



ASM  Pacific Technology

# 2021 ANNUAL RESULTS PRESENTATION

*23<sup>rd</sup> February 2022*

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# AGENDA

**Group Key Highlights**  
**Outlook**  
**Key Investor Takeaways**  
**Financial Appendix**  
**Q&A**





# GROUP KEY HIGHLIGHTS

# Group Key Highlights

**FY21 Record Breaking Financial Performance**

**Progress & Development in Advanced Packaging**

**Exciting Growth Opportunities – Automotive, Advanced Displays  
and Memory Markets**

# Group Key Highlights

**FY21 Record Breaking Financial Performance**

**Progress & Development in Advanced Packaging**

**Exciting Growth Opportunities – Automotive, Advanced Displays  
and Memory Markets**

# 2021 Group Financial Results

## Record EPS, Revenue, Bookings and Net Profit

(+49.3% YoY)

US\$2.82B



Revenue<sup>1</sup>

(+65.6% YoY)

US\$3.36B



Bookings<sup>1</sup>

(+427 bps YoY)

40.6%



Gross Margin<sup>1,2</sup>

(+94.5% YoY)

HK\$7.72



EPS



Backlog<sup>1</sup>



Net Profit<sup>1,2,3</sup>

(+68.7% YoY)

US\$1.29B

(+273.6% YoY)

HK\$3.24B

(+1,007 bps YoY)

18.9%



Operating  
Margin<sup>1,2</sup>



DPS

(+44.4% YoY)

HK\$3.90



Notes

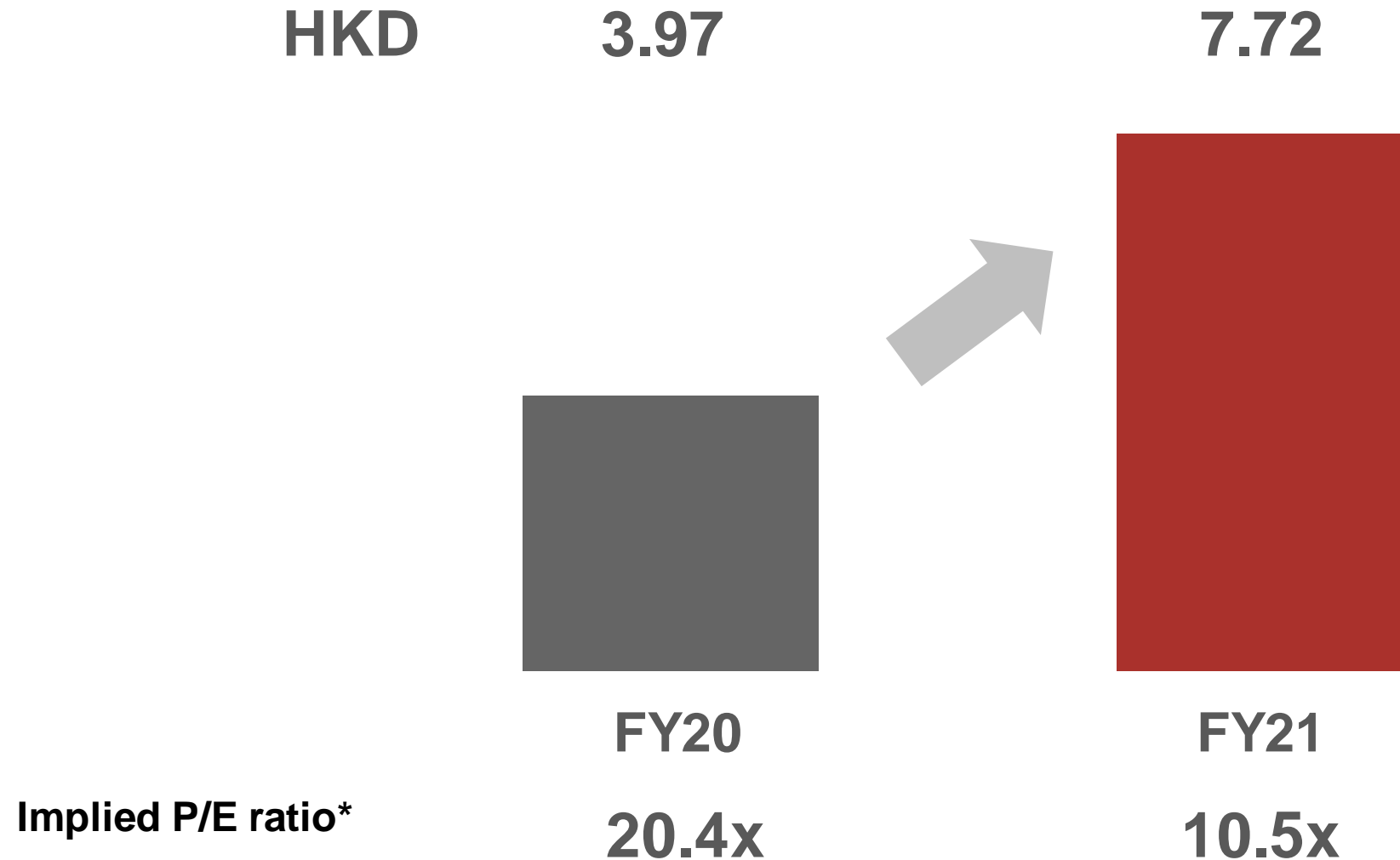
<sup>1</sup> results from continuing operations

<sup>2</sup> excluding one-off items and their related tax impact recorded in Q4 2020 of HK\$230.9 million

<sup>3</sup> excluding one-off items and their related tax impact recorded in Q4 2021 of HK\$65.5 million

# 2021 Group Financial Results

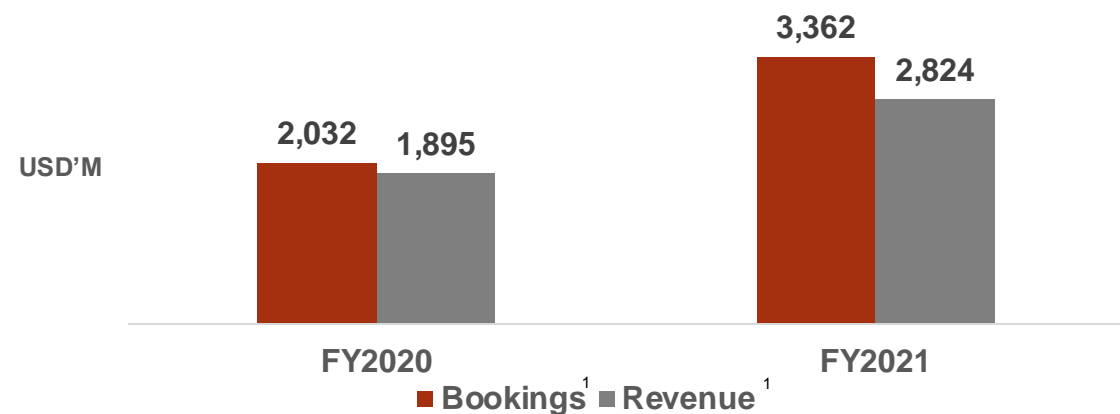
Record EPS of HK7.72, Representing Growth of 94.5%



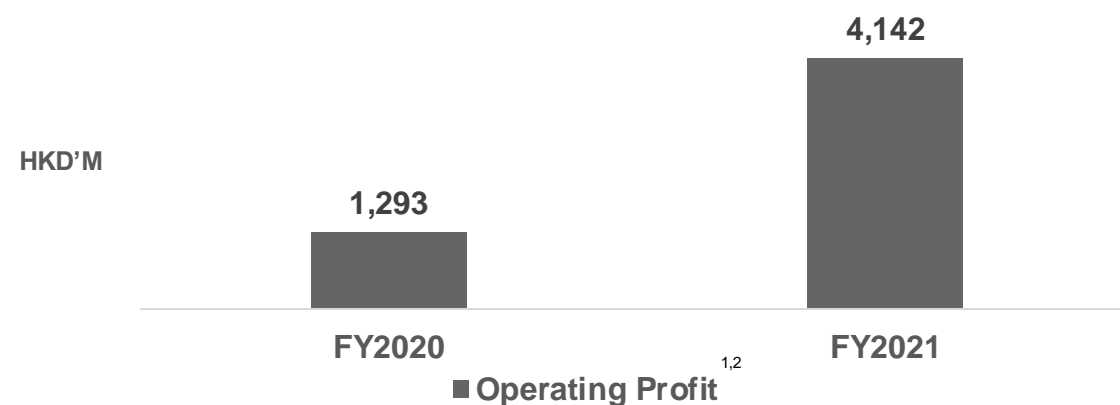
\* Implied P/E ratio is computed on the reference closing share price of HK\$80.90, 18 February 2022



