TSMC Investment Memo

Pegasus Group | LTS Challenge 2025

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TSM: BUY!

Current price
USD 205.18

25.3%
upside

14.4%
IRR (5y)

Target price
USD 257.11

Investment theses summary

1. Sustainable and irrefutable protagonism

Pioneering scale and superior margins, TSMC’s leadership in advanced nodes ensures its long-term dominance

+90% Market share in <= 7nm nodes

2. Strategic partnerships

TSMC’s unique positioning attracts key AI and High Processing Computers (HPC) partners, boosting its wafers pricing power

123% Increase in average wafer price

3. Excellent management at a key moment

Skilled talent plays a key role in TSMC’s success, driving global expansion while helping mitigate geopolitical risks

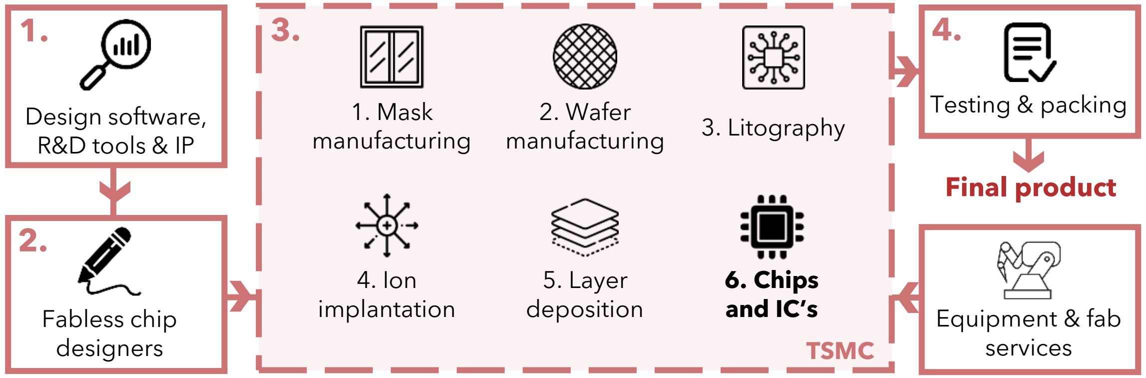
USD 73bn Invested in new fabs outside Taiwan

Foundries in a nutshell

Foundries occupy a fundamental space in the production chain, with well-established players due to strong entry barriers

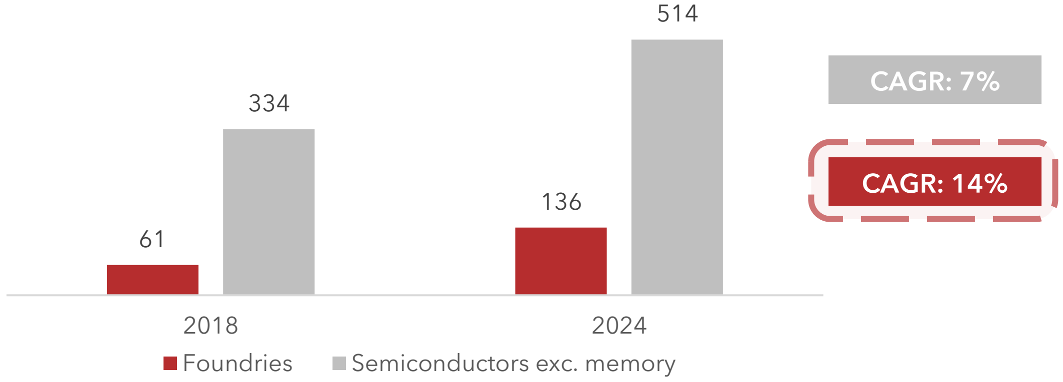
1. Foundries are involved in key **technologically complex** processes

TSMC role in semiconductors value chain



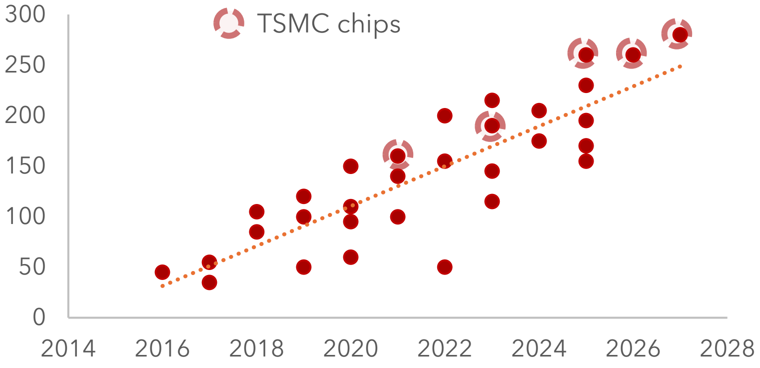
2. Rising demand for advanced chips fueled faster foundry growth

Semiconductors vs foundries market size evolution (USD bn)

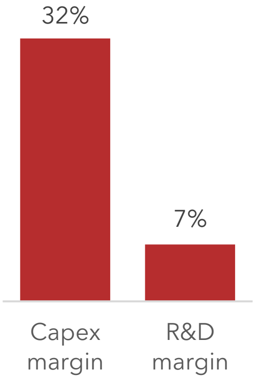


3. The race for advanced nodes demands heavy **Capex** and **R&D** investments…

Transistor density evolution (MTr x mm2)

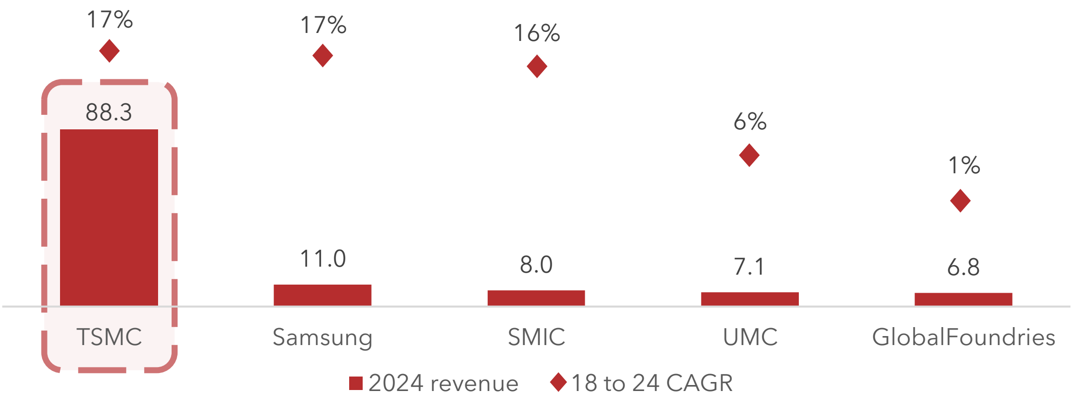


Average top 4 players Capex and R&D margin



4. …With **65%** of market share, TSMC has been leading this race

Main companies revenue (USD bn) and last 5y revenue CAGR (%)



Sources: Companies IR, Group analysis, Reuters

TSMC at a glance

TSMC was born as a pioneer at the Dedicated IC Foundry business model, maintaining its leadership and strong growth ever since

1. A history of protagonism and technological pioneering

TSMC history

1987

Founded by Morris Chang, with Phillips and Taiwan support. World's **first pure foundry**

'90s & '00s

Enabled fabless companies like Nvidia, Broadcom and Qualcomm. Fabs expanded

2010s

Central part of the **global supply chain** for products such as iPhones, data centers and AI chips.

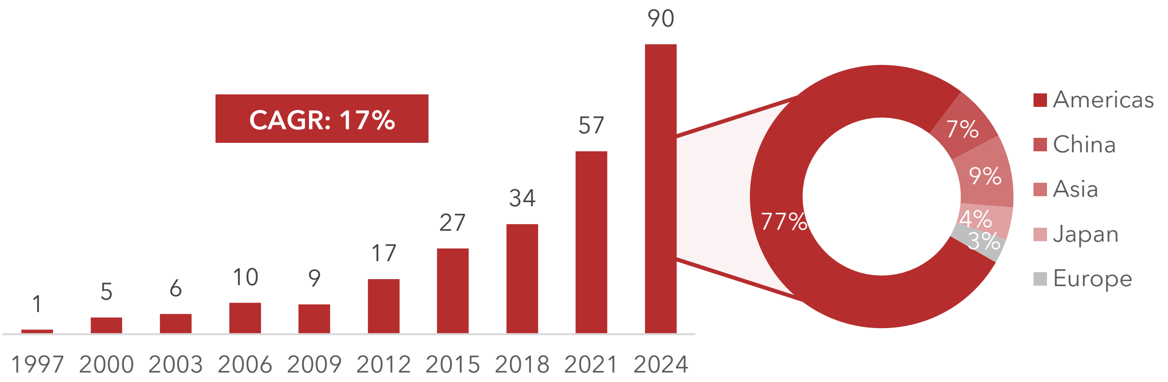
2020-25

Importance **amplified by COVID**. Investments in Japan and Arizona fabs

2. Strong historical growth, with revenue coming primarily **from the US**

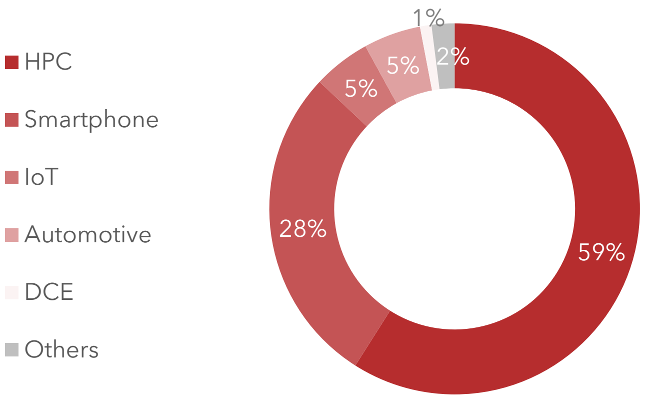
TSMC revenue growth (USD bn)

TSMC revenue per region (%)



3. The foundry "for everything and everyone". The **diversity of node sizes** produced by TSMC allows it to serve different end markets

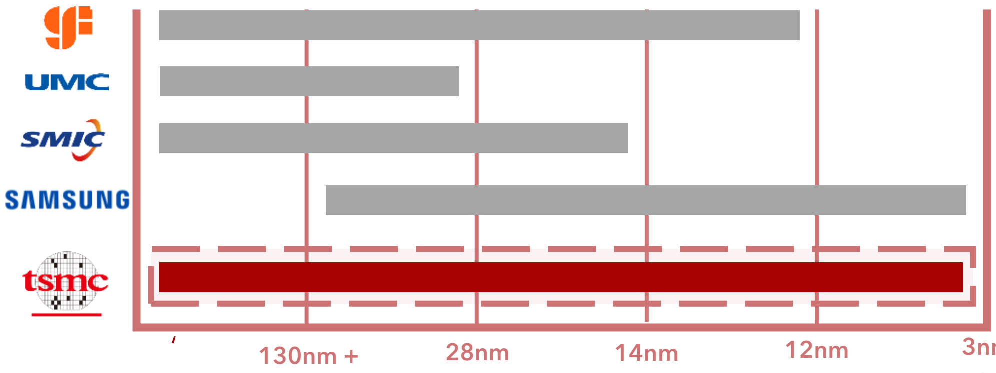
TSMC revenue by end market



"Being **everyone's foundry** is the core of TSMC's strategy. We are building an open platform that **welcomes all industry innovators**."

