

November 11, 2019

# 1st Half Results & Financial Position, Ended March 2020

**Teruhisa Ueda**  
President & CEO  
Shimadzu Corporation

# Contents

- (1) FY 2019 1H Financial Position**
- (2) FY 2019 1H Results by Business Segment**
- (3) FY 2019 Forecast**
- (4) Key Business Strategies**

# Financial Highlights



## Record net sales for the first half

- Net sales, operating income, and net income exceeded previous records for the first half. (Third consecutive year of record sales, and fifth consecutive year of record operating income and net income)
- Both sales and income increased for Analytical, Medical, and Aircraft segments, but both decreased for the Industrial Machinery segment, due to a downturn in semiconductor market conditions.

## Record net sales for Analytical and Medical (Strong MS and LC sales for Analytical)

- Both Analytical and Medical segments broke previous net sales records.
- MS drove results with double-digit increase, including double-digit increases in Japan, China, Europe, and India.
- LC sales also increased, with double-digit increases in Japan and Southeast Asia.

## Strong results in Japan

- In Japan, Analytical net sales increased 6 %, with strong sales of MS, LC, and testing machines.
- Medical net sales increased 20 %, with strong sales of diagnostic X-ray systems (fluoroscopy, angiography, and general radiography).

# Statement of Income

- Net sales: 186.5 billion yen (3.6 billion yen or 2 % year-on-year increase)
- Operating income: 17.9 billion yen (0.4 billion yen or 2 % year-on-year increase)

	Units: Billions of yen	1H		YoY	
		FY 2019	FY 2018	Changes	Percent Increase/Decrease
<b>Business Results</b>					
Net Sales		186.5	182.9	+3.6	+2%
Operating Income		17.9	17.4	+0.4	+2%
Operating Margin		9.6%	9.5%	0.1 pt	—
Ordinary Income		18.1	18.7	- 0.6	-3%
Profit Attributable to Owners of Parent		13.2	12.9	+0.3	+3%

### Exchange Rate Effect

Net sales: -2.4 billion yen  
Operating income: -0.7 billion yen

### Foreign Exchange Sensitivity

(Billions of yen)

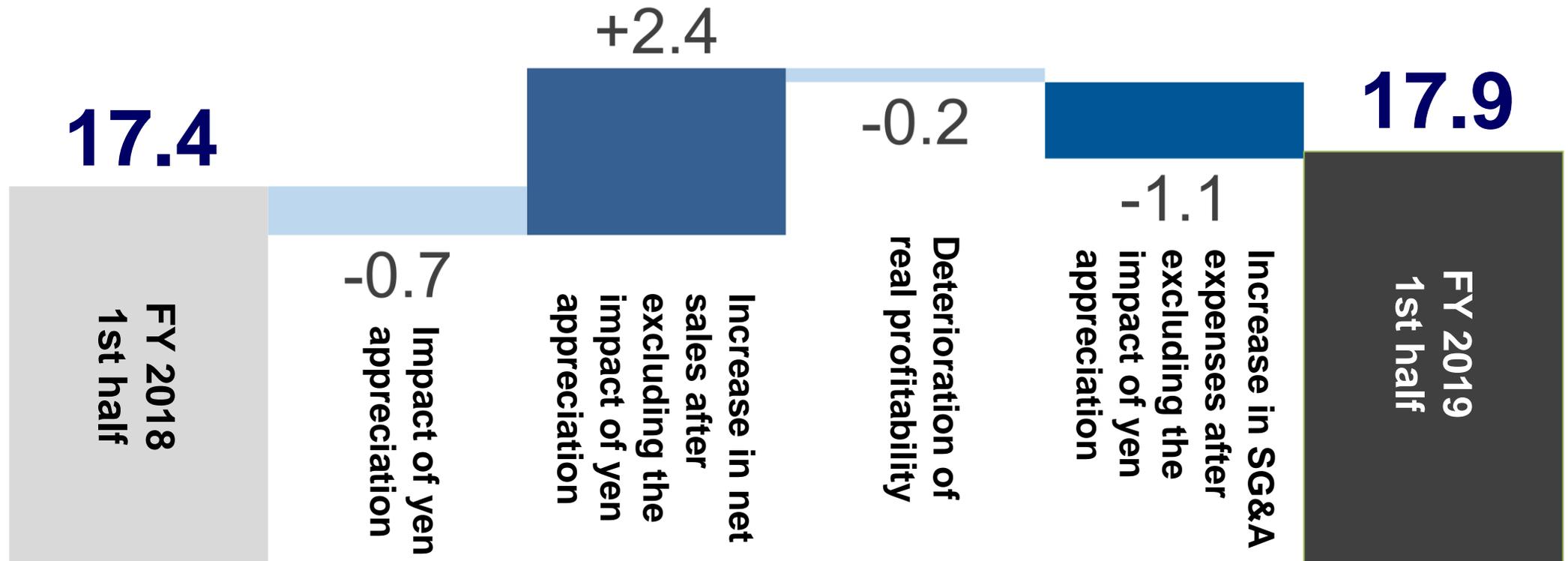
	Net Sales	Operating Income
USD	1.2	0.4
EUR	0.2	0.07

<b>Exchange Rates</b>				
Average Rate: USD (Yen)	108.7	110.3	- 1.6	-1.5%
Euro (Yen)	121.5	129.9	- 8.4	-6.5%

<b>Major Investments</b>			
R&D Expenses	8.5	8.1	+0.4
CAPEX	9.7	10.2	- 0.5
Depreciation and Amortization	6.5	5.6	+0.9

# Analysis of Year-on-Year Increase/Decrease in Operating Income

- Exchange rate effect was -0.7 billion yen.
- Excluding such exchange rate effects, the effect of real sales increases was 2.4 billion yen.
- Real decrease in profitability was 0.2 billion yen, with a 1.1 billion yen real increase in expenses.



# Sales and Income by Business Segment

• AMI: Analytical & Measuring Instruments, MED: Medical Systems, IM: Industrial Machinery, AE: Aircraft Equipment

- **AMI:** Achieved record first-half sales, but operating income was flat, due to increased selling and administrative expenses.
- **MED:** Achieved record net sales and operating income, with major increases in Japan.
- **IM:** Strong hydraulic equipment and vacuum heat treatment furnace sales were not enough to compensate for decreased TMP sales, resulting in lower overall sales and income.
- **AE:** Sales and income increased for both commercial and defense aircraft equipment.

