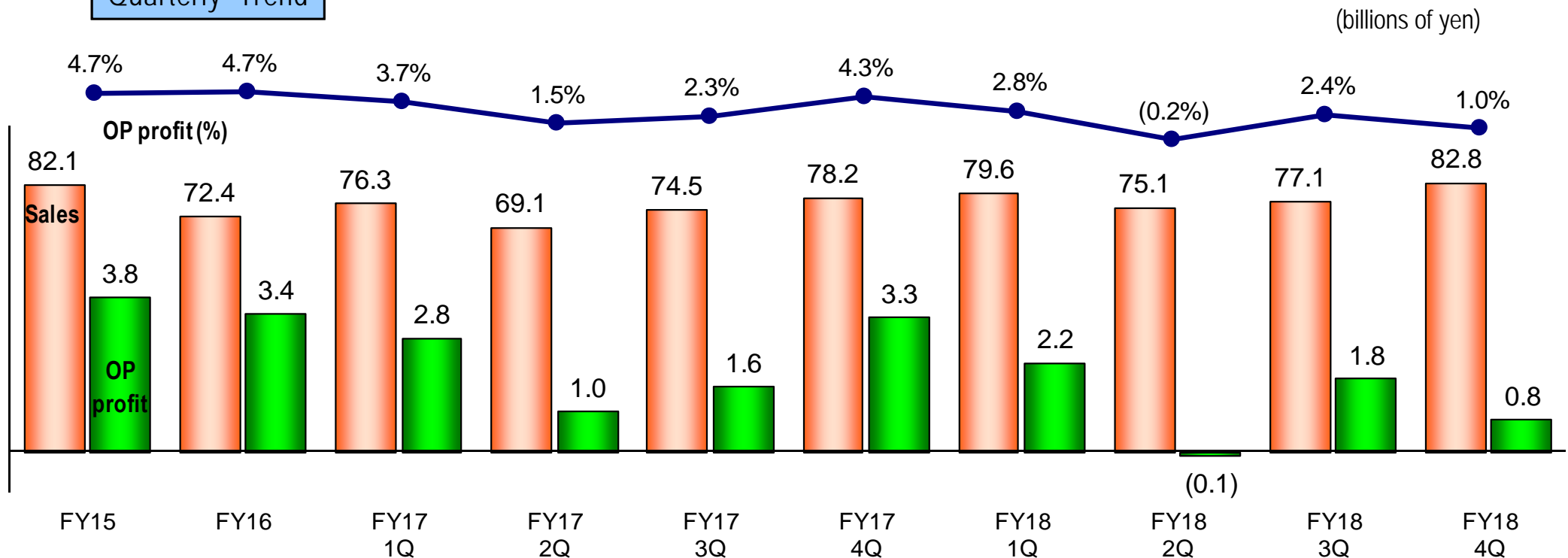


# (Reference) Financial Results by Region (North America)

(billions of yen)

North America	FY2017	FY2018	Increase/Decrease	Increase/Decrease (%)
Sales	298.2	314.7	+16.4	+5.5%
OP profit	8.9	4.8	(4.1)	(45.8%)
OP profit (%)	3.0%	1.5%		

Quarterly Trend



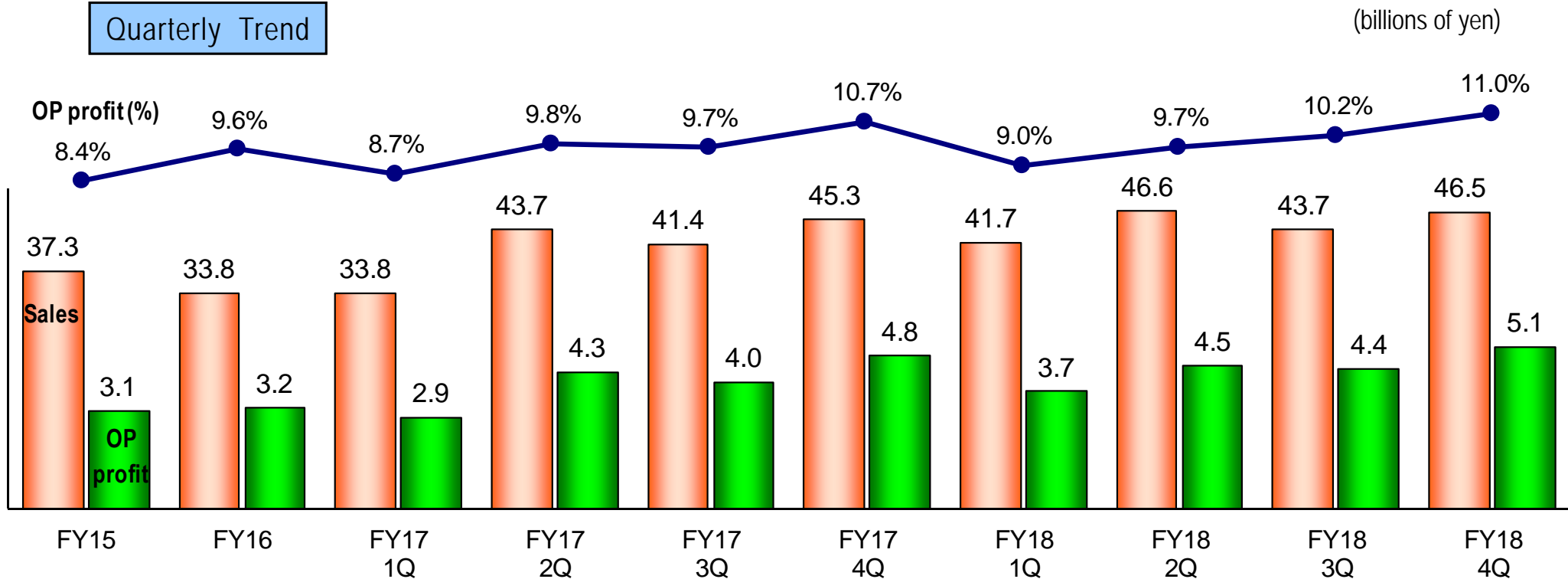
# (Reference) Financial Results by Region