Morris Chang, TSMC Founder

Main foundries nodes sizes range



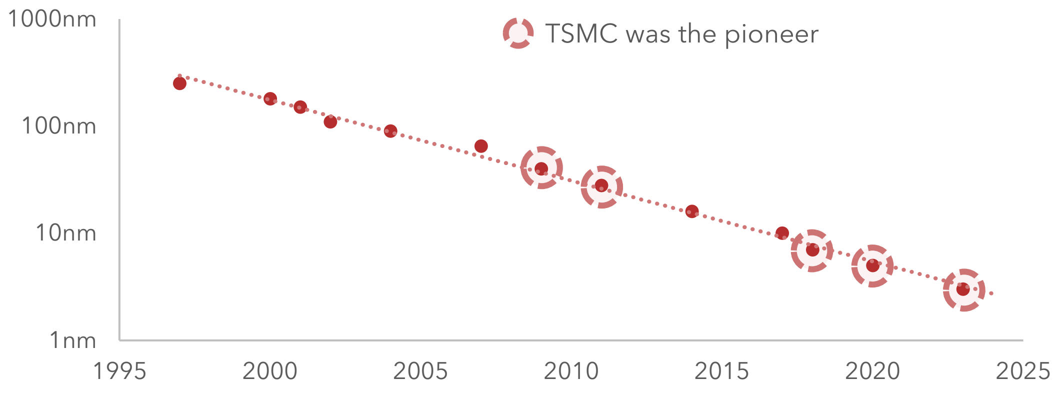
Sources: Companies IR

Leading the edge of nodes

TSMC achieves the perfect dance between precision and scale at higher nodes, and seems to be the only one

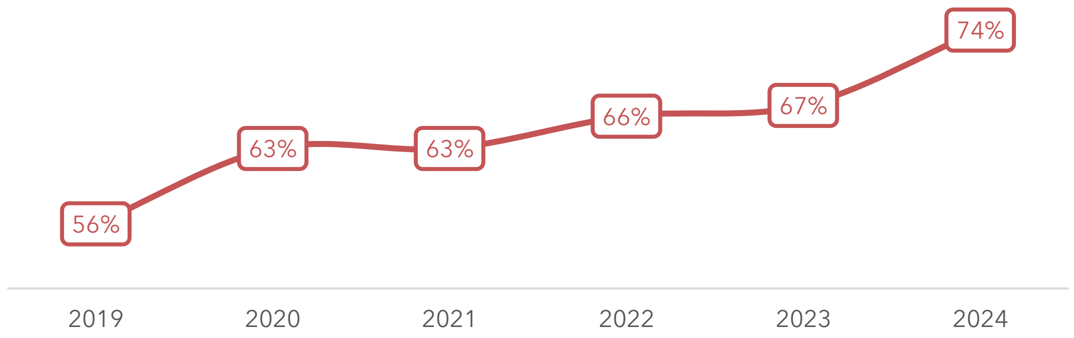
1. TSMC has proven itself to be a **pioneer** in several nodes over the years

TSMC nodes evolution



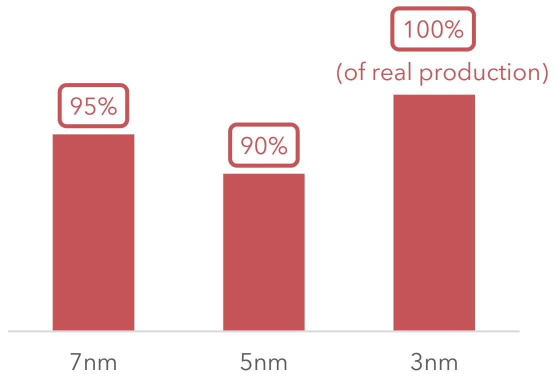
2. AI and HPC are increasing the need for more **advanced nodes**

TSMC top 3 smallest nodes revenue (%)



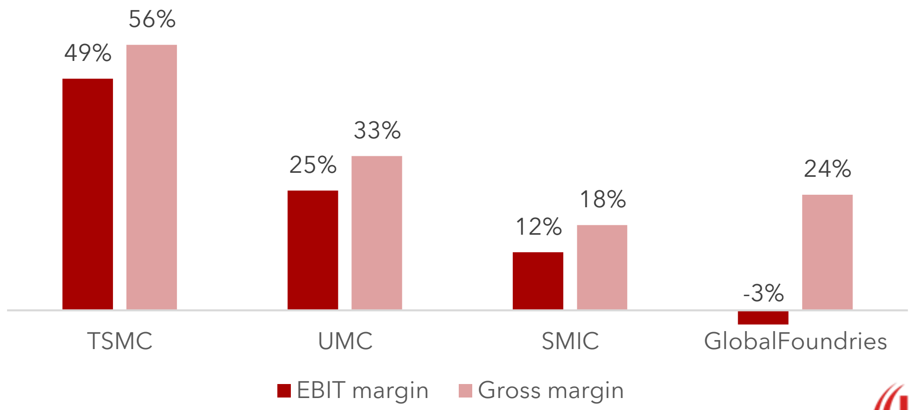
3. … And the Taiwanese company seems to be **absolute** in these nodes, which translates into **greater pricing power** and also the ability to obtain **better margins**

Advanced nodes market share (%)



	Average wafer price (USD)	Estimated gross margin
3nm	20,000	65 to 70%
5nm	15,000	60 to 65%
7nm	10,000	55 to 60%
28nm	2,000	40 to 45%

EBIT and gross margin comparison (%)



Sources: Companies IR, JP Morgan

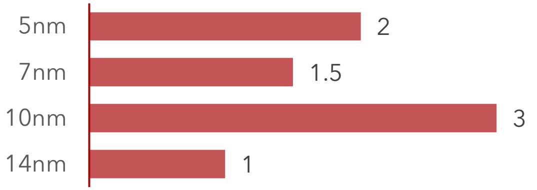
But is this protagonism sustainable?

TSMC has been taking strategic steps to reassert itself at the top. Its competitors seem increasingly distant

1. With tech advancement, leading edge nodes has never been more important. TSMC's competitors always hit some obstacle, pulling further and further away

Intel

Delay in node delivery (Years)



Intel shows difficulties in developing its technologies, losing market confidence

SMIC

Economic sanctions prevent SMIC from having EUV technology, which makes the production of smaller nodes unfeasible

SAMSUNG

3nm chip yield

It has problems in the production of its 3nm chips, with a yield of only 50%. This causes insecurity in external customers

tsmc

1. Accurate and scalable production
2. Technical and Operational Superiority
3. Customer trust

2. The new Foundry 2.0 concept brought by TSMC is further proof of its assertive effort, imposing yet another barrier against its competitors.

Foundry 1.0

1987 - 2024

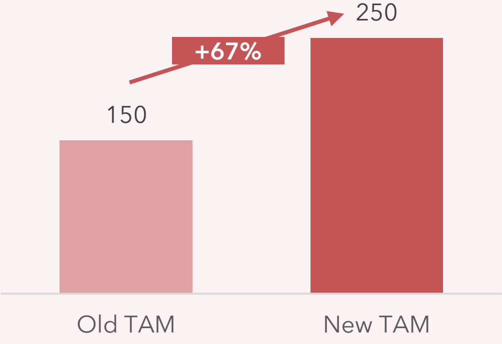
Manufacture third-party designed (fabless) chips efficiently, confidentially and with high quality

Foundry 2.0

2025 +

Foundry 2.0 cements TSMC as the backbone of global chip innovation, offering not only scale but also unmatched technological sophistication

Foundry 2.0 new TAM (USD bn)



1. Co-innovation with customers
2. Advanced Packing
3. Open Innovation Platform
4. Moderate verticalization

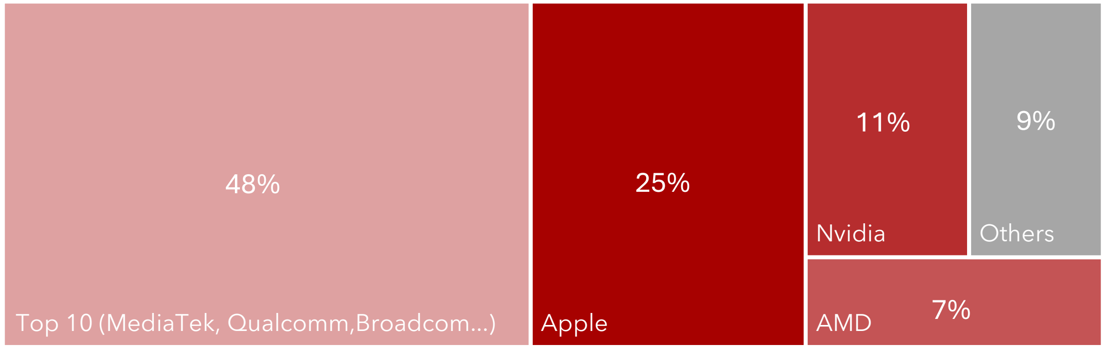
Sources: Companies IR, Group analysis

Mutually essential partnerships

TSMC and major technology companies have a mutual relationship that is essential for innovation and technology

1. Most of TSMC's revenue comes from a **few large companies**

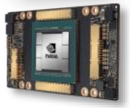
TSMC revenue per costumer (%)