(Billions of yen)	Net Sales					Operating Income					Operating Margin			
	FY 2019	FY 2018	YoY			FY 2019	FY 2018	YoY			FY 2019	FY 2018	YoY	
			Changes	Percent Increase/Decrease	Excluding Exchange Rate Effects			Changes	Percent Increase/Decrease	Excluding Exchange Rate Effects			Increase/Decrease	Excluding Exchange Rate Effects
<b>AMI</b>	<b>113.4</b>	111.1	<b>+2.3</b>	<b>+2%</b>	<b>+4%</b>	<b>15.6</b>	15.6	<b>+0</b>	<b>+0%</b>	<b>+3%</b>	<b>13.8%</b>	14.0%	<b>-0.2 pt</b>	<b>-0.0 pt</b>
<b>MED</b>	<b>34.9</b>	32.6	<b>+2.2</b>	<b>+7%</b>	<b>+8%</b>	<b>1.4</b>	0.7	<b>+0.7</b>	<b>+106%</b>	<b>+117%</b>	<b>4.0%</b>	2.1%	<b>+1.9 pt</b>	<b>+2.1 pt</b>
<b>IM</b>	<b>19.5</b>	22.8	<b>-3.3</b>	<b>-15%</b>	<b>-14%</b>	<b>1.1</b>	2.2	<b>-1.1</b>	<b>-49%</b>	<b>-44%</b>	<b>5.8%</b>	9.7%	<b>-3.9 pt</b>	<b>-3.4 pt</b>
<b>AE</b>	<b>15.2</b>	12.4	<b>+2.8</b>	<b>+22%</b>	<b>+23%</b>	<b>0.3</b>	-0.2	<b>+0.5</b>	<b>—</b>	<b>—</b>	<b>2.0%</b>	-1.8%	<b>+3.8 pt</b>	<b>+3.7 pt</b>
<b>Other</b>	<b>3.5</b>	3.9	<b>-0.4</b>	<b>-10%</b>	<b>-10%</b>	<b>0.6</b>	0.2	<b>+0.4</b>	<b>+185%</b>	<b>+185%</b>	<b>13.7%</b>	4.4%	<b>+9.3 pt</b>	<b>+9.3 pt</b>
<b>Adjutments</b>						<b>-1.2</b>	-1.0	<b>-0.1</b>	<b>—</b>	<b>—</b>				
<b>Total</b>	<b>186.5</b>	182.9	<b>+3.6</b>	<b>+2%</b>	<b>+3%</b>	<b>17.9</b>	17.4	<b>+0.4</b>	<b>+2%</b>	<b>+6%</b>	<b>9.6%</b>	9.5%	<b>+0.1 pt</b>	<b>+0.3 pt</b>

(1) FY 2019 1H Financial Position

**(2) FY 2019 1H Results by Business Segment**

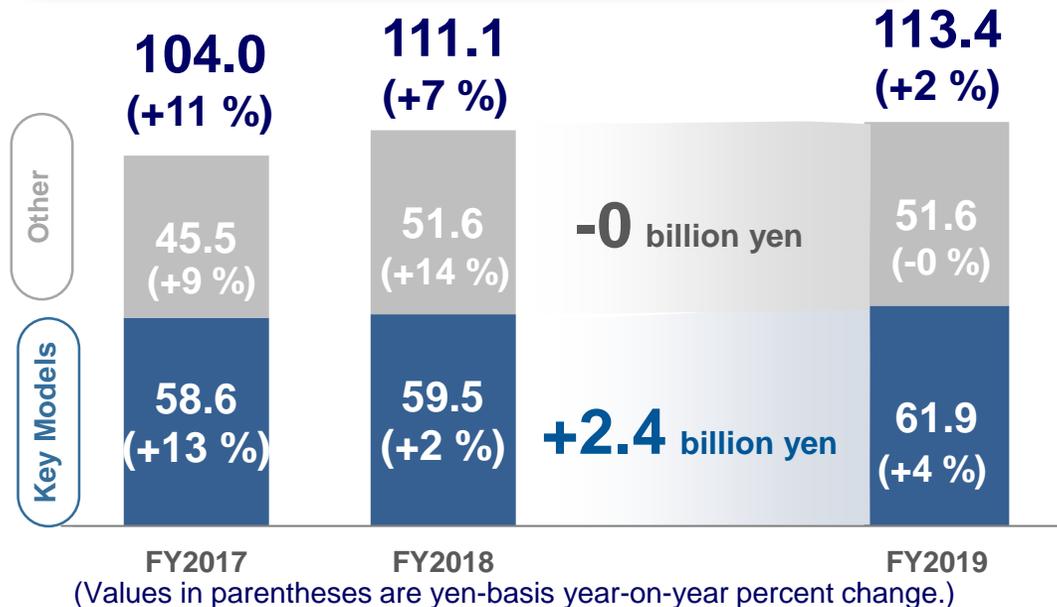
(3) FY 2019 Forecast

(4) Key Business Strategies

# Analytical & Measuring Instruments Net Sales by Sub-Segment

- **Key models: 61.9 billion yen; +2.4 billion yen (+4 %)**  
MS sales were strong in academia/government, pharmaceutical, clinical fields. LC sales were also strong.
- **Other models: 51.6 billion yen: Flat**  
Despite a reactionary decline after special demand for water quality monitoring models in China the previous year, overall sales were flat, due to increased testing machine and other sales.
- **AM sales: 36.1 billion yen; +1.7 billion yen (+5 %)**      **AM sales ratio: 32 %; +1 pt**      • **AM: Aftermarket**
- **Key models: Liquid chromatographs (LC), mass spectrometers (MS), gas chromatographs (GC)**

Analytical & Measuring Instruments Net Sales (billion yen)



## Analytical & Measuring Instruments Products



# Analytical & Measuring Instruments

## Net Sales by Region

- **Japan: +6 %** Strong sales of key models
- **Outside Japan: 0 %** Decrease in China was offset by strong sales in Europe and Southeast Asia, resulting in overall flat sales.
- **Overseas sales ratio: 60 %** Decreased 2 pts (year-on-year), due to strong sales in Japan.