# FY21 Group Financial Results



Gross Margin <sup>1,2</sup>	36.3%	40.6%
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Operating Margin <sup>1,2</sup>	8.8%	18.9%
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## Record Bookings, Revenue and Operating Profit

Record bookings for SEMI and SMT

FY21 Revenue drivers:

- Prior years under-investment in capital equipment
- Semiconductor self-sufficiency drive
- Broad based end-market demand strength
- Long-term secular macro growth trends

Margin improvement:

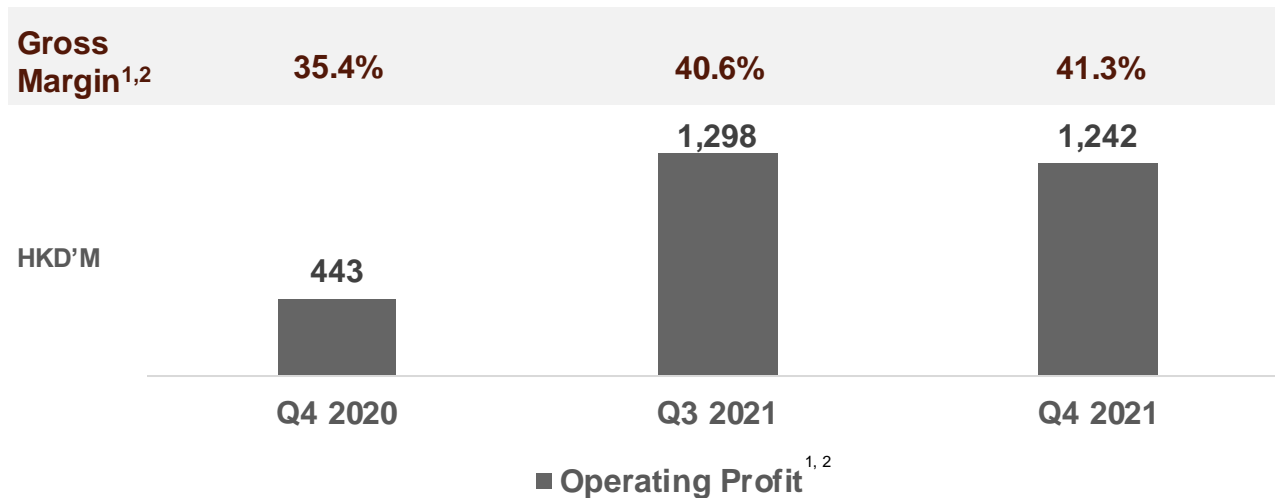
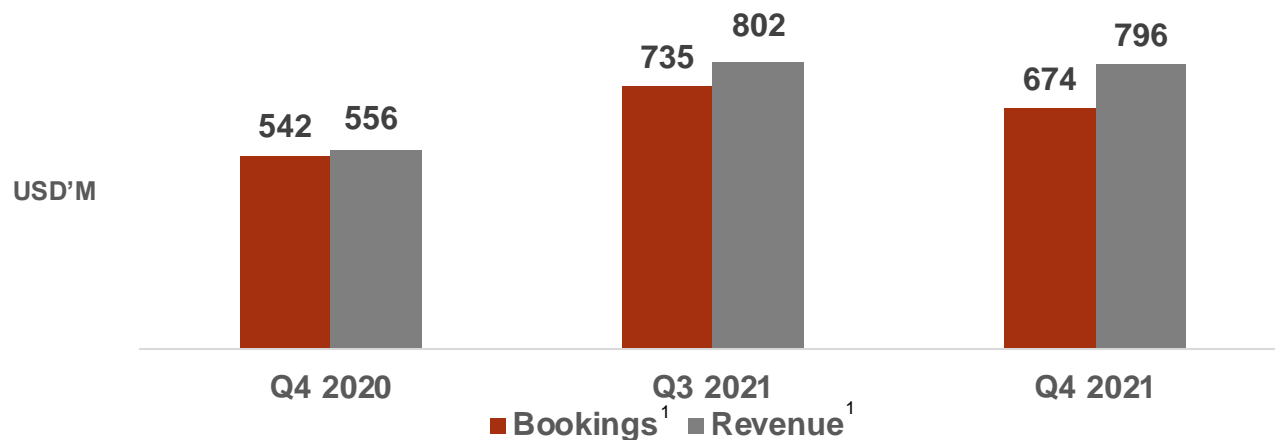
- Higher SEMI and SMT Gross Margin
- High operating leverage

Notes

<sup>1</sup> results from continuing operations

<sup>2</sup> excluding one-off item recorded in Q4 2020 of HK\$199.3 million

# Q4 2021 Group Financial Results



## Revenue exceeded guidance

### Q4 Bookings:

- Elevated compared to prior years' Q4 level
- QoQ declined in line with seasonality

### Margin improvement:

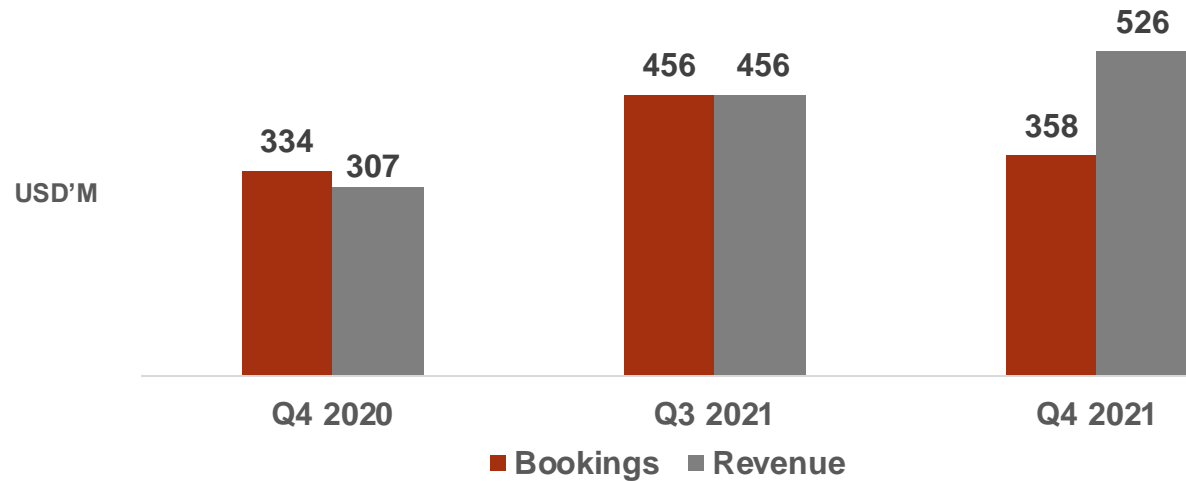
- Higher SEMI revenue mix
- Higher SEMI and SMT Gross Margin

#### Notes

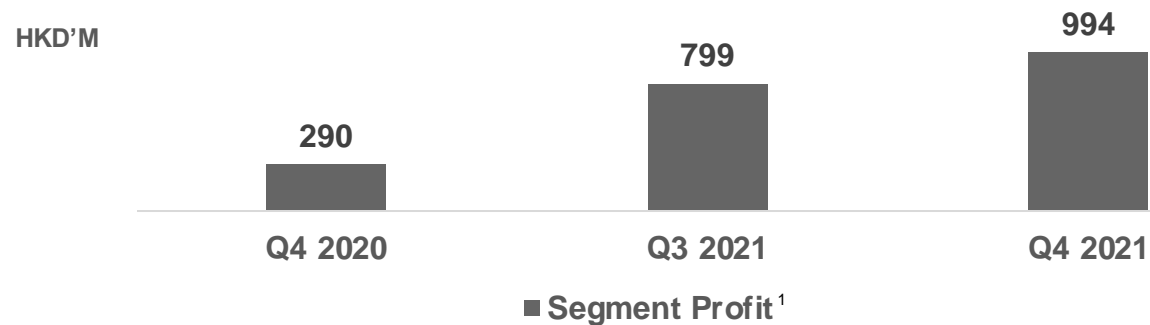
<sup>1</sup> results from continuing operations

<sup>2</sup> excluding one-off item recorded in Q4 2020 of HK\$199.3 million

# Q4 2021 Semiconductor Solutions Segment Performance



Gross Margin <sup>1</sup>	39.0%	43.6%	43.7%
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Segment Margin <sup>1</sup>	12.2%	22.5%	24.3%
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## Robust Q4 revenue growth

### Q4 Bookings:

- Mainstream – Die and Wire bonders
- Advanced Packaging (AP) – Panel level ECD and TCB
- QoQ declined in line with seasonality