2. Deep alliances secure **consistent demand** and represent a **strong moat**

Contract with Apple for supply of 3nm (iPhone 15/16) and future 2nm nodes

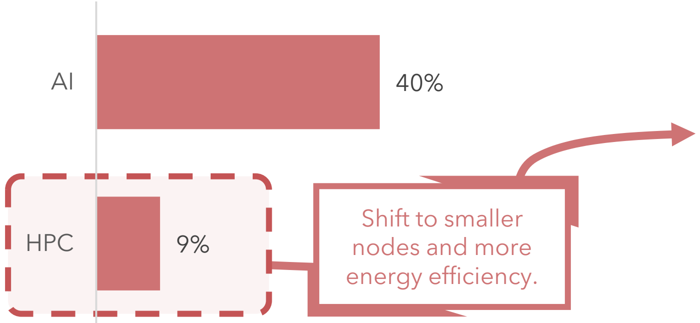
Contract with Qualcomm to manufacture advanced Snapdragon processors and other key components on 4nm/5nm nodes



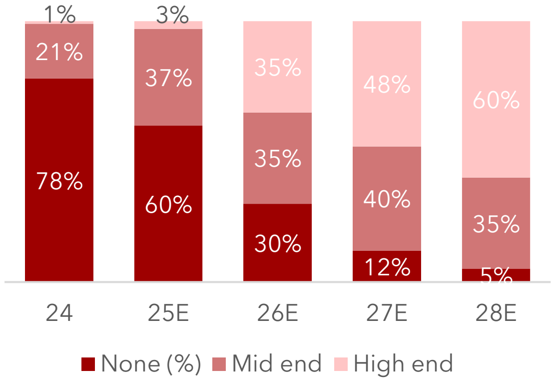
Contract with NVIDIA for production of Blackwell AI chips (B200, GB200) and H200 with TSMC's CoWoS

2. These strong alliances allow TSMC to ride the wave of growing technologies, especially AI and HPC, which are the most promising segments

Expected 2025-2029 AI & HPC CAGR



Expected sales of neuroprocessing PC's from all PC's worldwide



	Old technology	New technology	Note
Nvidia	Ampere (8nm Samsung)	**Blackwell B100/B200 (TSMC/3nm)**	TSMC is once again Nvidia's sole supplier for HPC/AI
AMD Instinct MI Series	MI200 (7nm TSMC)	**MI300X (5nm + 6nm TSMC with stacked chiplets)**	TSMC the only capable of manufacturing the MI300X with competitive yield and volume
Google TPU	TPU v3 (16nm, GlobalFoundries)	**TPU v4/v5 (7nm & 5nm TSMC)**	TSMC: Offers Custom Design with CoWoS + HBM, Which is Essential for AI
Cerebras, Tenstorren, Groq & SambaNova		**TSMC 7, 5 & 3nm**	Startups that, without TSMC, would not be able to compete in performance/watt with Nvidia or AMD.

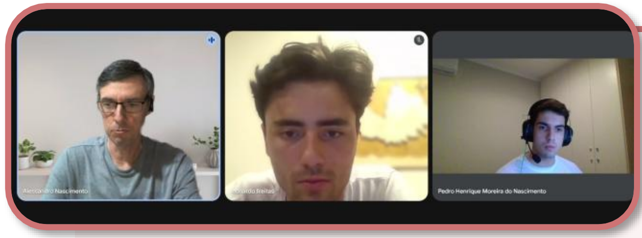
Sources: Companies IR, Group Analysis, Barclays, KPMG

On the front line of the revolution

TSMC's presence and importance in the HPC market promises to be the most significant avenue for growth

1. As HPC technologies evolve, companies increasingly demand smaller nodes – driving a larger share of TSMC's revenue from this segment.

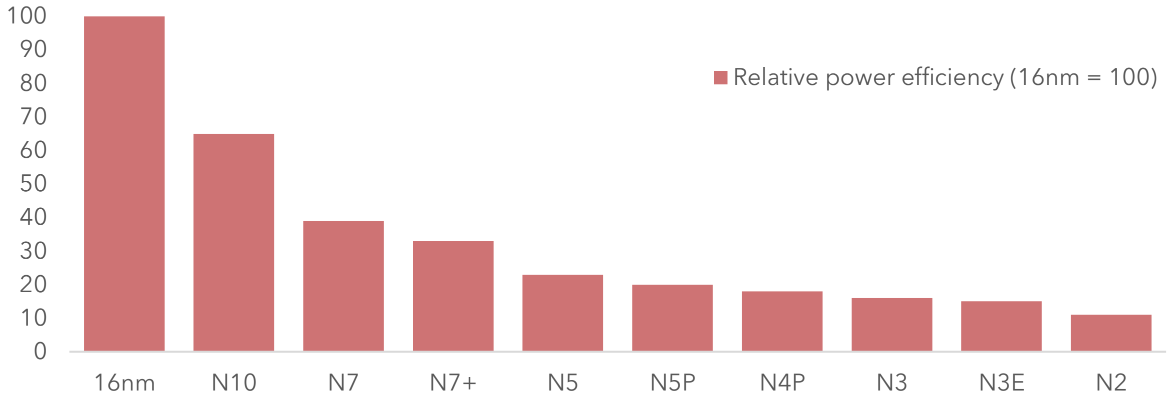
Tech companies movement for smaller nodes



Alessandro Nascimento - Nokia
Director of Digital Architecture and Operations (LATAM)

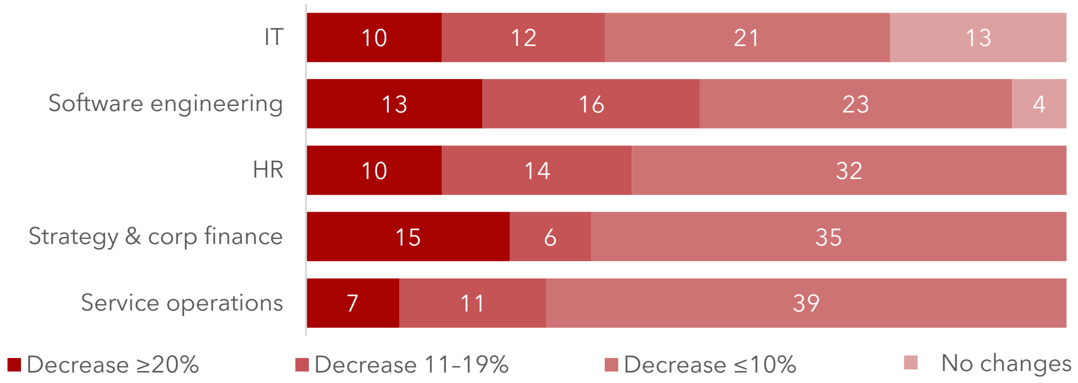
"Companies from all sectors are looking for **AI and HPC** solutions and are willing to pay a **high price** for them, since the autonomy brought by process automation makes up for the costs. Companies that do not seek these solutions will be left behind"

Relative power efficiency (%)



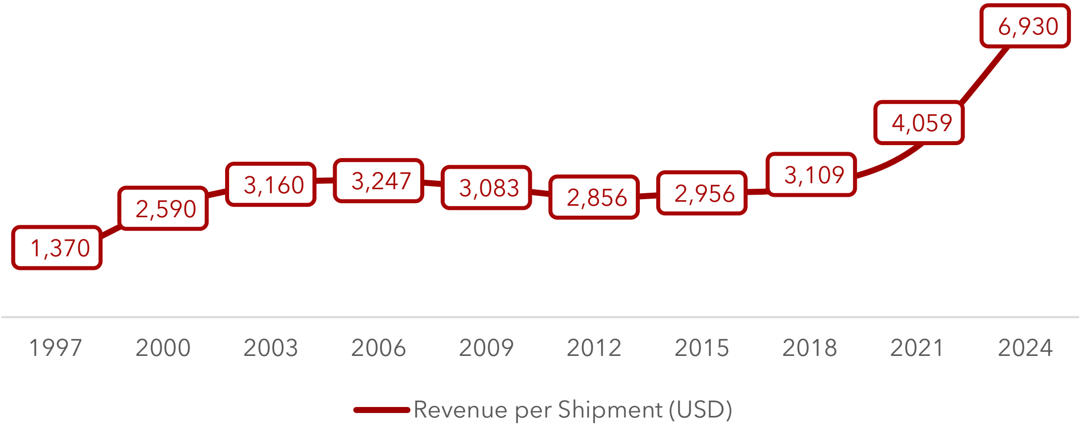
2. Generative AI Is Driving Noticeable **Cost Savings**

Cost decrease of business using gen AI, past 12 months Mckinsey Survey (# of companies)



3. The savings from automation make companies willing to **pay more**

TSMC revenue per wafer shipment (USD)



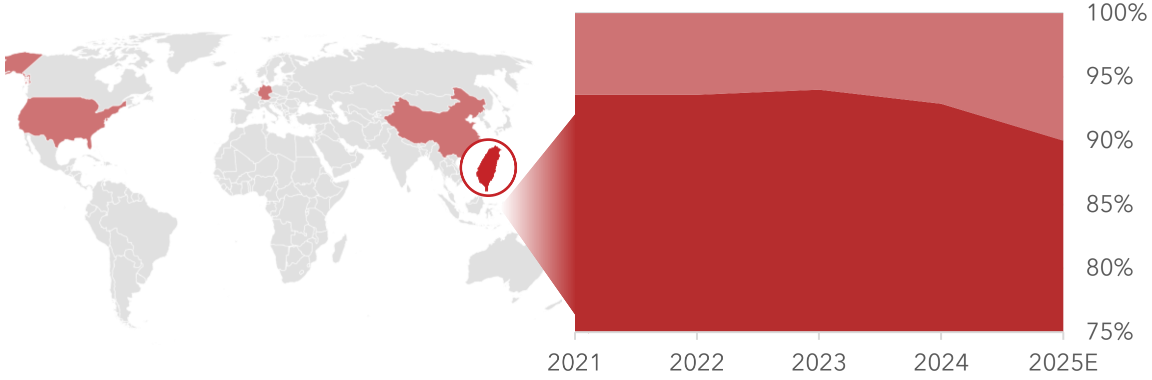
Sources: Companies IR, Group Analysis, New York Times, McKinsey