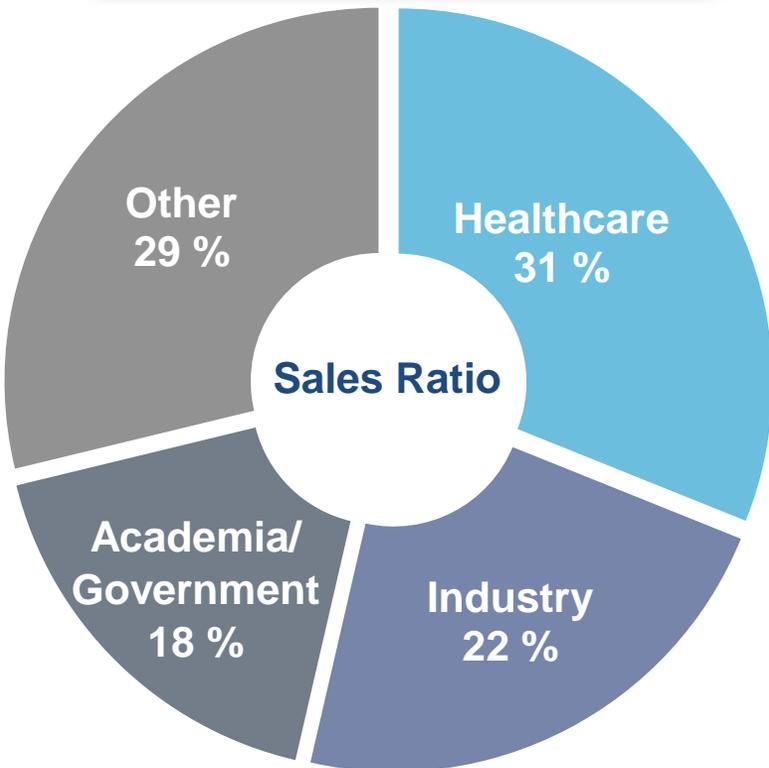
	FY 2019 Q2	FY 2018 Q2	Increase/Decrease	Percent Increase/Decrease	Excluding Exchange Rate Effects	Overview
Japan	45.7	43.0	+2.7	+6 %	+6 %	<ul style="list-style-type: none"> <li>• Sales of key models increased by a large 14 %.</li> <li>• Sales of other models also increased, due to higher sales of testing machines, etc.</li> </ul>
Other Asian Countries	13.8	12.2	+1.6	+13 %	+15 %	<ul style="list-style-type: none"> <li>• Southeast Asia: +22 %, due to strong sales of key models for pharmaceuticals</li> <li>• India: +3 % with recovery trend, due to strong sales for contract analysis</li> </ul>
Europe	12.0	11.7	+0.4	+3 %	+10 %	<ul style="list-style-type: none"> <li>• Strong sales for clinical, academic/research institutions, and pharmaceuticals</li> <li>• By region, sales were particularly strong in Russia.</li> </ul>
North America	12.1	12.4	-0.3	-3 %	-1 %	<ul style="list-style-type: none"> <li>• Strong sales for cannabis and pharmaceuticals</li> <li>• MS sales to hospitals decreased.</li> </ul>
China	25.0	27.0	-2.0	-7 %	-6 %	<ul style="list-style-type: none"> <li>• Strong double-digit increase in MS sales to academia/research institutions and clinical fields</li> <li>• Sales decreased due to special demand for environmental monitoring in the previous year.</li> </ul>

# Analytical & Measuring Instruments

## Ratio of Net Sales by Market

- **Academia/government:** Academic sales were strong in Japan, China, and Europe, and government sales increased significantly in Japan.
- **Industry:** Sales were strong in Japan.
- **Healthcare:** Demand for food applications decreased in China.

Ratio of Net Sales by Market

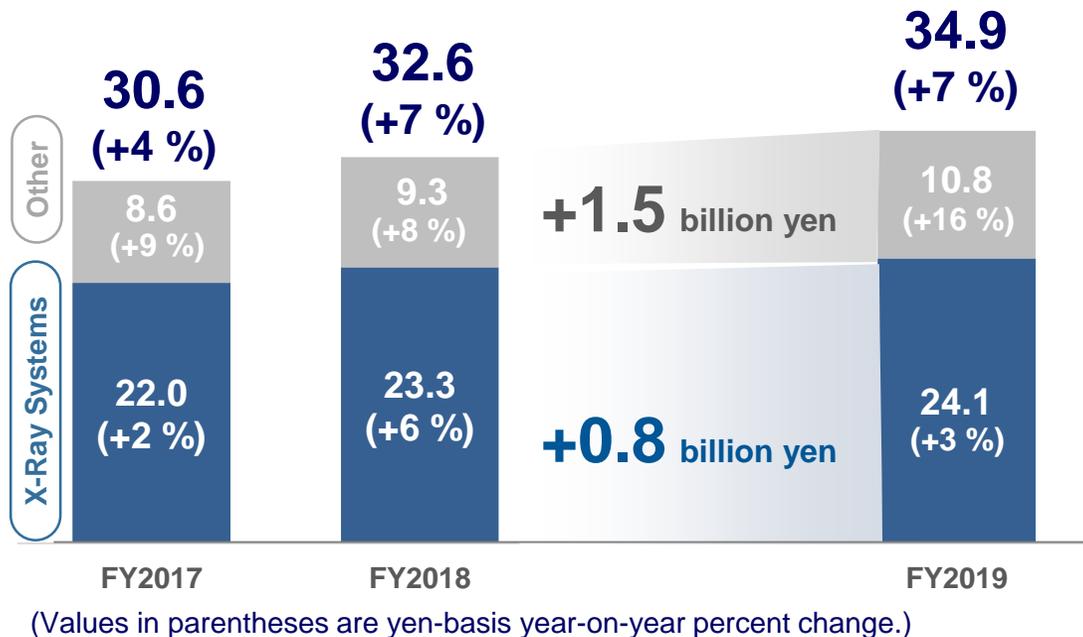


Markets and Main Industries	YoY	Overview
<b>Healthcare</b> <ul style="list-style-type: none"> <li>• Pharmaceuticals</li> <li>• Foods</li> <li>• Healthcare institutions</li> </ul>	-3 %	<ul style="list-style-type: none"> <li>• Clinical sales were strong, but demand for food applications decreased in China.</li> </ul>
<b>Industry</b> <ul style="list-style-type: none"> <li>• Chemicals</li> <li>• Materials</li> <li>• Electrical</li> <li>• Automotive</li> </ul>	+1 %	<ul style="list-style-type: none"> <li>• Strong testing machine and other sales in Japan offset decreases outside Japan.</li> <li>• Double-digit sales decrease to electronic/electrical fields in China</li> </ul>
<b>Academia/Government</b>	+11 %	<ul style="list-style-type: none"> <li>• Government sales increased significantly in Japan.</li> <li>• Academic sales were strong in Japan, China, and Europe.</li> </ul>
<b>Other</b>	+2 %	<ul style="list-style-type: none"> <li>• Scope of analytical instrument customers expanded.</li> </ul>

# Medical Systems Net Sales by Sub-Segment

- **X-ray systems: 24.1 billion yen**      Increased by +0.8 billion yen (+3 %)  
Sales of all models increased, but were strong for angiography systems in particular. By region, sales increased significantly for all three model categories in Japan.
- **Other: 10.8 billion yen**      Increased by 1.5 billion yen (+16 %), due to strong sales in Japan
- **AM: 10.8 billion yen**      Increased by 0.9 billion yen (+9 %)      AM sales ratio: +1 pt to 31 %

Medical Systems Net Sales (billion yen)



## Medical Products

Category	Product 1	Product 2	Product 3	Product 4
Other	 Dedicated Breast PET System	 Near-Infrared Fluorescence Imaging System	 Near-Infrared Imaging System	 Radiotherapy-Related System
X-Ray Systems	 General Radiography System	 Mobile System	 Angiography System	 Fluoroscopy System