### Q4 Revenue drivers:

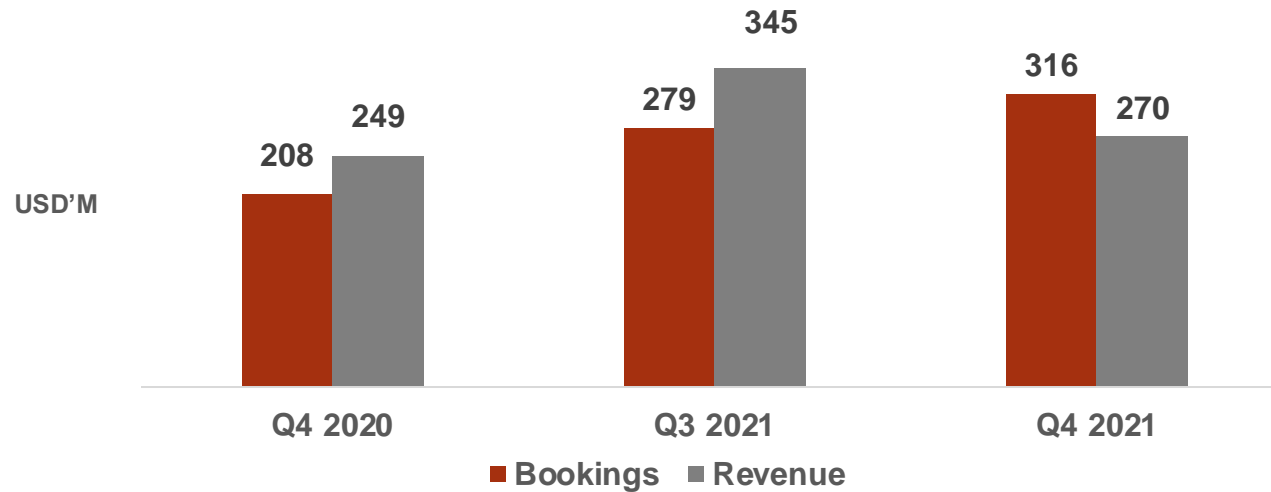
- IC/Discrete
  - Mainstream – Die and Wire bonders and Test Handlers
  - AP – FC bonders, Laser dicing and grooving, Panel level ECD
  - 12-inch Die Bonders gained market share in 2021
- Optoelectronics
  - Conventional and advanced displays, general lighting and photonics applications
  - Silicon photonics registered consecutive QoQ growth
- CIS
  - Declined YoY and QoQ – Semiconductor supply bottlenecks
  - YoY increase – Active alignment revenue supported by broad customer base

### Margin improvement:

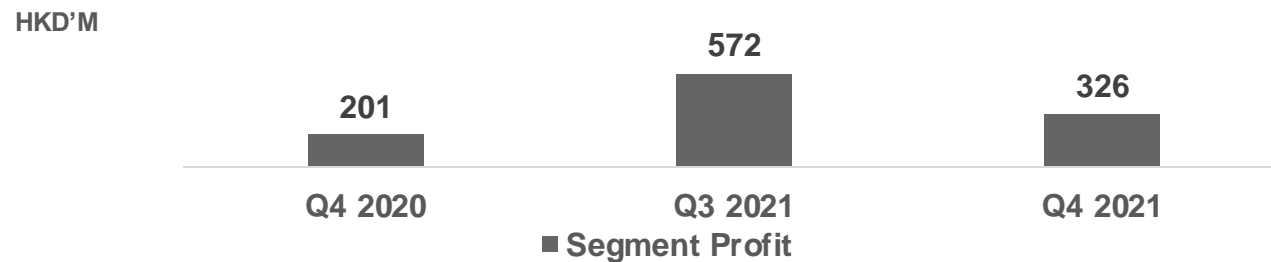
- YoY – Higher volume and capacity utilisation

Note: <sup>1</sup> excluding one-off item recorded in Q4 2020 of HK\$199.3 million

# Q4 2021 SMT Solutions Segment Performance



Gross Margin	31.1%	36.6%	36.7%
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Segment Margin	10.4%	21.3%	15.5%
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## Automotive and Industrial demand momentum continued

### Q4 Bookings:

- QoQ and YoY increase
- Automotive and Industrial demand momentum continued

### Q4 Drivers for Revenue:

- Mainstream – High-end placement tools
- AP – SiP from mobile and wearables
- Strong interest in new DEK TQ printer platform

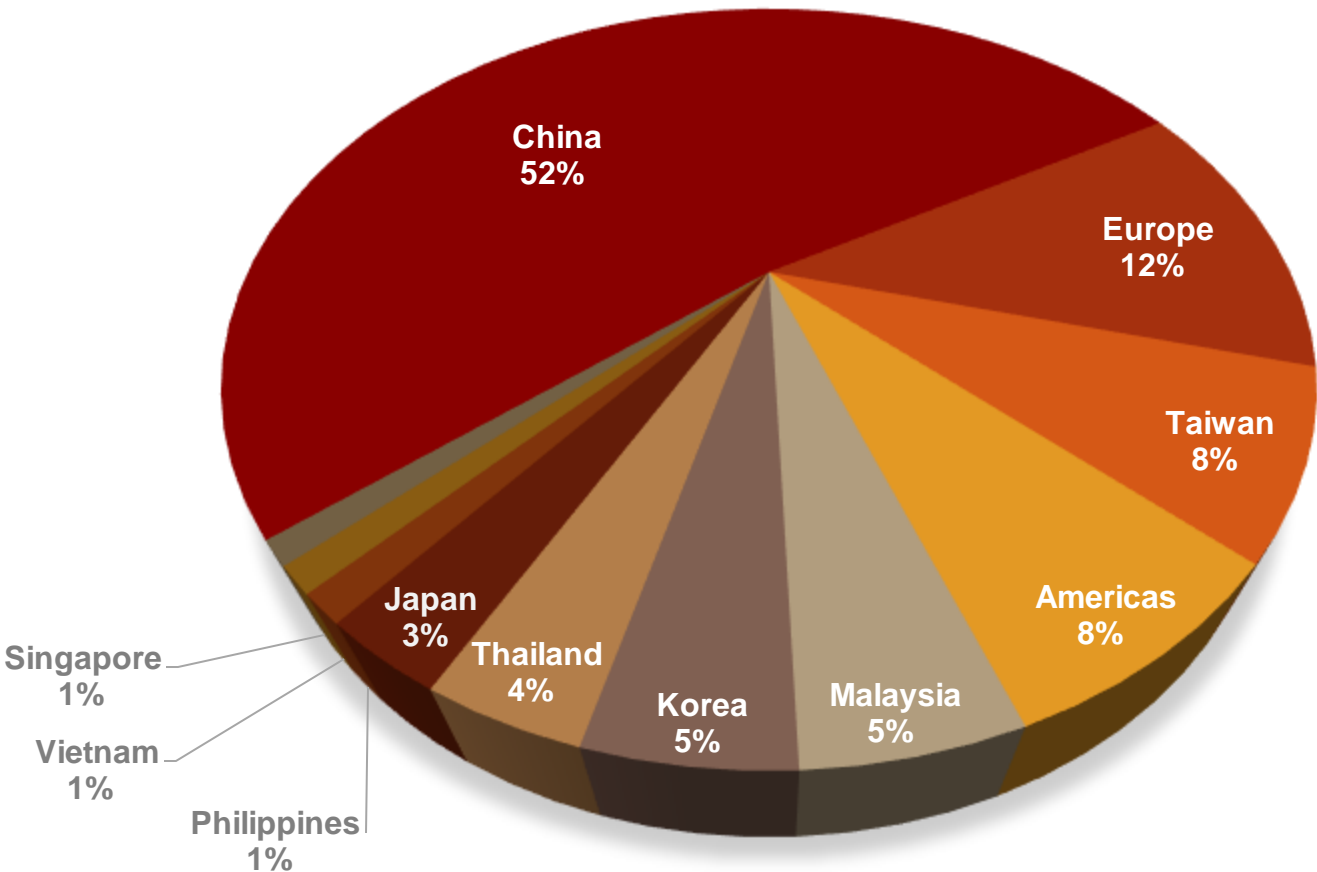
### Margin improvement:

- Higher volume and product mix

# Key Partner to Industry Leading Customers

Serving Industry-Leading Semiconductor and Electronics Manufacturers Globally

FY21 Revenue Breakdown by Geography



### Customer Groups

OEM	Fabless/Foundry
OSAT	EMS
IDM	LED Manufacturers
CIS Camera Module Manufacturers	High Density Substrate Manufacturers