Geographic footprint

TSMC's Foundry Footprint: Turning Geography into a Competitive Weapon

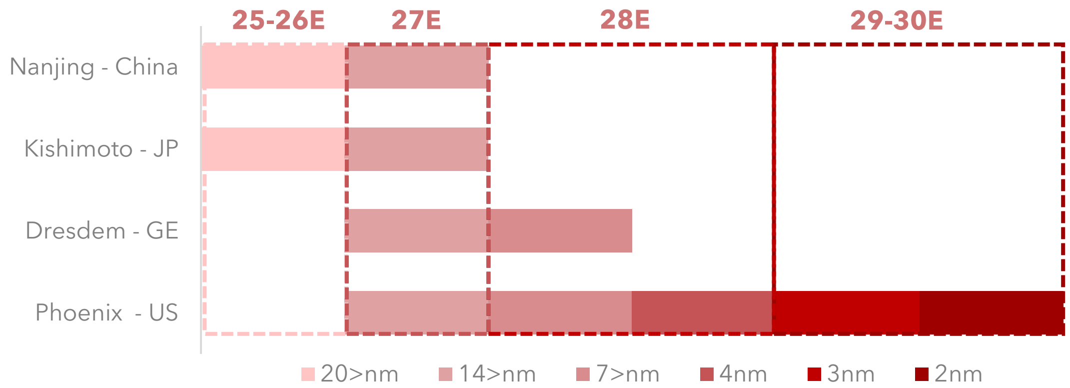
1. Ninety three percent of the wafers **ships from Taiwan**…

TSMC World Wafer production distribution (%)



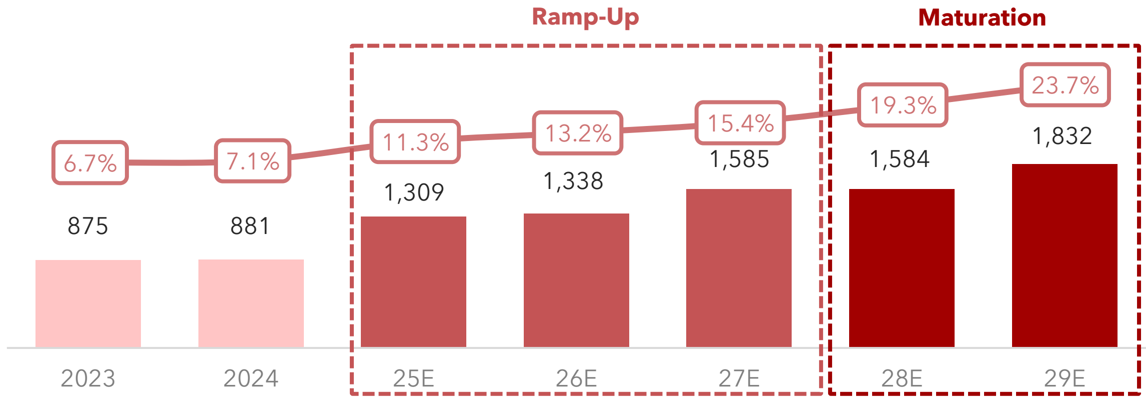
2. TSMC is changing with an **bold ramp-up** schedule of new fabs **outside Taiwan**

TSMC new Fabs schedule



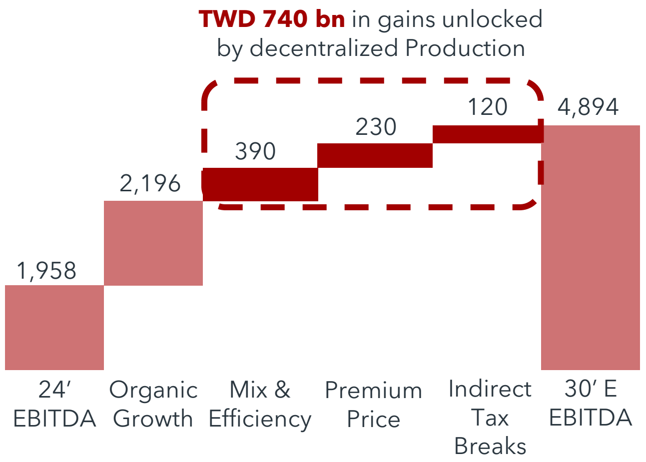
3. CAPEX, it's the fuel that moves the **production off the island …**

Capex Spend; Waffers Produced outside Taiwan (bn TWD, %)



4. Long term **gain** from **Decentralized Production**

EBITDA projection (TWD bn) .



- ✓ Decentralized risk Lower ERP
- ✓ Rapid Growth Due Tax Breaks & Mix
- ✓ Gain of EV

Safe & Productive company

Sources: Companies IR, Group analysis, Reuters, Bloomberg, Barclays

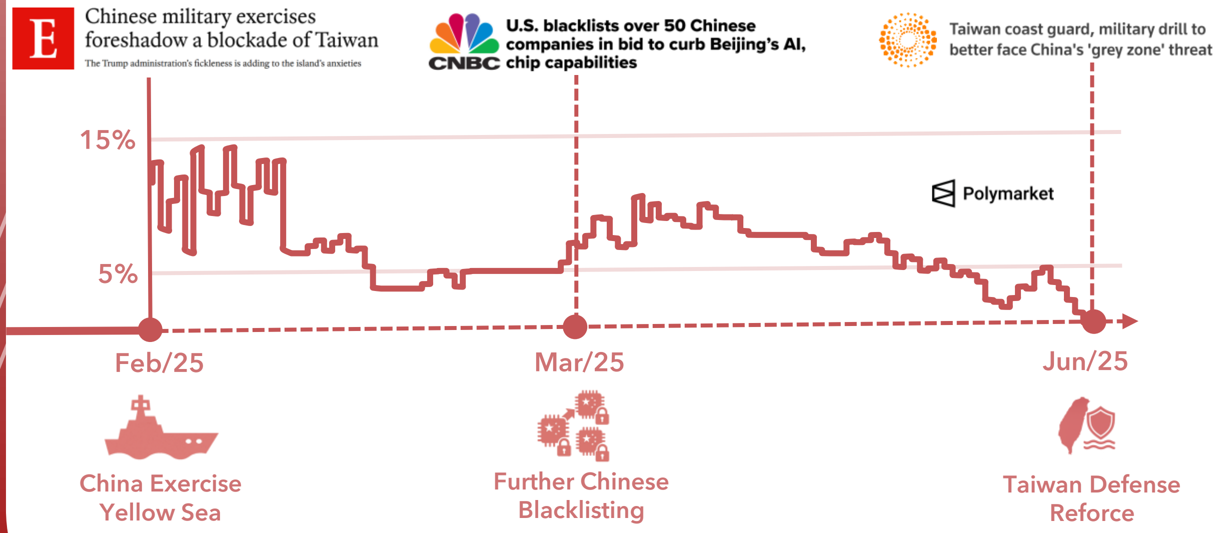
The geopolitical risk

Silicon at the Fault-Line: TSMC's Geopolitical Chessboard

1. An Island of Endless Conflict–Yet Indispensable to the Digital World

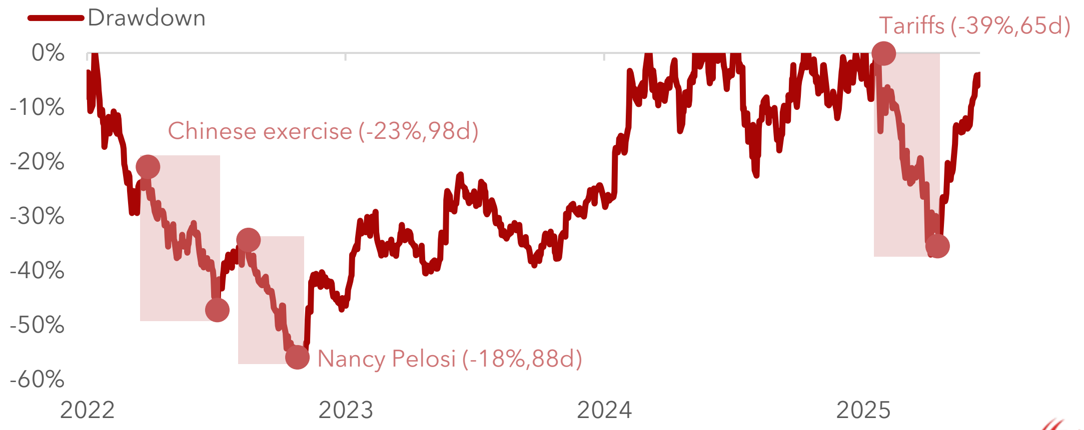
Taiwan Conflict Timeline & Implied Invasion/Blockade Odds (%, Polymarket)

- **1895 – Treaty of Shimonoseki**: Sets a legacy of disputed sovereignty, Beijing still cites today.
- **1945 – End WWII**: Restores Chinese control but leaves post-war power vacuum.
- **1987 – ROC "Great Retreat"**: Creates the "two-Chinas" standoff; PRC vows eventual unification.
- **1979 – U.S. Taiwan Relations Act**: Guarantees U.S. arms sales & de-facto security umbrella.
- **1987 – TSMC Foundation**
- **1995 – Third Taiwan Strait Crisis**: PLA missile tests & U.S. carrier transits show escalation potential
- **2022 – Blacklist US -> China**: Blocks China from acquiring EUV tools and advanced GPUs.