# Medical Systems Net Sales by Region

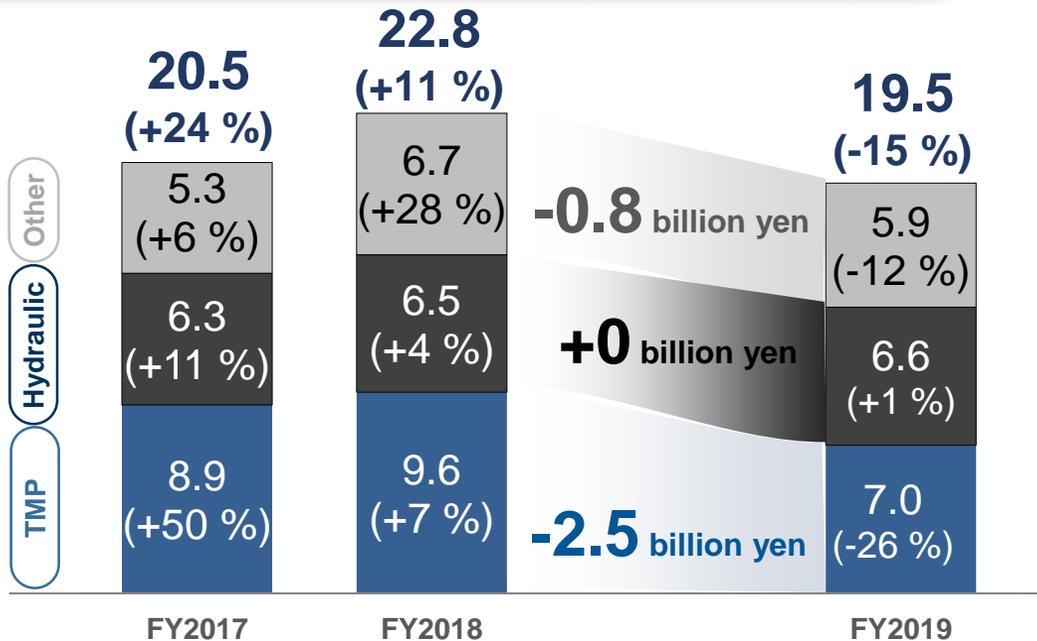
- Japan: +20 % X-ray system sales increased, due to improved reputation for image processing technology and applications.
- Outside Japan: -9 % Downturn particularly in North America and China
- Overseas sales ratio: 36 % Decreased 7 pts (year-on-year), due to strong sales in Japan.

	FY 2019 Q2	FY 2018 Q2	Increase/ Decrease	Percent Increase/ Decrease	Excluding Exchange Rate Effects	Overview
Japan	22.3	18.6	+3.8	+20 %	+20 %	• Strong sales for both X-ray systems and other products.
Other Asian Countries	2.2	2.3	-0.1	-3 %	-2 %	• Strong angiography system sales in India were not enough to compensate for the reactionary decline after large projects the previous year.
China	2.5	2.8	-0.3	-11 %	-10 %	• Preferential policies for domestic products and bidding delays continued.
Europe	1.7	2.1	-0.4	-21 %	-16 %	• Reactionary decline after large projects in the previous year
North America	3.6	4.5	-1.0	-22 %	-20 %	• Demand for mobile and general radiography systems slowed due to continued reactionary decline after measures to promote switching to digital models.

# Industrial Machinery Net Sales by Sub-Segment

- **TMP: 7.0 billion yen** Decreased by 2.5 billion yen (-26 %), due to semiconductor market downturn.
- **Hydraulic: 6.6 billion yen** Flat (+1 %), due to decrease in North America and China offset by strong sales in Japan
- **Other: 5.9 billion yen** Decreased by 0.8 billion yen (-12 %). Vacuum heat treatment furnace sales were strong, but glass winder sales decreased due to capital investment reluctance in China.
- **AM (TMP): 1.7 billion yen** Increased by 0.2 billion yen (+11 %) AM sales ratio: 25 %; +8 pts

## Industrial Machinery Net Sales (billion yen)



(Values in parentheses are yen-basis year-on-year percent change.)

## Industrial Machinery Products

<b>Other</b>	 <b>Vacuum Heat Treatment Furnace</b>	 <b>High-Speed Sputtering System</b>	 <b>Balancer</b>	
<b>TMP</b>	 <b>Turbomolecular Pump</b>	<b>Hydraulic Equipment</b>	 <b>Hydraulic Gear Pump</b>	 <b>Control Valve</b>

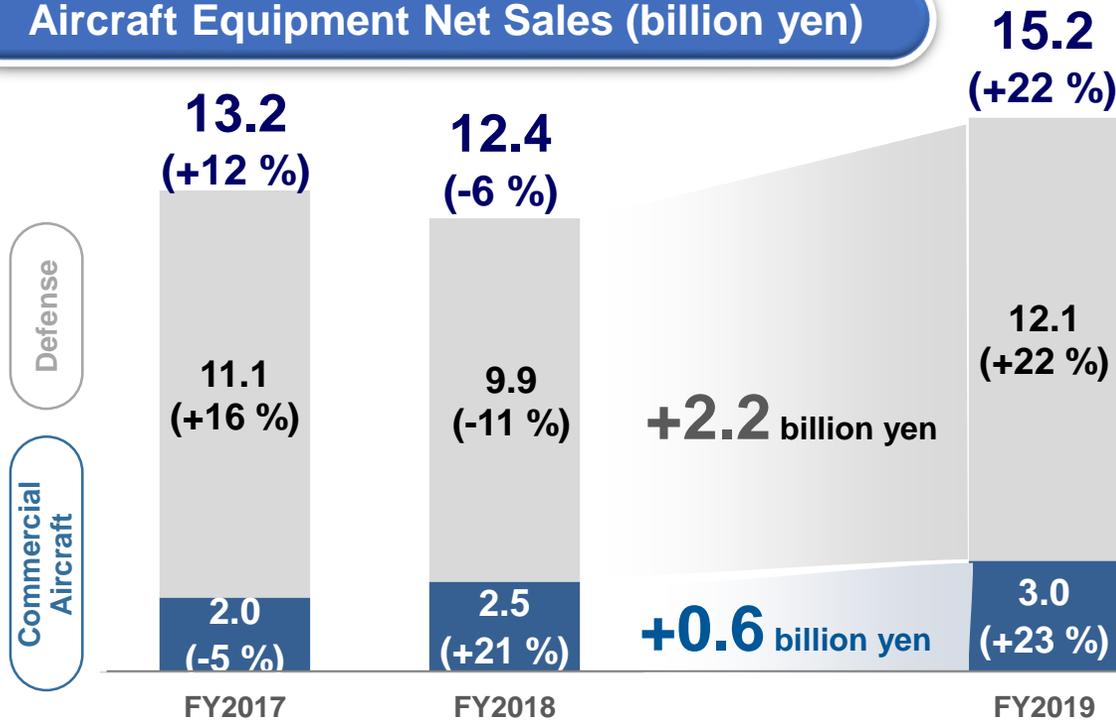
# Aircraft Equipment

- Commercial aircraft: 3.0 billion yen
- Defense: 12.1 billion yen

Sales increased by 0.6 billion yen (+23 %), due to strong demand for small-medium aircraft and increased sales of service parts to airlines.