# Group Key Highlights

**FY2021 Record Breaking Financial Performance**

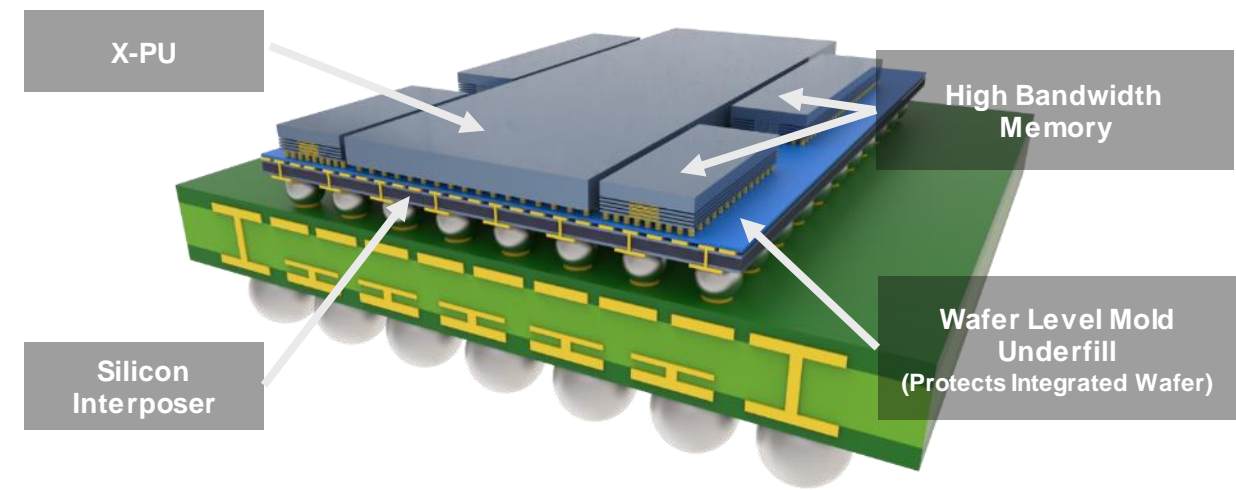
**Progress & Development in Advanced Packaging**

**Exciting Growth Opportunities – Automotive, Advanced Displays  
and Memory Markets**

# Advanced Packaging

## Broadening Customer Base




The Group's diverse AP portfolio spans wafer-level to die-level high-accuracy placement tools and SiP placement tools, addressing a broad range of packaging technologies (2.5D, 3D-IC, Fan-in, Fan-out Wafer-Level and SiP)



**FY21 Revenue approx. USD 590M – 35% YoY increase**

- AP Book-to-Bill ratio of 1.15 in FY21, above FY20 level
- Strong customers acquisition momentum in FY21

- Hybrid Bonding – on track for delivery in 2022 for customers’ qualification
- Meaningful contributions, in line with customer ramp-up plans, expected in 2023

Advanced Packaging Processes	Physical Vapor Deposition	Electro-Chemical Deposition – Wafer/Panel Lvl Plating	Laser Dicing	Wafer/ Panel Lvl Molding	Wafer/ Panel Lvl Fan Out	Ultra Precision Die Bonding (Silicon Photonics)	Mass Transfer (Mini/Micro LED)	Multi-Chip Module Bonding	Thermo Compression Bonding	Flip Chip	Wafer Level Fan In	SMT SiP Placement
ASMP Solutions												
	Apollo	Stratus Series	Laser 1205	ORCAS	NUCLEUS	NANO	AD300 Series	VECTOR	FIREBIRD	AD8312FC	SUNBIRD	SIPLACE TX Micron

# TCB – Extending our Technological Leadership

Significant Order Win for New Generation Chip-to-Wafer (C2W) TCB tool for Heterogeneous Integration

## Existing Generation

### Firebird TCB C2S (2019)



- Chip-to-Substrate tool
- Single bond head with accuracy of  $\pm 2\mu\text{m}$
- Established dominant installed base worldwide

## New Generation

### Firebird TCB C2W (2022)



- Latest Generation Chip-to-Wafer tool
- Key features and improvement from existing generation:
  - Dual bond head
  - 2X throughput
  - 2X accuracy ( $\pm 0.8\mu\text{m}$ )
- **Significant order win close to US\$ 100M from a major customer**

## Future Generation



- In Progress: Development of next generation TCB tool
- Enables fine solder bump pitch below  $30\mu\text{m}$
- First prototype expected to be delivered by 2<sup>nd</sup> Half of 2022

# Group Key Highlights

**FY2021 Record Breaking Financial Performance**

**Progress & Development in Advanced Packaging**

**Exciting Growth Opportunities – Automotive, Advanced Displays  
and Memory Markets**

# Automotive Electrification – Multi-Year Growth Driver

**Wire Bonding**



**Mass Bonding and Transfer**



**LED / Advanced Display Solutions**



**Die Bonding**



**Wire Bonding**



**Heavy Aluminum Wire Bonding**



**Die / Wire Bonding and Molding Solutions**

**TCB**



**Panel Plating**



**Laser Dicing/Grooving**



**Advanced Packaging (AP) Solutions**

**Die Bonding**



**Active Alignment**



**Automated Optical Inspection**



**CMOS Image Sensor (CIS) Solutions**

**Printing**



**Pick & Place**



**Solder Paste Inspection**



**Surface Mount Technology (SMT) Solutions**

**Encapsulation**



**Multi Chip Mounting**



**Silver Sintering**



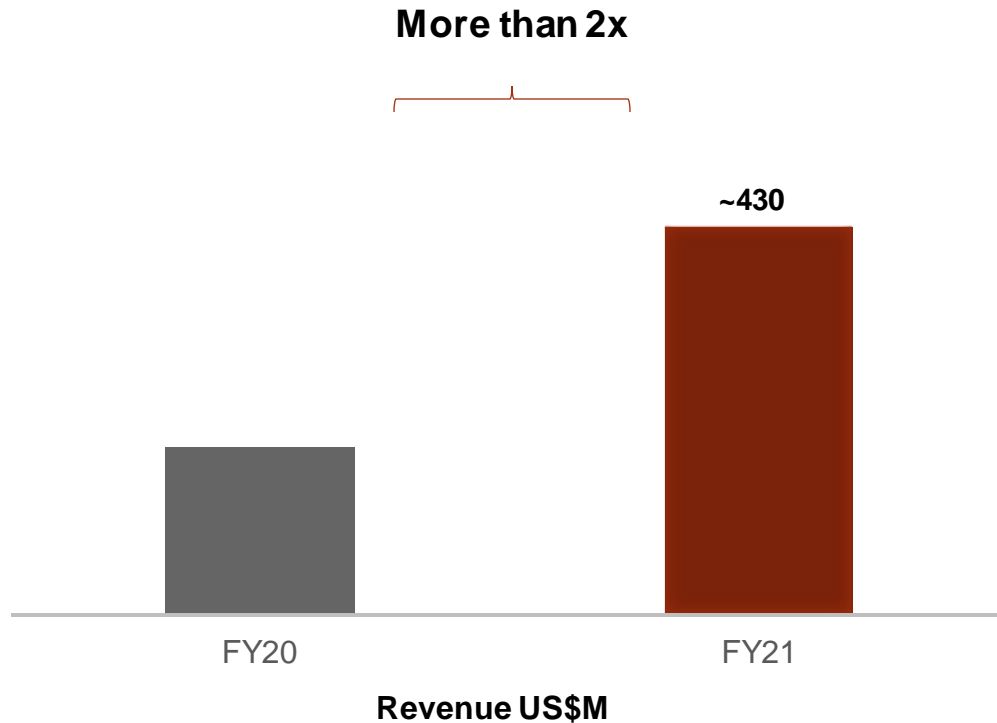
**Silver Sintering Solutions**



# Automotive Electrification – Multi-Year Growth Driver

## Comprehensive Solutions to Address Automotive Market

- Revenue from Automotive applications more than doubled vs. FY20
- Number of customers served increased significantly in FY21
- New customers to generate significant opportunities going forward