2. How Every Shock Moved the Stock…

Depth (%) and duration (days) of share-price declines after major geopolitical events

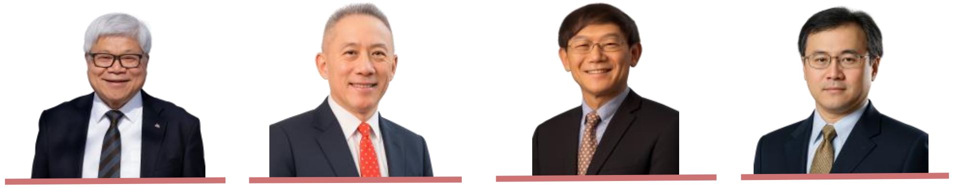


Sources: Companies IR, Group analysis, Reuters, CNBC, The Economist, Bloomberg

Elite management and superior performance

A board composed of industry veterans with elite academic backgrounds and hands-on tech expertise

1. A **world-class leadership team**, obsessed with technology & manufacturing



C.C Wei
CEO & Chairman
Since 2018
Yale
Chartered

Wendell H.
CFO & Spokesperson
Since 2019

Kevin Zhang
SVP, Business Dev
Since 1998
Duke University
intel

Y.J Mii
EVP, R&D Dev
Since 1994
UCLA

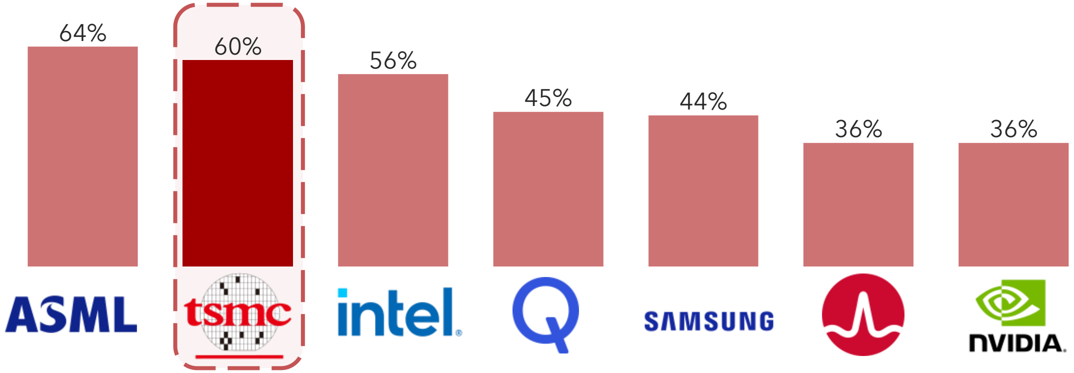
10 members of board

Highly tech executives

200 years expertise

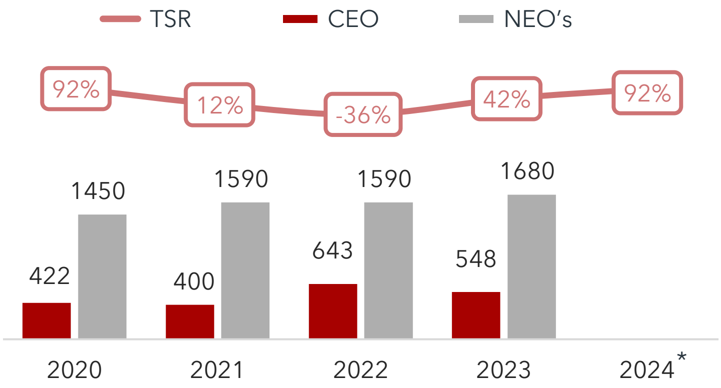
2. With a **Highly Technical Board** & Academic Pedigree

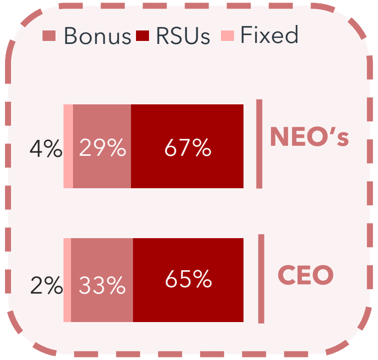
Percentage of board members with advanced technical or engineering degrees



3. Compensation is **aligned with revenue growth** – not with TSR.

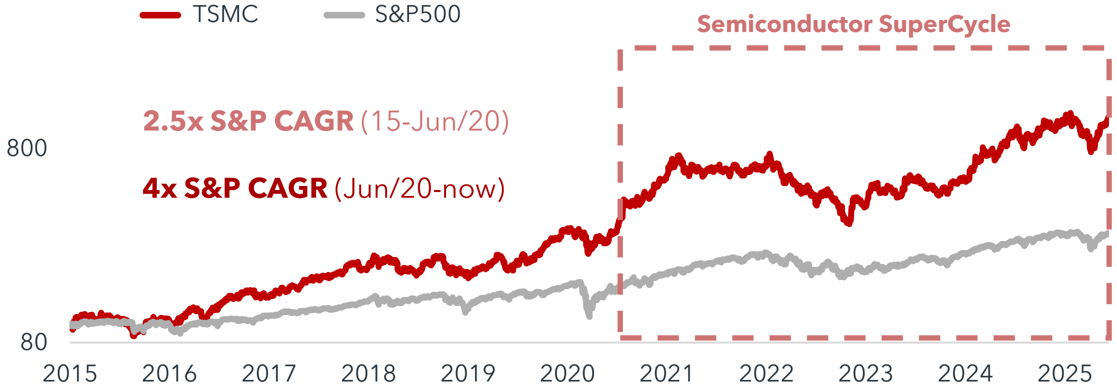
Total compensation vs. TSR; [TWD mn; TSR]





4. Market-beating & value creation

Evolution of the share price x SP500 Index; [USD Normalized]



Sources: Companies IR, Group analysis, Yahoo Finance

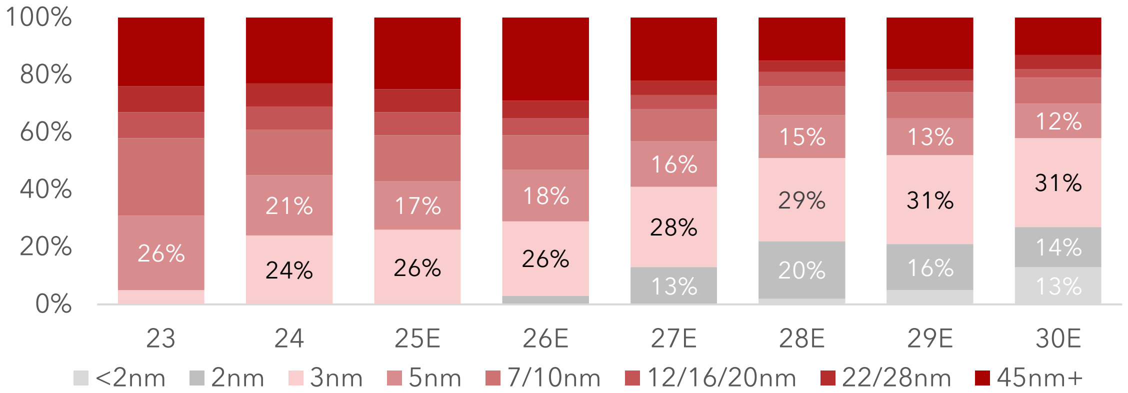
*will only be disclosed in 2025 Annual Report

Valuation

Technology leadership, disciplined cost mix, and outsized HPC growth underpin accelerating shareholder value.

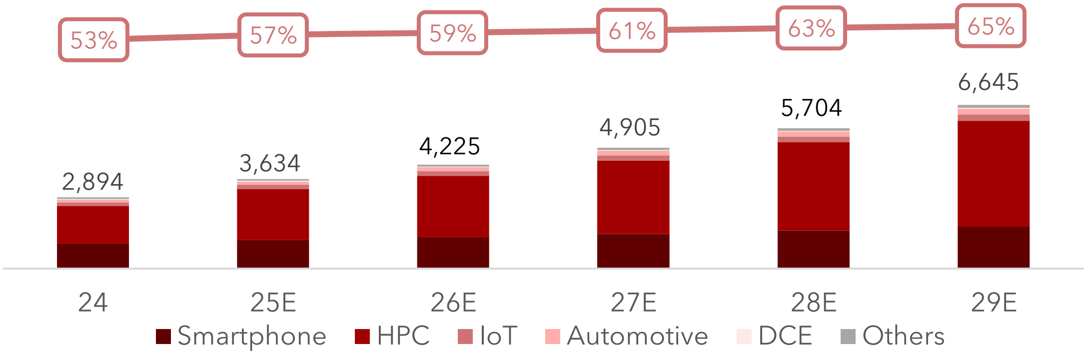
1. Node shrink is accelerating the mix-shift toward sub-3 nm technologies …

Revenue Breakdown per Node (%)



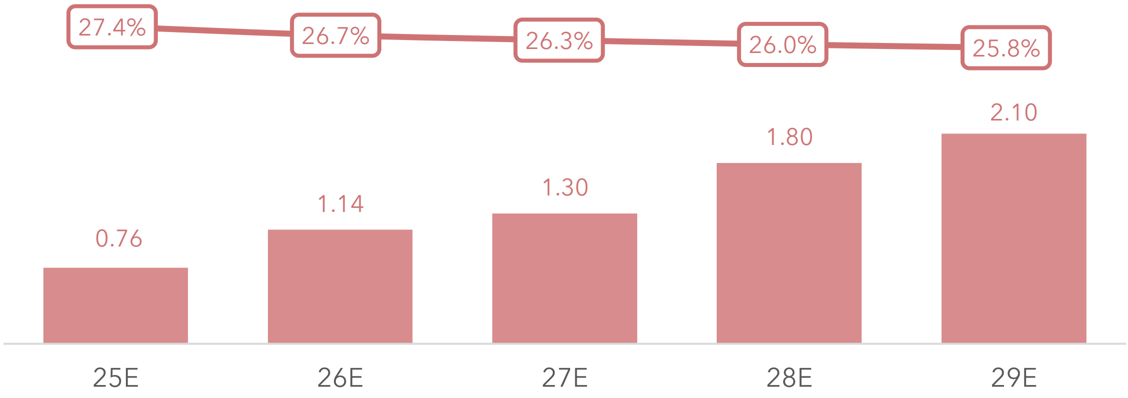
2. Unlocking a disproportionate share of future revenue growth in high-performance computing (HPC).