## [Asia/Oceania (Including India)]

(billions of yen)

Asia/Oceania (including India)	FY2017	FY2018	Increase/ Decrease	Increase/ Decrease (%)
Sales	164.4	178.6	+14.2	+8.7%
OP profit	16.1	17.8	+1.7	+10.9%
OP profit (%)	9.8%	10.0%		

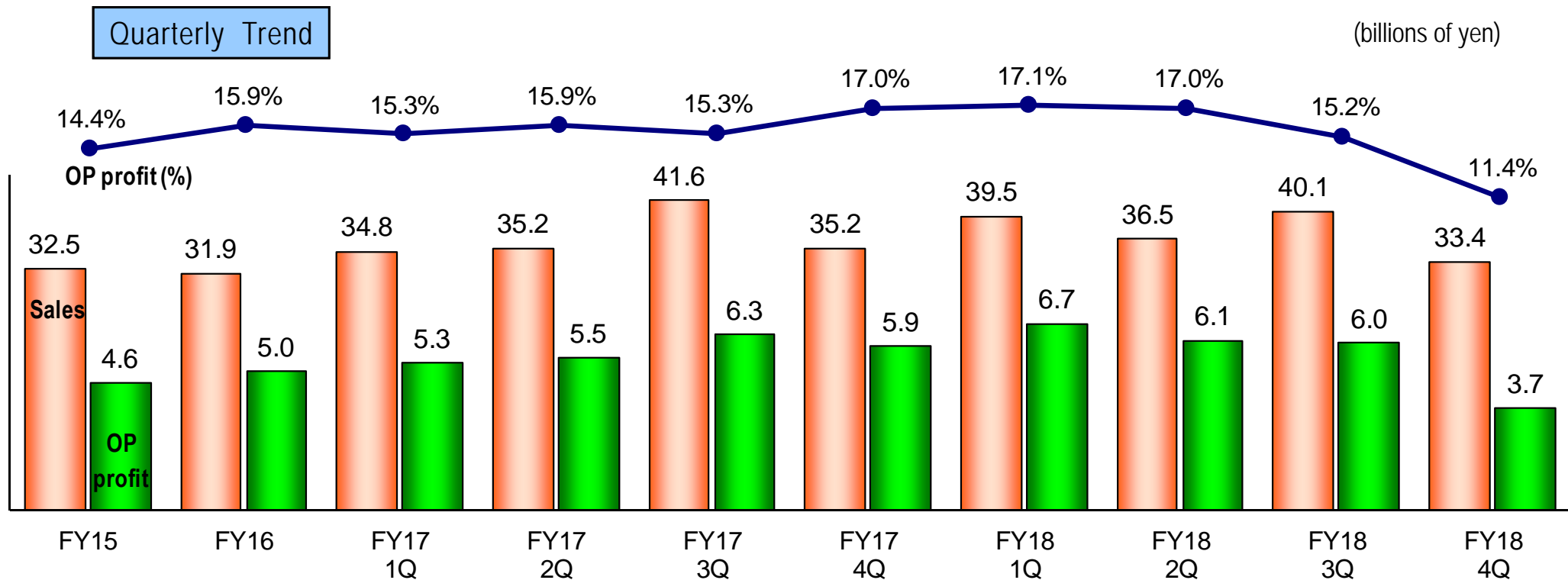
Quarterly Trend



# (Reference) Financial Results by Region (China)

(billions of yen)

China	FY2017	FY2018	Increase/ Decrease	Increase/ Decrease (%)
Sales	146.9	149.7	+2.7	+1.9%
OP profit	23.2	22.8	(0.4)	(1.9%)
OP profit (%)	15.8%	15.3%		





# (Reference) Financial Results by Region

## [South America and Others]

(billions of yen)

South America & Others	FY2017	FY2018	Increase/Decrease	Increase/Decrease (%)
Sales	28.3	26.8	(1.4)	(5.1%)
OP profit	2.2	1.6	(0.5)	(24.3%)
OP profit (%)	7.8%	6.2%		

(billions of yen)

Quarterly Trend