### Silver Sintering Solutions



Power Module

### Automotive CIS Solutions



Vehicle LiDAR Module

### LED / Advanced Display Solutions



In-Vehicle Micro LED Display

### Advanced Packaging Solutions



Self-Drive Computing Board

### SMT Solutions



Automotive PCB

### Die/Wire Bond & Mold



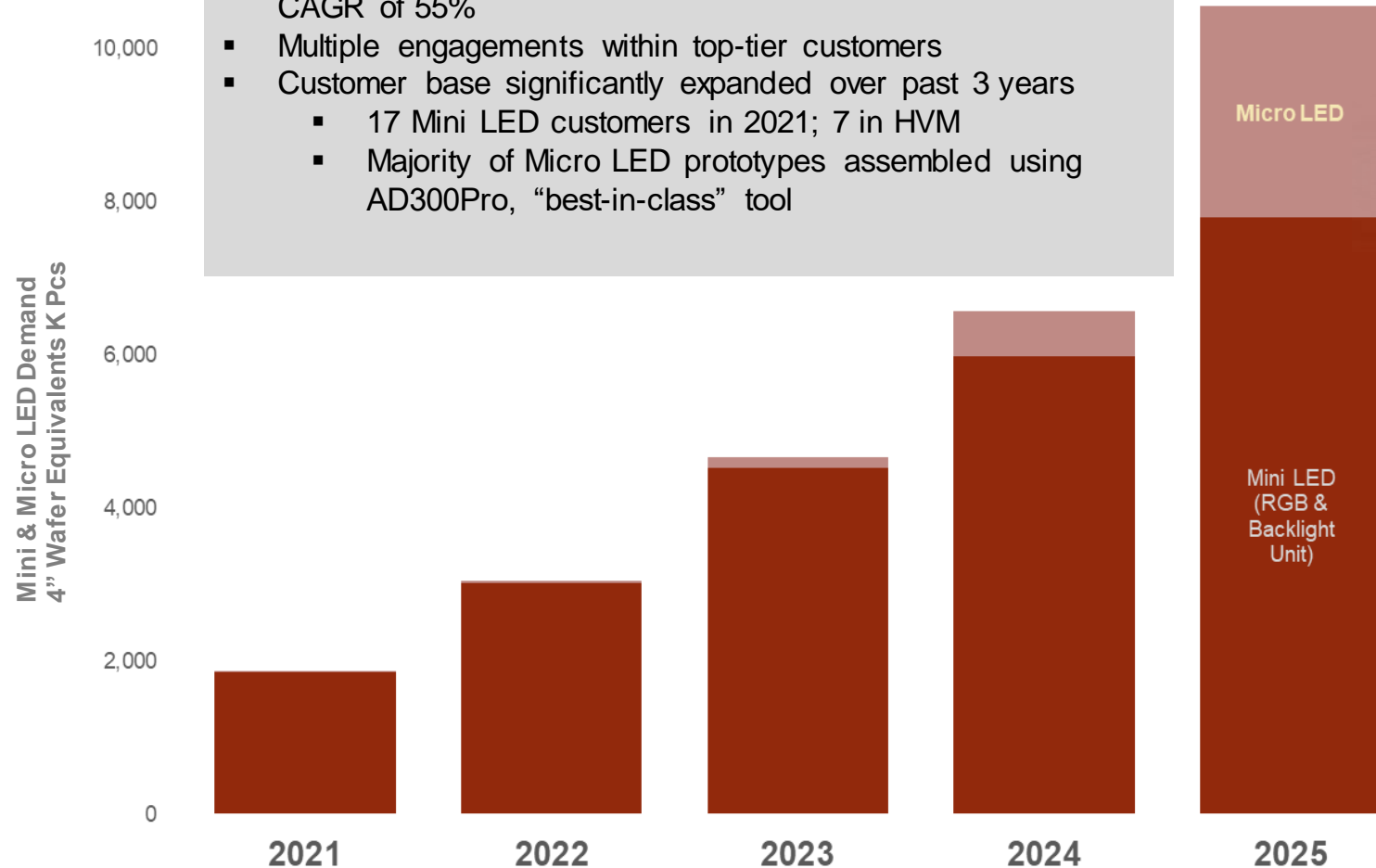
Power Discrete Packages  
Analog, Logic, MCUs

\*Automotive solutions provided by ASMPT

# Advanced Display – Inflection Point for Growth

## Poised to Benefit from Expanding Addressable Market

- Mini and Micro LED wafer output expected to expand at 5-Yr CAGR of 55%
- Multiple engagements within top-tier customers
- Customer base significantly expanded over past 3 years
  - 17 Mini LED customers in 2021; 7 in HVM
  - Majority of Micro LED prototypes assembled using AD300Pro, “best-in-class” tool



### AD300Pro

#### Micro LED

Chip Size: <50µm  
Pitch Size: 0.2mm



### VORTEX Series

#### Mini LED RGB

Chip Size: >50~300µm  
Pitch Size: 0.3mm to 1.0mm

#### Mini LED BLU

Chip Size: >300µm  
Pitch Size: 0.3mm to 1.0mm

Source: Trendforce, Sept 2021

# Advanced Display – Inflection Point for Growth

## MiniLED BLU

Chip Size: >300μm  
Pitch Size: 0.3mm to 1.0mm



Mini LED Laptop



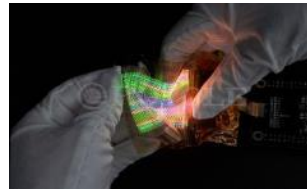
Tablet



Mini LED TV



Mini LED Monitor



Stretchable Display



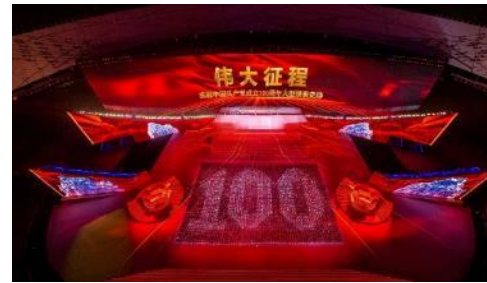
Rollable Display



2K Mini LED RGB TV

## MiniLED RGB

Chip Size: >50~300μm  
Pitch Size: 0.3mm to 1.0mm



Video Wall

## Micro LED

Chip Size: <50μm  
Pitch Size: 0.2mm



Automotive CID



Transparent Display



89" 5K Video Wall



Micro LED Watch

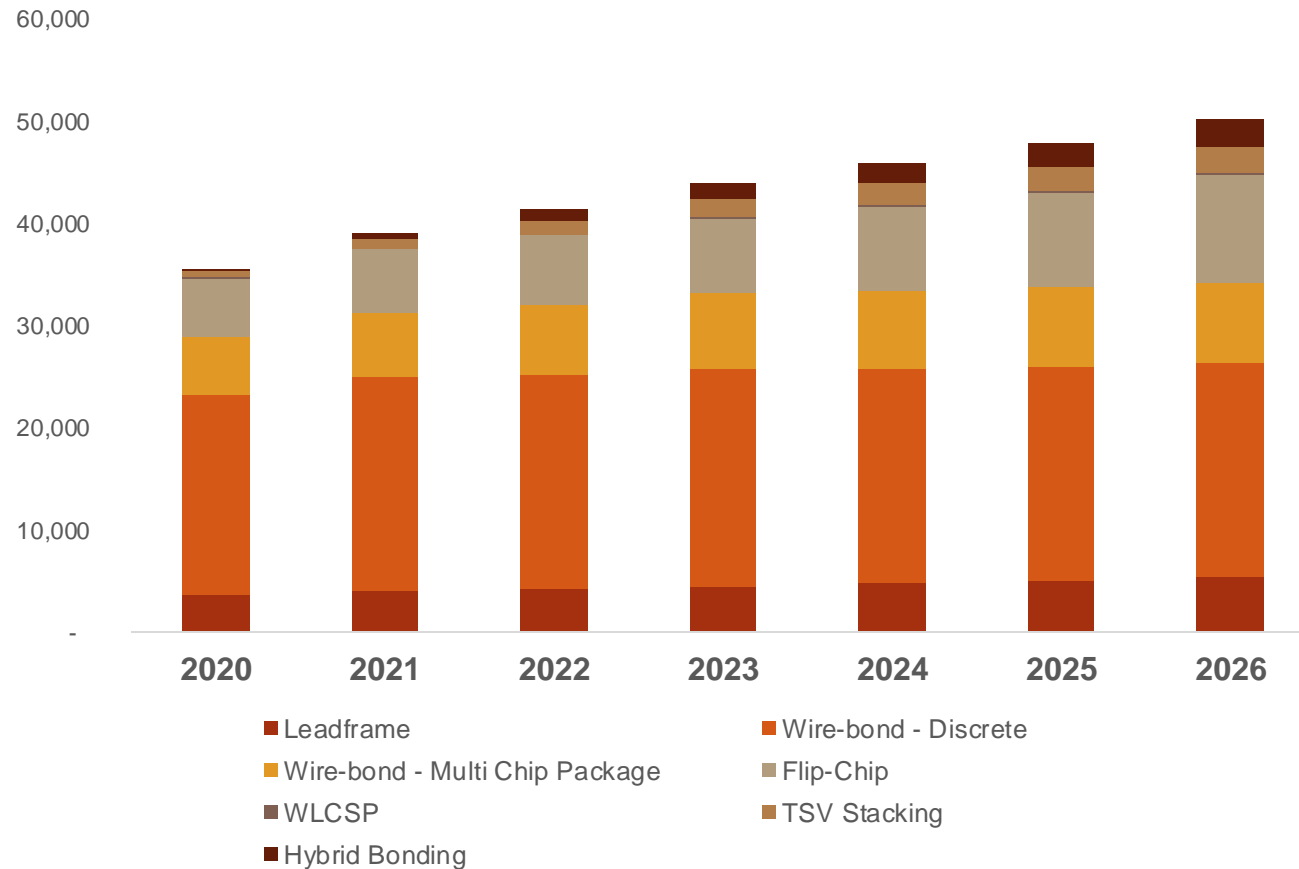


Transparent Display

# Memory Market – Strategic Breakthrough

Foothold in High-Bandwidth and Market Share Gain in Conventional Memory Applications