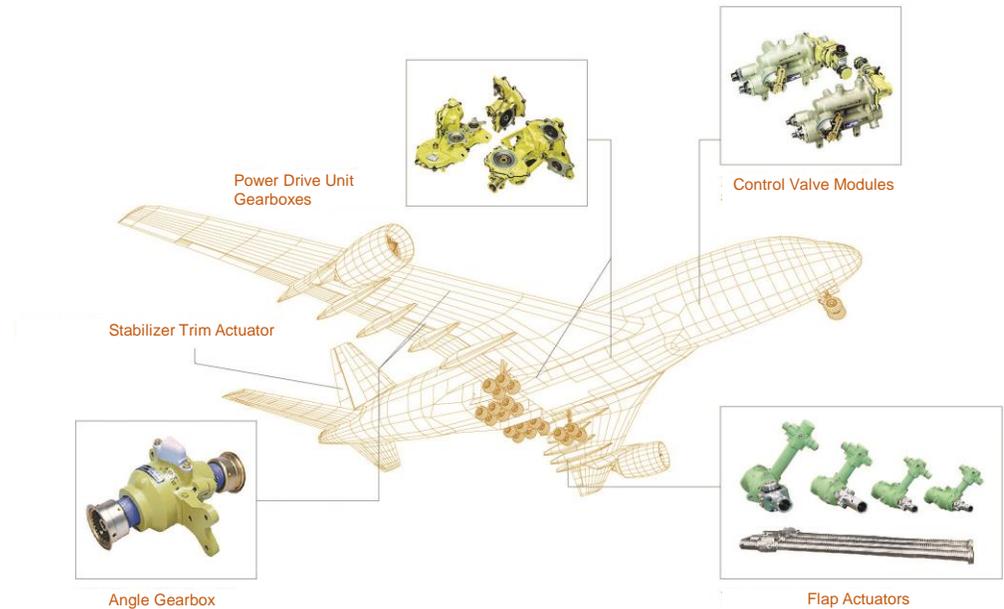
Sales increased by 2.2 billion yen (+22 %), due to increases for new transport aircraft, etc.

Aircraft Equipment Net Sales (billion yen)



(Values in parentheses are yen-basis year-on-year percent change.)

## Commercial Aircraft Equipment



- (1) FY 2019 1H Financial Position
- (2) FY 2019 1H Results by Business Segment
- (3) FY 2019 Forecast**
- (4) Key Business Strategies

# FY 2019 Forecast

- Achieve seventh consecutive year of increased sales and income and fifth consecutive year of record sales by expanding investment for achieving growth, such as by strengthening R&D and expanding capital investment.

		FY 2019		YoY			
Units: Billions of yen		FY 2019	FY 2018	Changes	Percent Increase/Decrease	Excluding Exchange Rate Effects	
Business Results	Net Sales	410.0	391.2	+18.8	+5%	+25.2	+6%
	Operating Income	47.0	44.5	+2.5	+6%	+4.7	+11%
	Operating Margin	11.5%	11.4%	+0.1 pt	—		
	Ordinary Income	47.0	45.5	+1.5	+3%		
	Profit Attributable to Owners of Parent	34.0	32.5	+1.5	+5%		
Exchange Rates	Average Rate: USD (Yen)	107.0	111.0	- 4.0	-3.6%		
	Euro (Yen)	120.0	128.4	- 8.4	-6.6%		
Major Investments	R&D Expenses	19.0	16.6	+2.4			
	CAPEX	22.0	21.7	+0.3			
	Depreciation and Amortization	13.5	11.5	+2.0			

# FY 2019 Forecast by Business Segment

- Achieve record net sales for both Analytical & Measuring and Medical Systems segments.
- Increase Analytical & Measuring Instruments sales and income for a seventh consecutive year.
- Also plan to increase both sales and income for Medical Systems and Industrial Machinery segments.

• AMI: Analytical & Measuring Instruments, MED: Medical Systems, IM: Industrial Machinery, AE: Aircraft Equipment

(Billions of yen)	Net Sales				Operating Income				Operating Margin		
	FY 2019	FY 2018	YoY		FY 2019	FY 2018	YoY		FY 2019	FY 2018	YoY
			Changes	Percent Increase/Decrease			Changes	Percent Increase/Decrease			Increase/Decrease
<b>AMI</b>	<b>256.5</b>	241.4	<b>+15.1</b>	<b>+6%</b>	<b>41.5</b>	38.8	<b>+2.7</b>	<b>+7%</b>	<b>16.2%</b>	16.1%	<b>+0.1 pt</b>
<b>MED</b>	<b>71.0</b>	69.1	<b>+1.9</b>	<b>+3%</b>	<b>2.7</b>	2.3	<b>+0.4</b>	<b>+16%</b>	<b>3.8%</b>	3.4%	<b>+0.4 pt</b>
<b>IM</b>	<b>45.0</b>	45.4	<b>-0.4</b>	<b>-1%</b>	<b>3.7</b>	4.5	<b>-0.8</b>	<b>-17%</b>	<b>8.2%</b>	9.8%	<b>-1.6 pt</b>
<b>AE</b>	<b>30.0</b>	27.3	<b>+2.7</b>	<b>+10%</b>	<b>0.9</b>	0.1	<b>+0.8</b>	<b>+656%</b>	<b>3.0%</b>	0.4%	<b>+2.6 pt</b>
Other	<b>7.5</b>	8.0	<b>-0.5</b>	<b>-6%</b>	<b>1.3</b>	1.4	<b>-0.1</b>	<b>-5%</b>	<b>14.0%</b>	14.1%	<b>-0.1 pt</b>
Adjutments					<b>-3.1</b>	-2.6	<b>-0.5</b>				
<b>Total</b>	<b>410.0</b>	391.2	<b>+18.8</b>	<b>+5%</b>	<b>47.0</b>	44.5	<b>+2.5</b>	<b>+6%</b>	<b>11.5%</b>	11.4%	<b>+0.1 pt</b>

- (1) FY 2019 1H Financial Position
- (2) FY 2019 1H Results by Business Segment
- (3) FY 2019 Forecast
- (4) Key Business Strategies**

# FY 2019 Key Business Strategies

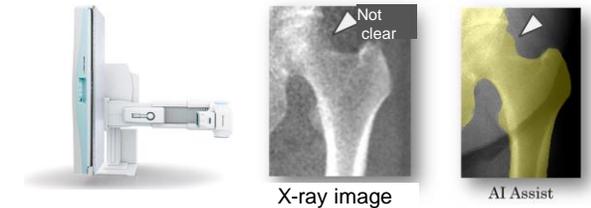
## Analytical & Measuring Instruments

1. Deploy new products (LC, high-resolution MS, etc.).
2. Strengthen IT solutions and aftermarket businesses.
3. Promote R&D collaborations.
4. Expand business in China.