Revenue breakdown (TWD bn) & HPC Percentage of Total Revenue (%)



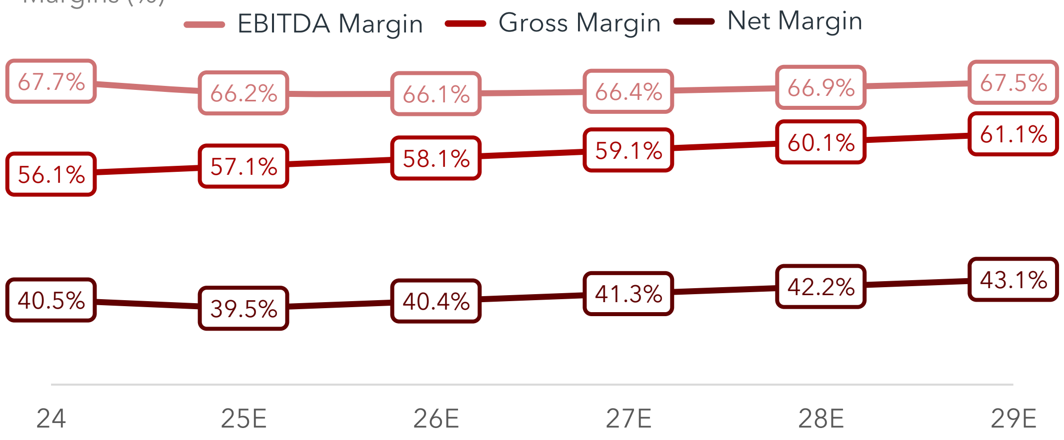
3. Robust FCFE sustains a **high ROE**…

FCFE (TWD trl) and ROE (%)



4. Profits Accelerate After a CAPEX Blip

Margins (%)



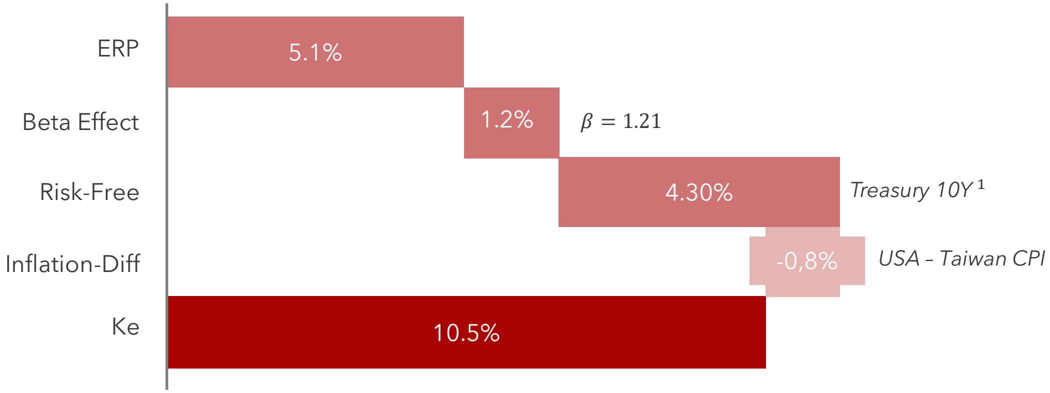
Sources: Group analysis

Zooming DCF – Breakdown

Justifying our upside

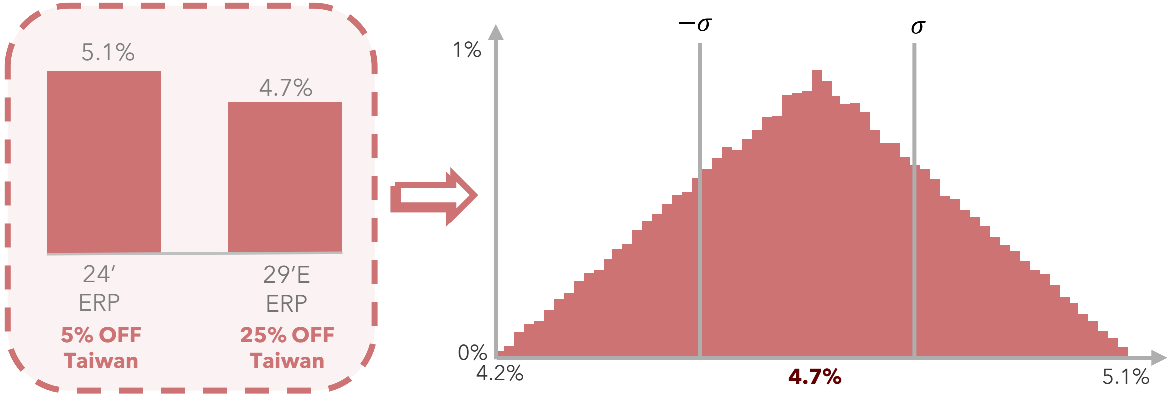
1. We estimated our Ke, resulting in a 10.5% cost of equity

Ke breakdown (%)



2. TSMC's global decentralization could decompress its cost of equity.

Monte Carlo analysis of how decentralizing operations outside taiwan Influences ERP



3. We also made a sensitivity analysis where we stressed Ke and P/E Multiple…

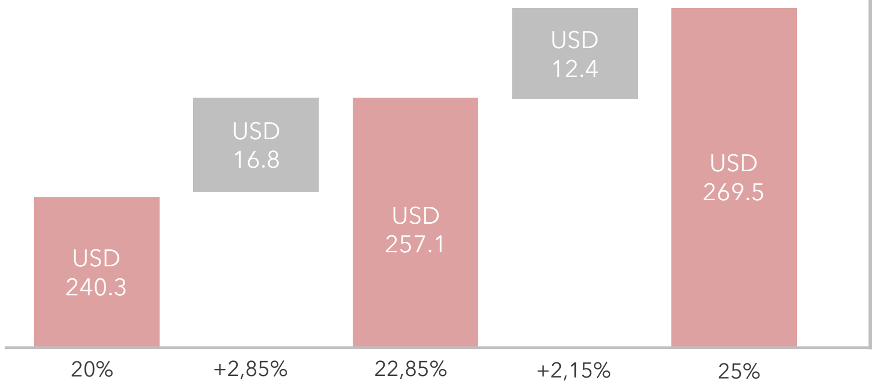
Ke vs Exit P/E fwd 1y multiple sensitivity analysis [downside/upside; %]

P/E Multiple \ Ke	9.0%	9.8%	10.5%	11.2%	12.0%
14.0x	6.9%	4.0%	1.5%	-0.9%	-3.6%
16.0x	19.5%	16.2%	13.4%	10.7%	7.7%
18.0x	32.1%	28.4%	**25.3%**	22.3%	19.0%
20.0x	44.7%	40.6%	37.2%	33.9%	30.2%
22.0x	57.3%	52.8%	49.1%	45.5%	41.5%

76 % of scenarios surpass the 10.5 % cost-of-equity hurdle !

4. … we also analyzed the variable with the highest impact in the target price

HPC CAGR analysis x Fair Price per Share [%;USD]



Surging HPC demand is the single biggest growth lever, forecast to contribute **roughly 65 %** of total revenue

Sources: Group analysis, Damodaran

Multiples and IRR analysis

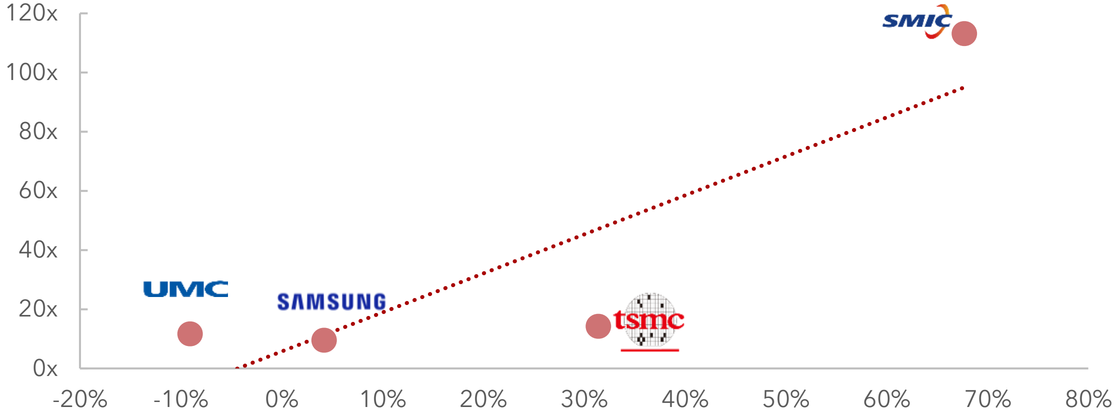
We calculated a 14.4% IRR, using an exit multiple above the average

1. TSMC has been trading at an average multiple of 19.3x

Historical TSMC P/E fwd 1y

2. And it is well positioned when we also analyze the EBIT CAGR

EV/EBIT vs EBIT CAGR fwd1y (x, %)



3. Considering dividends of 35%, we arrive at our IRR

IRR calculation

	2025E	2026E	2027E	2028E	2029E
Transaction	- 205.2	0	0	0	327.8
Dividends per share	3.3	3.6	4.6	5.4	6.4
Tax rate	21%	21%	21%	21%	21%
Cash flow	-202.6	2.8	3.6	4.2	332.8

14.4%
IRR (5Y)
IRR – Ke = 3.9%

18x
Exit P/E in 2029

4. We see good numbers for various CapEx numbers and exit multiples

Capex as a % of revenue vs Exit multiple sensitivity analysis (IRR %)

Forecasted CapEx as a % of revenue

P/E Multiple	17.5%	22.5%	27.5%	32.5%	37.5%
14.0x	8.0%	7.8%	7.7%	7.5%	7.3%
16.0x	11.5%	11.3%	11.2%	11.0%	10.8%
18.0x	14.7%	14.5%	**14.4%**	14.2%	14.0%
20.0x	17.7%	17.5%	17.3%	17.1%	16.9%
22.0x	20.4%	20.2%	20.1%	19.9%	19.7%

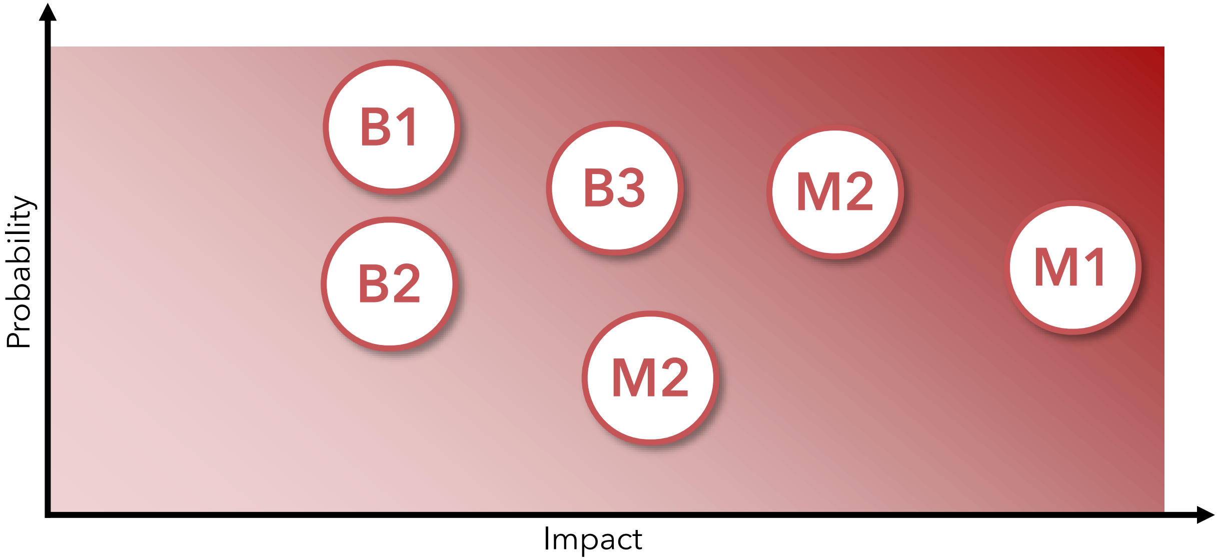
Sources: Group analysis

Scenarios and risks

We developed different scenarios and listed the risks for the company

1. We analyze the main risks related to the company and the sector

TSMC risk matrix



Macro and industry risks
B1- Geopolitical Tensions (China–Taiwan–USA)
B2- Semiconductor cycles
B3- Global inflation and interest rates