Memory Packaging Market  
(Market Volume in '000s 12' wafer equivalent)



## Breakthrough to a Sizeable Addressable Market

- TCB qualified by Tier One memory player for HBM3 multi-die stacking application
- Wire Bonder in high volume production of new generation NAND memory

Wire Bonding



Thermo Compression Bonding



Suite of conventional and advanced packaging tools to address the Memory Packaging Market

Source: Yole Développement, Memory Packaging, 2021

# Key End-Market Applications

Serving a Broad-based End-Market Applications\*

Computers	Consumer	Communication	Industrial	Automotive	Others**
 <p>Personal Computers Servers Datacentres HPC Other Computers</p>	 <p>TV Wearables Audio devices Video devices Gaming consoles Other Consumers</p>	 <p>Smart Phones Wired Infrastructure Wireless 5G Communications Infrastructure</p>	 <p>EV Charging Smart Factories Smart Offices Other Industrial</p>	 <p>Visual Sensors Infotainment LIDAR Sensors Power Management V2X communications Entertainment Platforms</p>	 <p>Medical Devices Aerospace Others</p>

FY21  
Revenue

~12%

~23%

~22%

~10%

~16%

~17%

\*End Market classification is based on management's best estimates.

\*\*Others include revenue from spares and services and other end market applications that cannot be meaningfully identified.



# Key End-Market Applications

Automotive, Consumer and Industrial – Sharp Growth, Doubled YoY

## Automotive



- Automotive electrification and general recovery of Automotive sector
- Number of customers served increased significantly in FY21

## Consumer



- Wearable devices, gaming devices, general lighting and conventional RGB displays
- Adoption of mini LED in consumer devices heightened demand for advanced display tools
  - 17 new mini LED customers in FY21, with 7 in high volume manufacturing

## Industrial



- Broad based demand for automation and control devices in varied application, including smart grids and EV charging infrastructure



# OUTLOOK

# Revenue Guidance



**Q1 2022 Revenue Guidance**

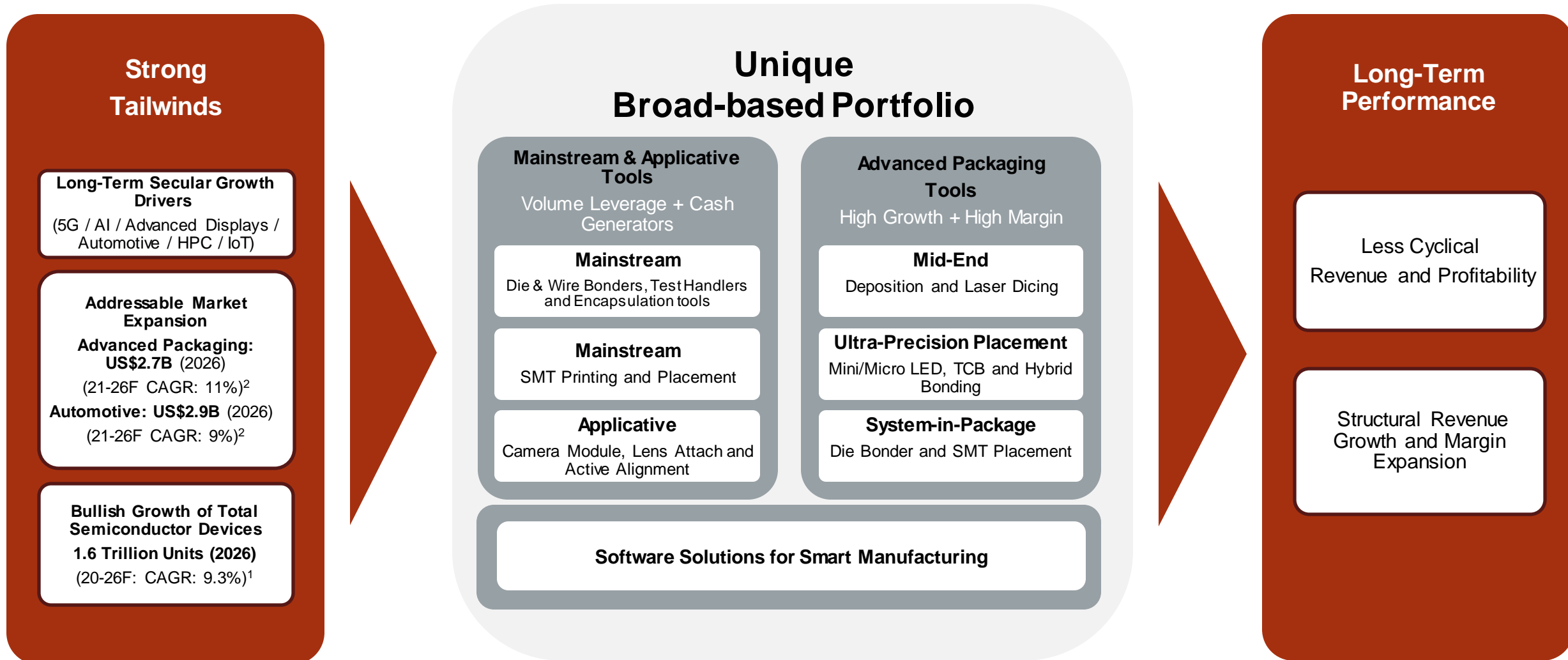
**USD 640M to USD 690M**



# KEY INVESTOR TAKEAWAYS

# Key Investor Takeaways

## Unique Broad-Based Portfolio



<sup>1</sup> VLSIresearch Worldwide Semiconductor History and Forecast, December 2021

<sup>2</sup> Company Management's Estimates



# Key Investor Takeaways

## Two-Pronged Growth and Cost Optimisation Initiatives

### Growth

#### Mainstream & Applicative Tools Grow Market Share

##### Focus on High-End Segment

##### Grow in Adjacent Markets

- Memory: Wire Bond
- ADAS: Camera
- EV: Silver Sinter Solutions
- Fuel Cell: SMT Printing

##### Product Enhancements

- USP Laser Dicing/Grooving
- 12" Die Bonding
- High Power Module Assembly
- Camera for AR/VR

#### Advanced Packaging Tools Widen Technological Leadership

##### Intensification of R&D

##### Grow in Emerging Markets

- HBM3: TCB Die Stacking
- Mini/Micro LED: Mass Bonding
- System-in-Package: SMT & Multi-Chip Module Bonding
- HPC: Hybrid Bonding

##### Process Innovations

- Ultra fine-pitch TCB
- Sub-surface Laser Dicing
- Glass Stacking for AR/VR
- Laser-Assisted Mass Bonding for Micro LED