## Medical Systems

1. Deploy new products (angiography, digital general radiography, etc.).
2. Strengthen aftermarket business.
3. Strengthen North American business.



## Industrial Machinery

1. Strengthen TMP business (such as by strengthening service business).
2. Expand industrial furnace business, etc.



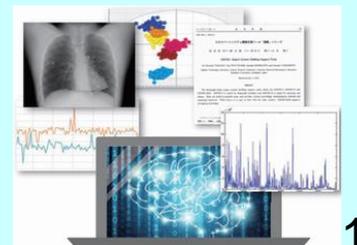
## Aircraft Equipment

1. Launch new businesses.



## Expand Demand by Developing New Fields and Strengthening Business and Product Bases

1. Develop new AI-based products.
2. Develop new systems based on synergies between different businesses.
3. Develop new fields based on collaborations with outside organizations.



# Key Businesses Strategies: Analytical & Measuring Instruments

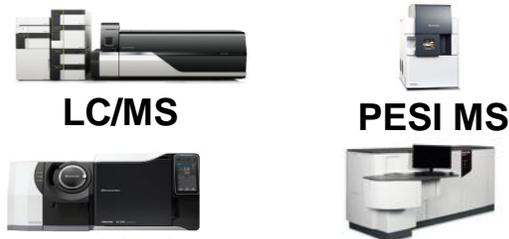
Expand Businesses by Expanding Analytical & Measuring Instruments Product Lines

## Gas Chromatographs



HPLC GC SFC

## Mass Spectrometers



LC/MS GC/MS PESI MS MALDI-TOF MS

## Molecular Spectrometers



UV/VIS FT-IR RF

## Atomic Spectrometers



ICP MS TOC EDX

## Life Science

Cell Culture Analysis System



MCE Microchip Electrophoresis System Cell Picker

## Materials Testing Machines



Testing Machine Thermal Analyzer Particle Analyzer

## Surface Analysis Systems



ESCA EPMA SPM

## General Analyzers



Balance Moisture Analyzer Static Eliminator

## Software & Network

Shimadzu Total Solution for PIC/S GMP, FDA 21 CFR Part 11 and Computerized Validation

Reliability and Security

LabSolutions

Progress Configuration of LabSolutions System Analytical Network Data System Compliant with ER/ES Regulations

Financial Position, Ended March 2020



# Key Businesses Strategies: Analytical & Measuring Instruments

## 1. Deploy New Products

- **New products:** Strengthen/expand product line (with features for full automation, on-site analysis, data integrity, etc.).
- **Analytical Intelligence:** Strengthen functionality for assisting analysis with more intelligent instruments.
- **Aftermarket:** Expand reagent and consumables businesses and strengthen service business.

### LC



#### Nexera Series

- Higher sensitivity, faster, and easier to operate due to AI technology

Released Mar. 2019

### Supercritical Preparative LC



#### Nexera UC Prep

- Preparative LC system for recovering compounds more easily
- Developed in collaboration with U.S. pharmaceutical consortium.

Released Oct. 2019

### Direct MS



#### DPiMS-8060

- Enables analysis with only simple pretreatment.
- Forensics, contaminant analysis, etc.

Released Jan. 2019

### GC



#### Nexis SCD-2030

- High-sensitivity detection of impurities that contain sulfur
- Petroleum refining, petrochemicals, etc.

Released Feb. 2019

### Testing Machines



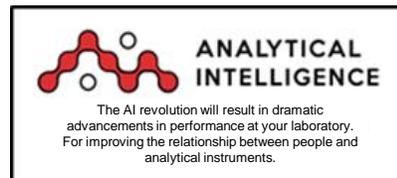
#### AGX-V

- Faster speed, higher accuracy, and easier operability
- Prevents data tampering by using a network.

Released Apr. 2019

### “ANALYTICAL INTELLIGENCE”

- Unique new concept only available from Shimadzu
- By automating processes that involve analytical expertise that requires extensive experience, Analytical Intelligence offers more advanced value in terms of analytical assistance functionality.



### “LabTotal” Aftermarket Business

- Release reagent products for monitoring drug levels in blood.
- Expand aftermarket businesses, such as consumables and maintenance services.



# Strengthen Businesses by Developing New Products in China

## New Products Released at the 2019 BCEIA Conference in China

New high-end products developed in Japan

**Nexera LC-40**



A new high-end LC with Analytical Intelligence (AI)

**DPiMS (PESI-MS)**



Direct probe ionization MS with quick and easy operation

**Nexis SCD-2030**



Sulfur chemiluminescence detection GC with high sensitivity and stability

New products developed in China  
(Designed to better-satisfy markets in China)

**Essentia IC-16 Ion Chromatograph**



Fully inert suppressor IC system with high stability

**LCMS/MS Microchip Cellular Analysis System**



Automated cell culture and metabolite analysis system with microchip LC/MS/MS

**Fully Automated Robotic EDX System**



Automated EDX system with 540 samples per cycle

# Key Businesses Strategies: Medical Systems

## Product Line and Direction for Increasing Competitiveness

### Diagnostic X-Ray Systems

#### Expanding Diagnostic Functionality



General Radiography System



Mobile X-Ray System



Fluoroscopy System

#### Improving Procedure Support Functionality



Surgical Fluoroscopy System



Angiography System

#### Fluoroscopy/Video Recording Functions

### Medical Service Efficiency Improvement Solutions



Electronic Medical Records System



Returning Patient Reception System

### Advanced Diagnostic Solutions



PET System



Near-Infrared Imaging System

### New Procedure Support Solutions



Near-Infrared Imaging System



Radiotherapy System

# Key Businesses Strategies: Medical Systems

## 1. Deploy New Products

- Strengthen angiography systems.
- Differentiate diagnostic X-ray systems (Deploy digital general radiography systems for diagnostic kinetic chest analysis.)
- Strengthen business in North America and aftermarket business.

### Angiography Systems



#### Trinias unity smart edition

- Automate procedure support starting with examination of lower extremities.

Released Apr. 2018  
(Software released in Oct.)

### General Radiography

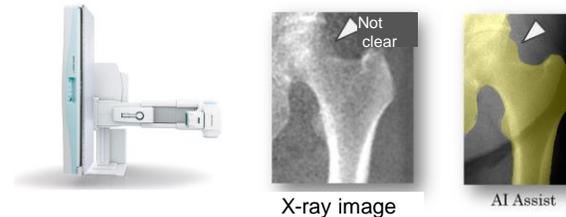


#### RADspeed Pro with kinetic analysis capability

- Lung function visualization, breathing function assessment, etc.