Business and operational risks
B1- Execution failures in advanced nodes
B2- Customers dependence
B3- Labor shortage outside Taiwan

Sources: Group analysis

2. We also evaluated a Bull and bear scenarios, varying the main assumptions

Fair value: USD 309.7
Upside: 50.9%
IRR: 20.5%

Revenue CAGR: **21.1%**
Gross margin 2025E: **57.6%**
Step: **1.5%**
SG&A as % of rev. 2025E: **-9.9%**
Step: **0.5%**

Fair value: USD 257.1
Upside: 25.3%
IRR: 14.4%

Revenue CAGR: **18.1%**
Gross margin 2025E: **57.1%**
Step: **1.0%**
SG&A as % of rev. 2025E: **-10.4%**
Step: **0.0%**

Fair value: USD 161.5
Upside: -21.3%
IRR: -0.6%

Revenue CAGR: **13.1%**
Gross margin 2025E: **55.1%**
Step: **-1.0%**
SG&A as % of rev. 2025E: **-10.9%**
Step: **-0.5%**

TSMC – selling shovels in a gold rush

Summarizing our BUY recommendation

Current Price

USD 205.18

BUY

25.3% upside
14.4% IRR

Target Price

USD 257.11

Sustainable and irrefutable protagonism

Creator of the Dedicated IC Foundry business model, TSMC has proven to be a pioneer in several nodes throughout its history. Through its superior investments in CapEx and R&D, the Taiwanese giant has increasingly maintained its dominance in smaller nodes and, without its competitors being able to keep up, has been able to add more value to wafers and achieve better margins.

Strategic partnerships

With over 90% of its revenue coming from 10 technology giants, strategic partnerships are a strong competitive advantage for TSMC. Through billion-dollar contracts, TSMC is able to ride and grow along with the HPC and AI wave. As a result, we see HPC becoming increasingly relevant to the company's revenue, which has also been working not only to bring smaller nodes, but also advanced packing technologies.

Excellent management at a key moment

TSMC composed of deeply technical leaders with decades of experience has shown rare strategic clarity at a defining moment. By approving bold geographic diversification, shifting one-third of production off Taiwan by 2027, the board addressed geopolitical risks while securing client proximity and unlocking global incentives. Far from reactive, the expansion reflects disciplined governance, value alignment, and a long-term vision to reinforce global leadership.

Thank you!

Q&A

Investment theses summary

1. Sustainable and irrefutable protagonism

Pioneering scale and superior margins, TSMC's **+90% market share in advanced nodes** ensures its long-term dominance

2. Strategic partnerships

TSMC's unique positioning attracts key AI and HPC partners, **boosting in 128% its wafers prices since 2018**

3. Excellent management at a key moment

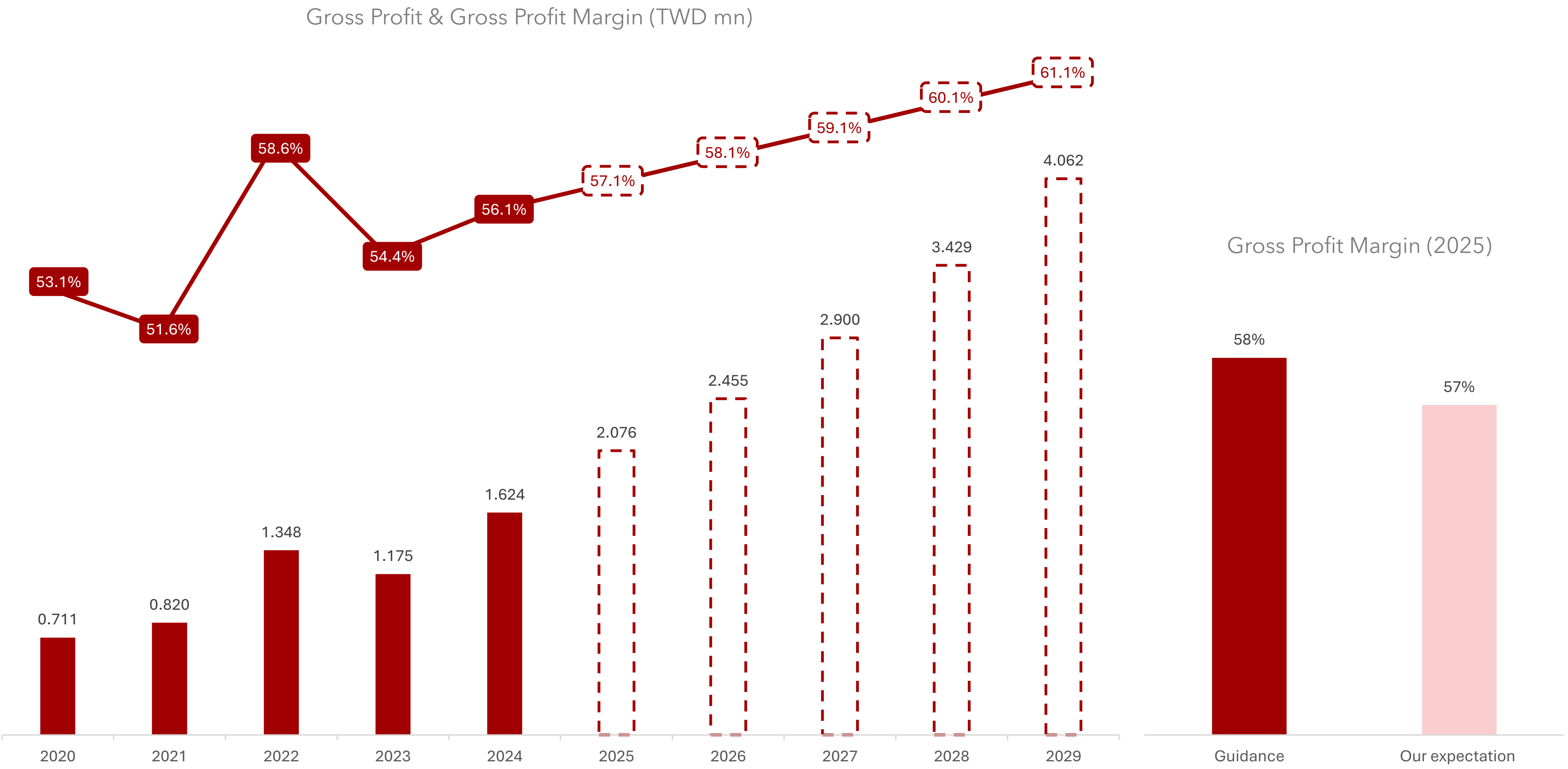
Skilled talent plays a key role in TSMC's success, driving its **USD 73 bn global expansion** while helping mitigate geopolitical risks