Exciting Growth Prospects of AIoT-enabled Smart Factory

### Cost Optimisation

**Improving Product & Operational Cost Structures**  
(Procurement / Design to Cost)

**Enhancing Manufacturing Flexibility & Scalability**  
(Optimal Mix of Internal vs. External Manufacturing)

### Long-Term Performance

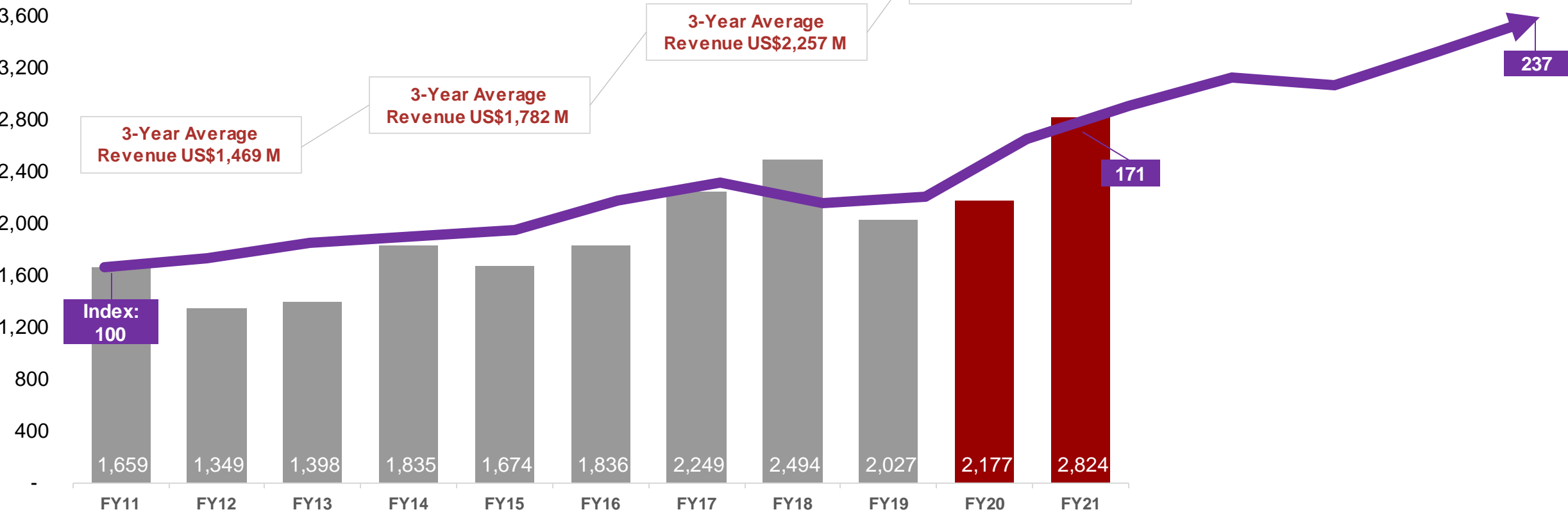
Less Cyclical Revenue  
and Profitability

Structural Revenue  
Growth and Margin  
Expansion

# Key Investor Takeaways

Through-cycle Revenue Growth in Tandem with Semiconductor Devices Growth

Group Revenue (in US\$M)



Note: The number of semiconductor units produced in 2011 is set at index 100

Semiconductor Units, Source: VLSIresearch, Dec 2021

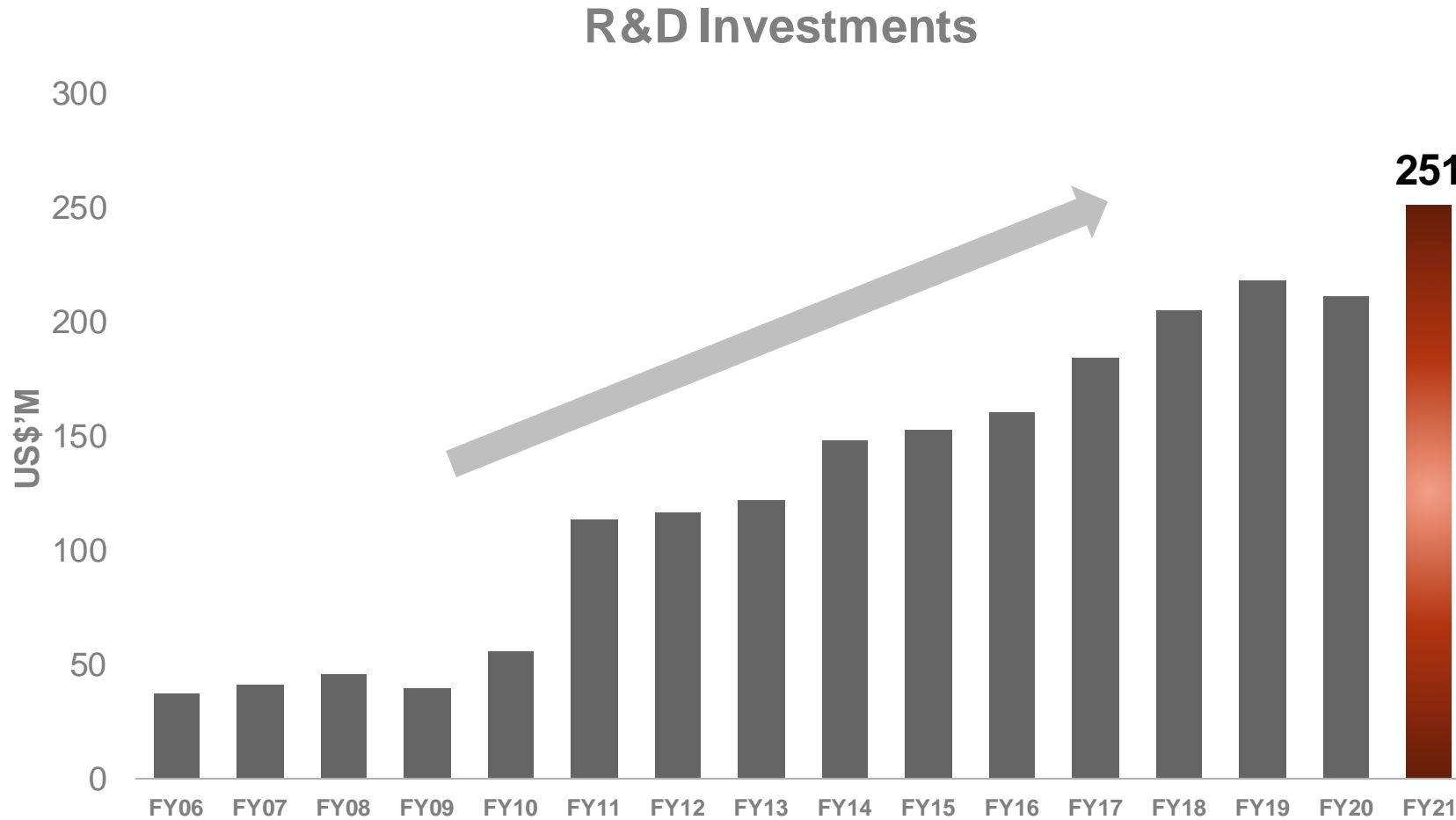
Legend

Semiconductor Units

ASMPT Revenue

# Key Investor Takeaways

## Increasing R&D Expenditure

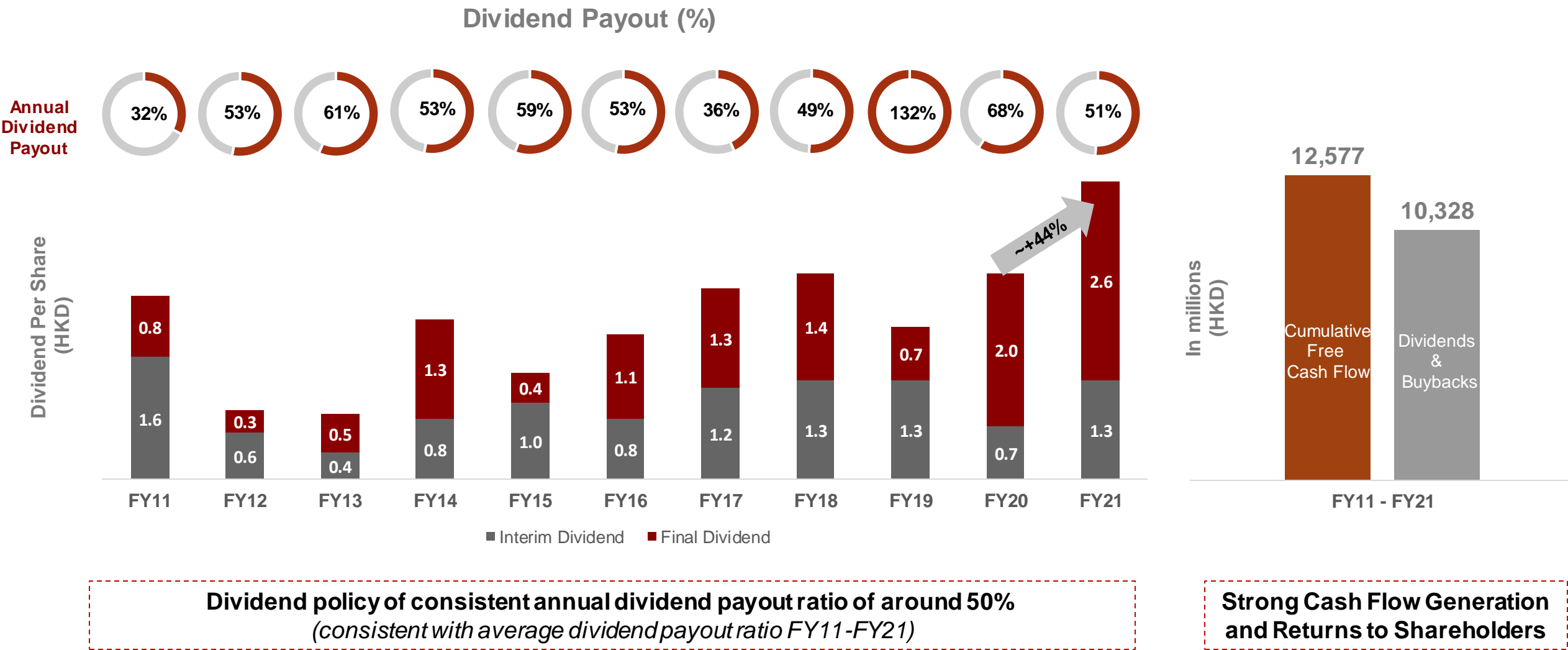


### Commitment to R&D

- About 10% of Equipment Revenue is invested into R&D each year
- R&D expenditure for FY21: US\$251m