Released Feb. 2019

### Fluoroscopy



#### SONIALVISION G4

- World's first precision BMD measurement system based on AI technology

Released Aug. 2019

### Proximity-Type R/F Tables



#### FLUOROsPEED X1

- Digital FPD with high image quality and state-of-the-art radiation dose reduction
- Released in second half of 2019

### Strengthen aftermarket business.

- Strengthen IoT-based failure prediction and interactive remote maintenance services.
- Expand service areas and strengthen customer support.
- Expand the Global Parts Center.

### Increase/Strengthen Production Capacity and Reduce Costs.

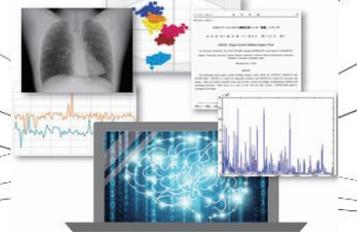
- New building completed at the Shimane Shimadzu medical instruments plant (Feb. 2019) (1.7 billion yen investment).

### Strengthen North American business.

- Expand sales of diagnostic X-ray systems.
  - Increase usage rate of SONIALVISION G4 examination room.
- Expand sales of angiography systems.
  - Strengthen sales capabilities and prepare service capabilities.
- Strengthen support for customers in the East.

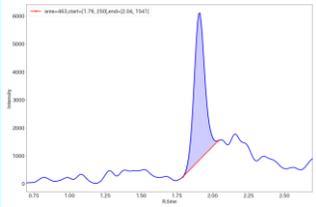


# Develop AI-Based Products



**Analytical & Measuring Instruments**

- **Liquid Chromatograph Mass Spectrometer (LC/MS)**  
Automatic MS data analysis.  
(Released in Sep. 2019)

Uses AI to quickly and accurately read data without depending on operators.

**Analytical & Measuring Instruments**

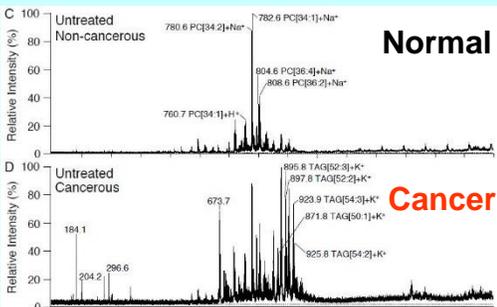
- **Cell Culture Analysis System**  
Automatic area measurement  
(Released in Sep. 2019)




Uses AI to automatically measure area for confirming cell growth status.

**Analytical & Measuring Instruments**

- **Rapid Cancer Diagnostic Support System**  
Automatically identifies cancer.  
(Currently in clinical trials)

Uses AI to rapidly determine the probability of cancer being present.

**Medical Systems**

- **Fluoroscopy System**  
Detects femur area for BMD measurements.  
(Released in Aug. 2019)




SmartBMD AI Assist

Uses AI to automatically isolate the outline of femurs in X-ray images.

# Integrating Analytical and Medical Technologies

## Advanced Healthcare

Extend healthy life expectancy by integrating healthcare with visualization by imaging and quantitative analysis using a mass spectrometer



Offer Shimadzu technologies for research and development of solutions for each stage of overcoming diseases, such as cancers and lifestyle diseases, and achieving a healthy life cycle, including early diagnosis, diagnosis, treatment, and prognosis.



Support for photoimmunotherapy research

- [Video >](#)
- [Description of technology >](#)



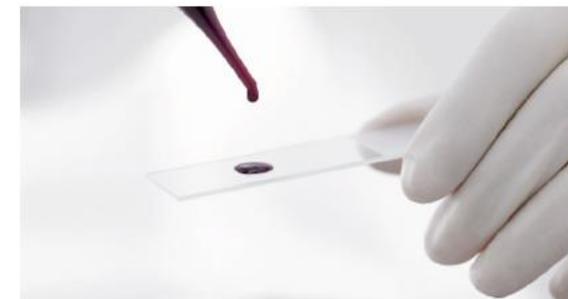
Development of AVS support system for primary aldosteronism

- [Video >](#)
- [Description of technology >](#)



Development support for Alzheimer's drug discovery

- [Video >](#)
- [Description of technology >](#)



Future of minimally invasive early diagnosis

- [Description of technology >](#)

# New System Products Based on Both Analytical and Medical Systems

## An Integrated System that Displays Both Medical Images and Mass Spectrometry Data in the Same Window

- Joint development with Tohoku University: Primary aldosteronism diagnosis and surgery
- Reducing the burden on patients by performing both the examination and surgery on the same day
  - Conventional methods involve acquiring blood via a catheter, blood testing outsourced before the surgery.
  - Then one week later, surgery is performed by viewing LCMS data.

**Medical: Angiography system**

**Analysis: LCMS**

**Integrated Software Window**



**Image data**

**Mass spectrometry data (numeric)**



**Data integration software (Integrates medical imaging data with analytical mass spectrometry data.)**



#	採血管ID	血管名	採血時刻	Aldosterone	Cortisol	A/C	ステータス
①	SHIMADZU001	RAV_CV	-	RI.E	14.23	-	分析完了
②	SHIMADZU002	LAV_CV	-	RI.E	24.21	-	分析完了
③	SHIMADZU005	EV	-	RI.E	RI.E	-	分析完了
④	SHIMADZU003	LAV_IPV	-	RI.E	23.24	-	分析完了
⑤	SHIMADZU004	RAV_CV	15	2256.09	776.80	2.90	分析完了
⑥	SHIMADZU006	LAV_CV	17	3978.23	1453.25	2.74	分析完了
⑦	SHIMADZU007	EV	17	RI.E	17.55	-	分析完了
⑧	SHIMADZU008	LAV_IPV	19	3346.58	1209.73	2.77	分析完了
⑨	SHIMADZU009	LAV_tbrx	22	3511.39	1545.44	2.27	分析完了
⑩	SHIMADZU010	RAV_tbrx	23	2416.53	1378.35	1.75	分析完了
⑪	-	-	-	-	-	-	採血管ID読取
⑫	-	-	-	-	-	-	採血管ID読取
⑬	-	-	-	-	-	-	採血管ID読取
⑭	-	-	-	-	-	-	採血管ID読取
⑮	-	-	-	-	-	-	採血管ID読取