# Key Investor Takeaways

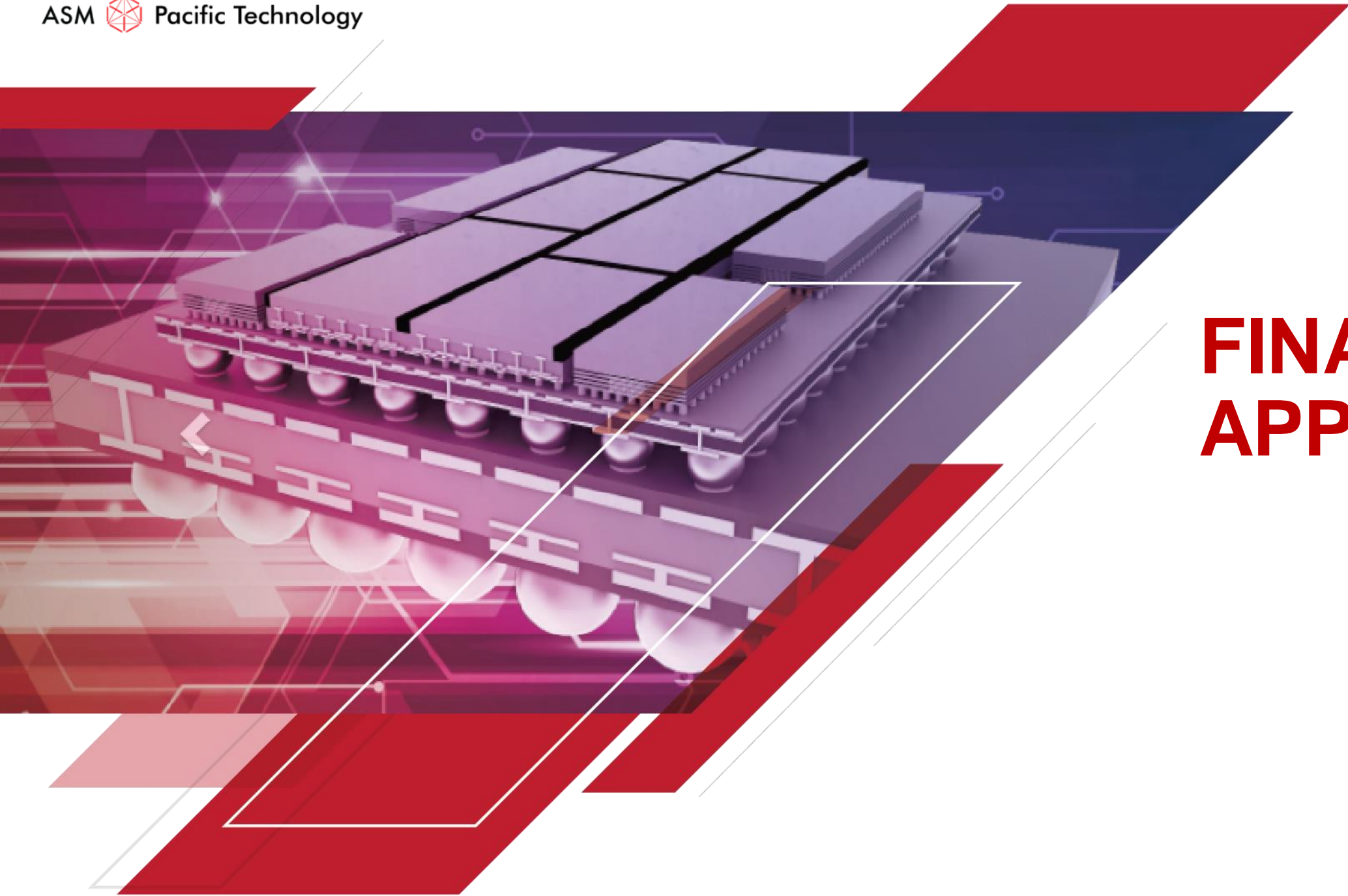
Attractive and Sustainable Dividend Payout Ratio Policy Supported by Sustainable Cash Flow Generation



# Key Investor Takeaways

## What Makes ASMPT a Compelling Value Proposition

- Strong and sustainable cash flow generation from Mainstream and Applicative Tools fueled by bullish semiconductor devices unit growth
- Continual margin expansion from intensification of R&D in high growth and high margin Advanced Packaging and Automotive market segments funded by strong cash flows
- Leadership position in key electronic sectors from mid-end to back-end to SMT cushions cyclical volatility and underpins Through-Cycle revenue and profitability growth
- Dividend payout ratio of 50% generates attractive returns to Shareholders

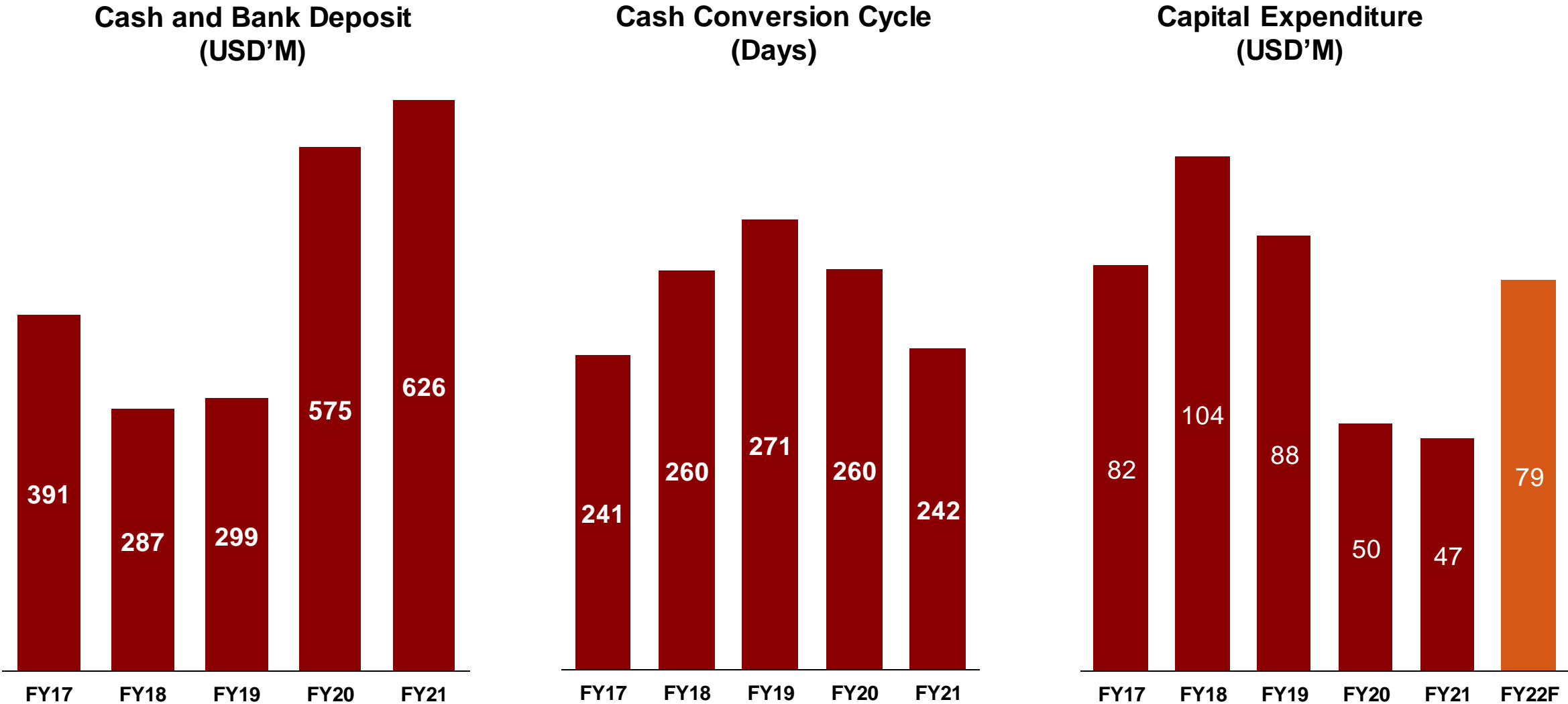


# FINANCIAL APPENDIX



# Group Balance Sheet Highlights

## Strong Cash Balance with Improving Cash Conversion Cycle





# Q&A



# THANK YOU