**Blood acquired from five locations**

**Mass spectrometry data (numeric values from multiple locations)**

**Medical image (blood acquisition from multiple locations)**

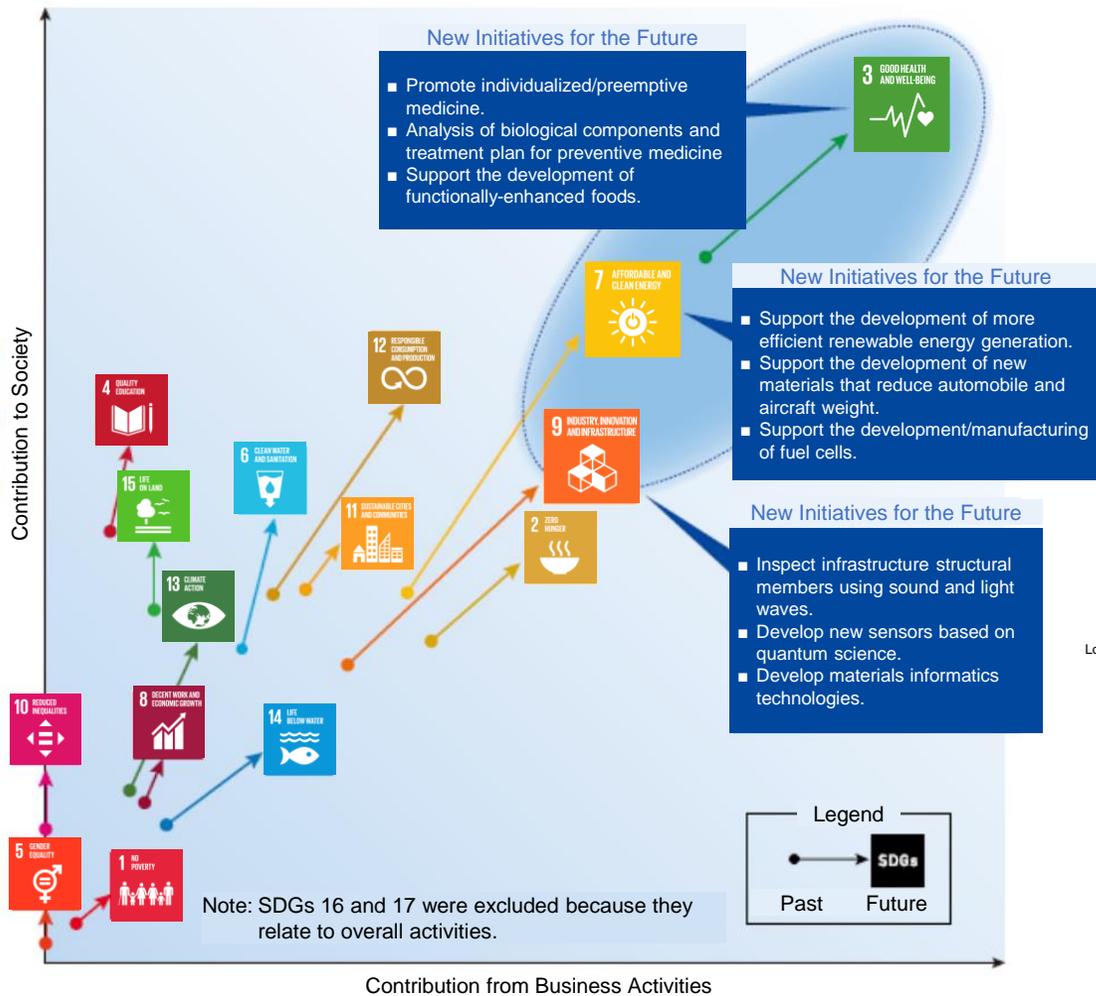
## **New System Products Based on Both Analytical and Medical Systems** **An Integrated System that Displays Both Medical Images and Mass Spectrometry Data in the Same Window**



Refer to the following URL:  
<https://www.shimadzu.co.jp/advanced-healthcare/>

# Contribution to SDGs through Business Activities

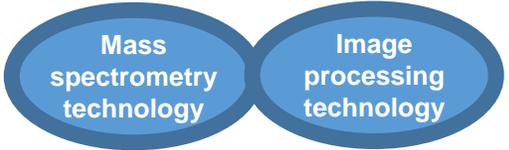
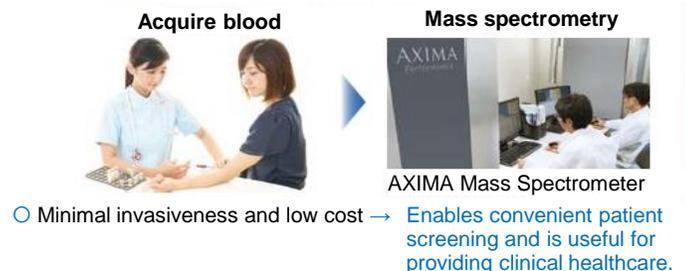
For each goal, change from current to future status is represented as a vector.



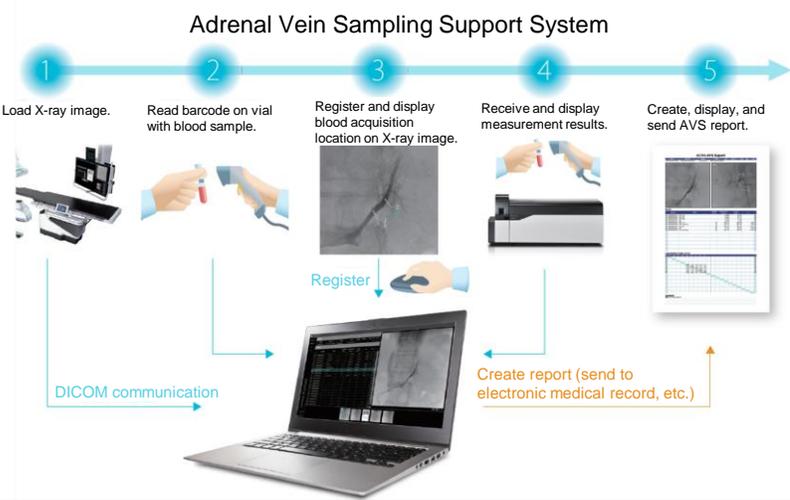
## Unmet Medical Needs and Initiatives for Ultra-Early Diagnosis

Shimadzu developed a simple technique that can detect beta-amyloids, a substance said to cause Alzheimer's disease, in a small 0.5 mL sample of blood.

### Analysis Method for Predicting Beta-Amyloid Plaque Levels in the Brain



Analyzes precisely sampled substances.  
Contributes to the advancement of healthcare.



## Identifying Diseases Scientifically

Scientifically close in on the causes of disorders by analyzing the masses of substances sampled from inside the body using a catheter or other medical device in combination with an angiography system.



不安な胸に、やさしくありたい。

島津製作所が開発した、乳がん検査技術。  
 検出器ホールに乳房を入れるだけで、  
 小さな乳がんの兆しまで見分ける  
 世界最先端技術です。



世界に答えを。

 **SHIMADZU**  
 Excellence in Science



This document contains forward-looking statements. Forecasts of future business performance that appear in this document are predictions made by the company's management team that are based on information available when these materials were prepared and are subject to risks and uncertainties. Consequently, actual results may differ materially from the forecasts indicated above. Factors that may influence actual business performance include, but are not limited to, economic conditions within and outside Japan, changes in technologies in markets, and fluctuations in exchange rates.

Contact: Investor Relations Group  
 Corporate Communication Department  
 Shimadzu Corporation  
 Phone: +81-75-823-1673 E-Mail: [ir@group.shimadzu.co.jp](mailto:ir@group.shimadzu.co.jp)