Presentation index

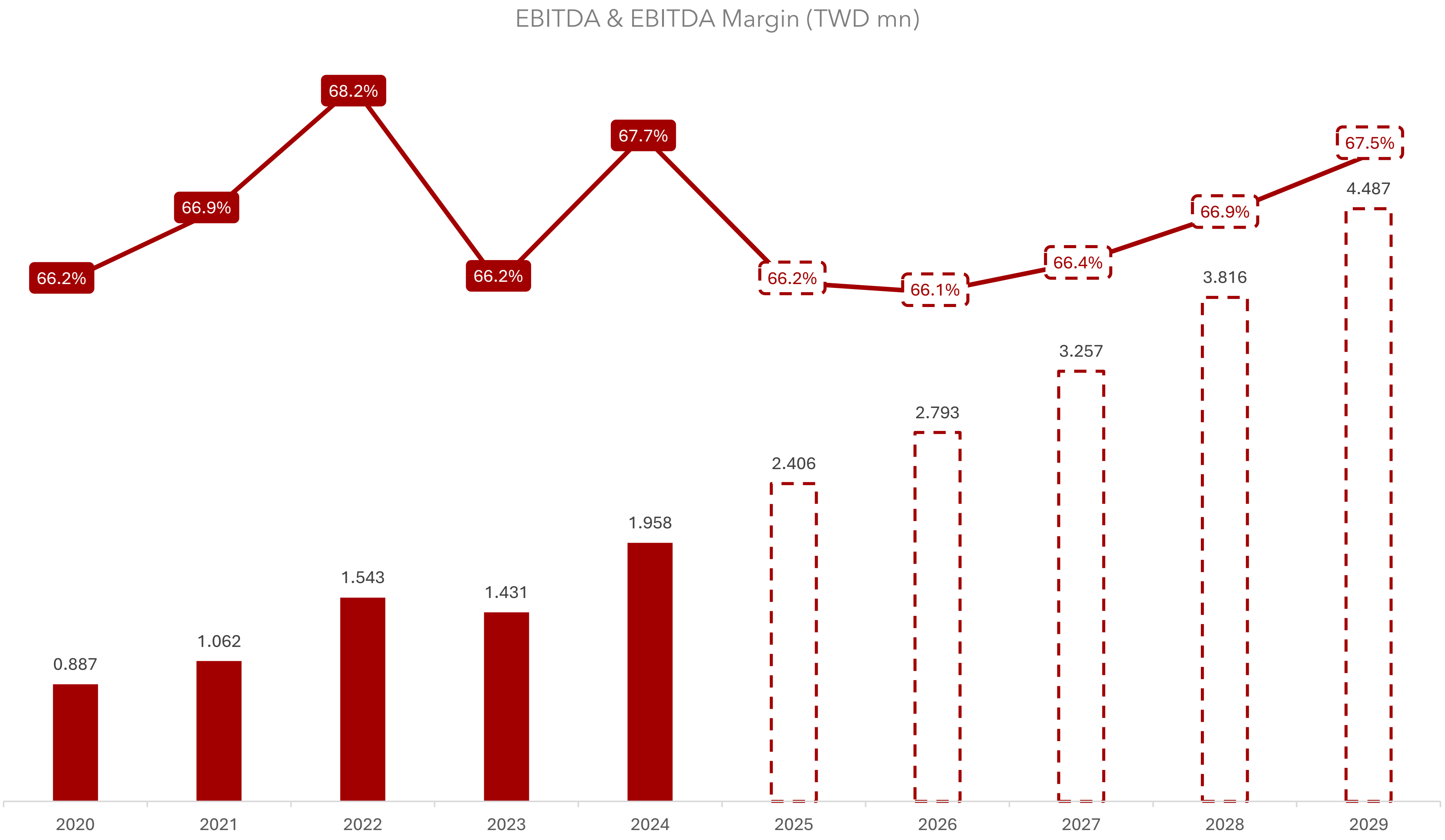
Appendix

Appendix index

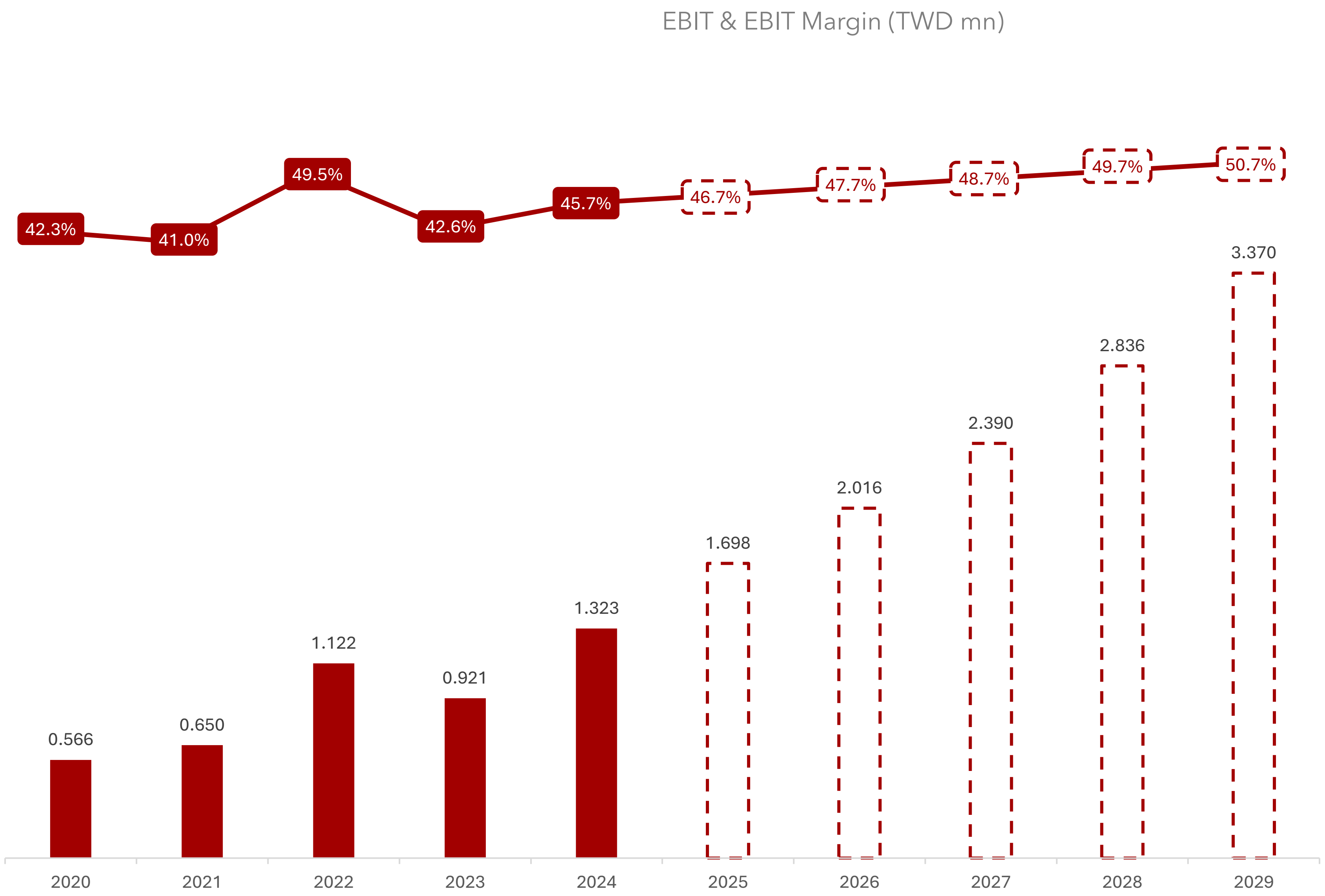
Gross Profit & Gross profit Margin

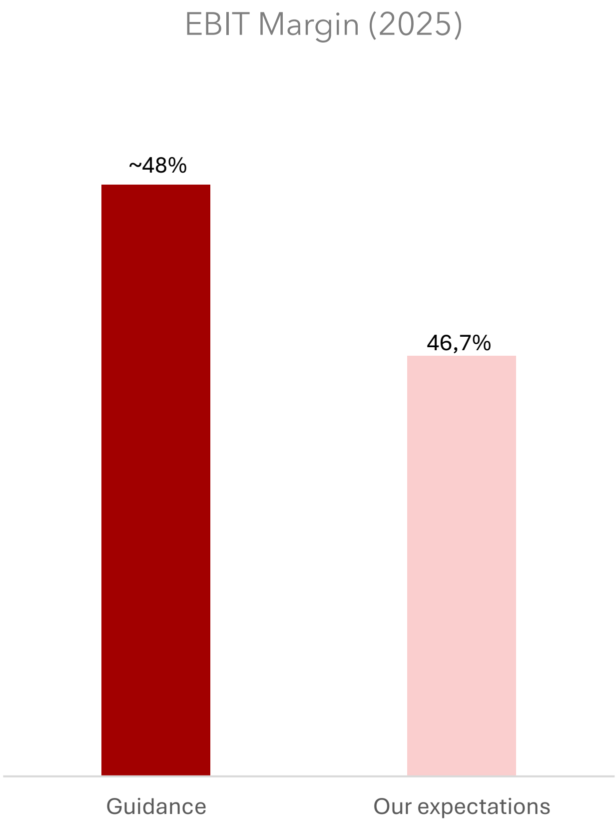


EBITDA & EBITDA Margin

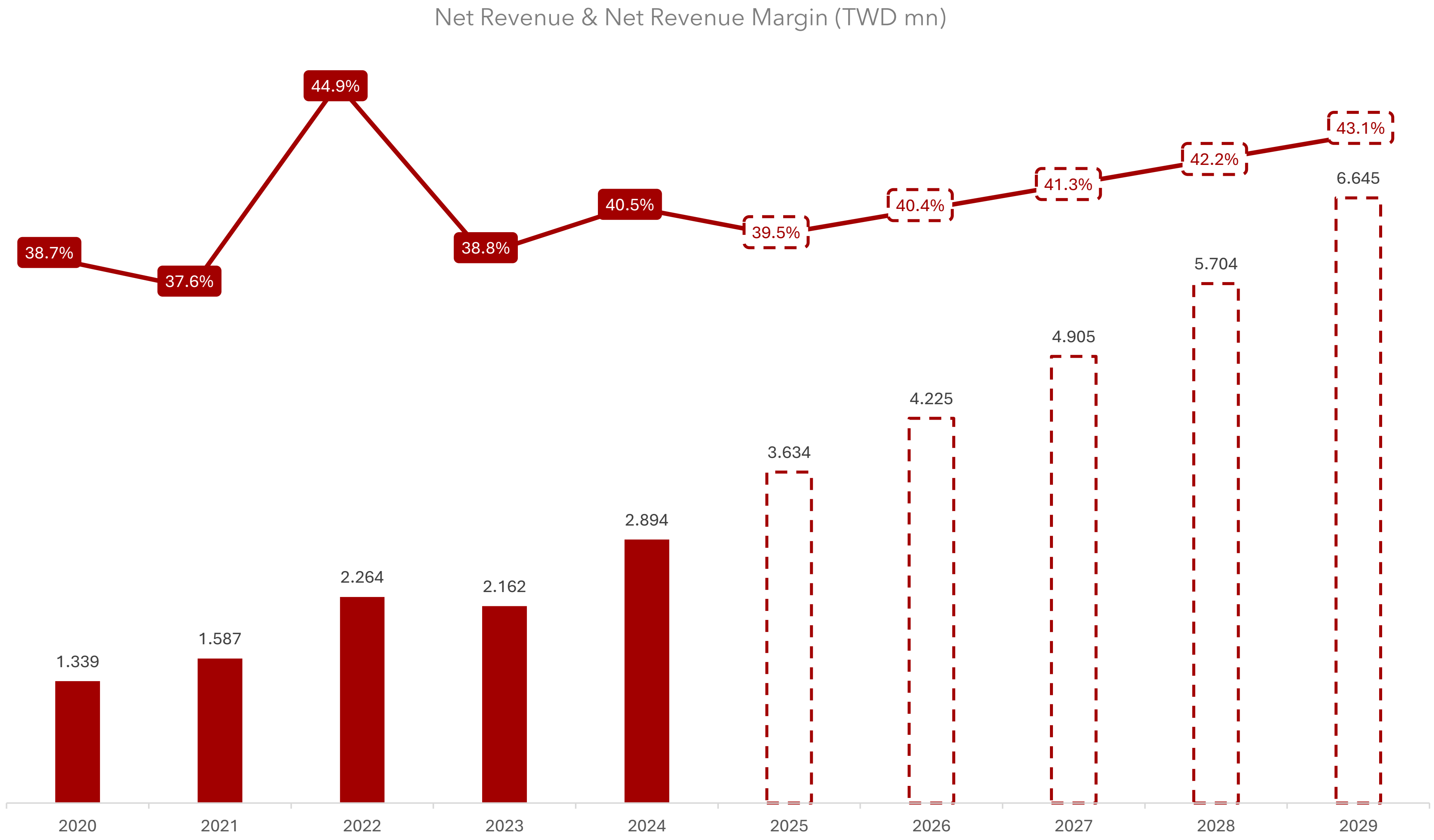


EBIT & EBIT Margin

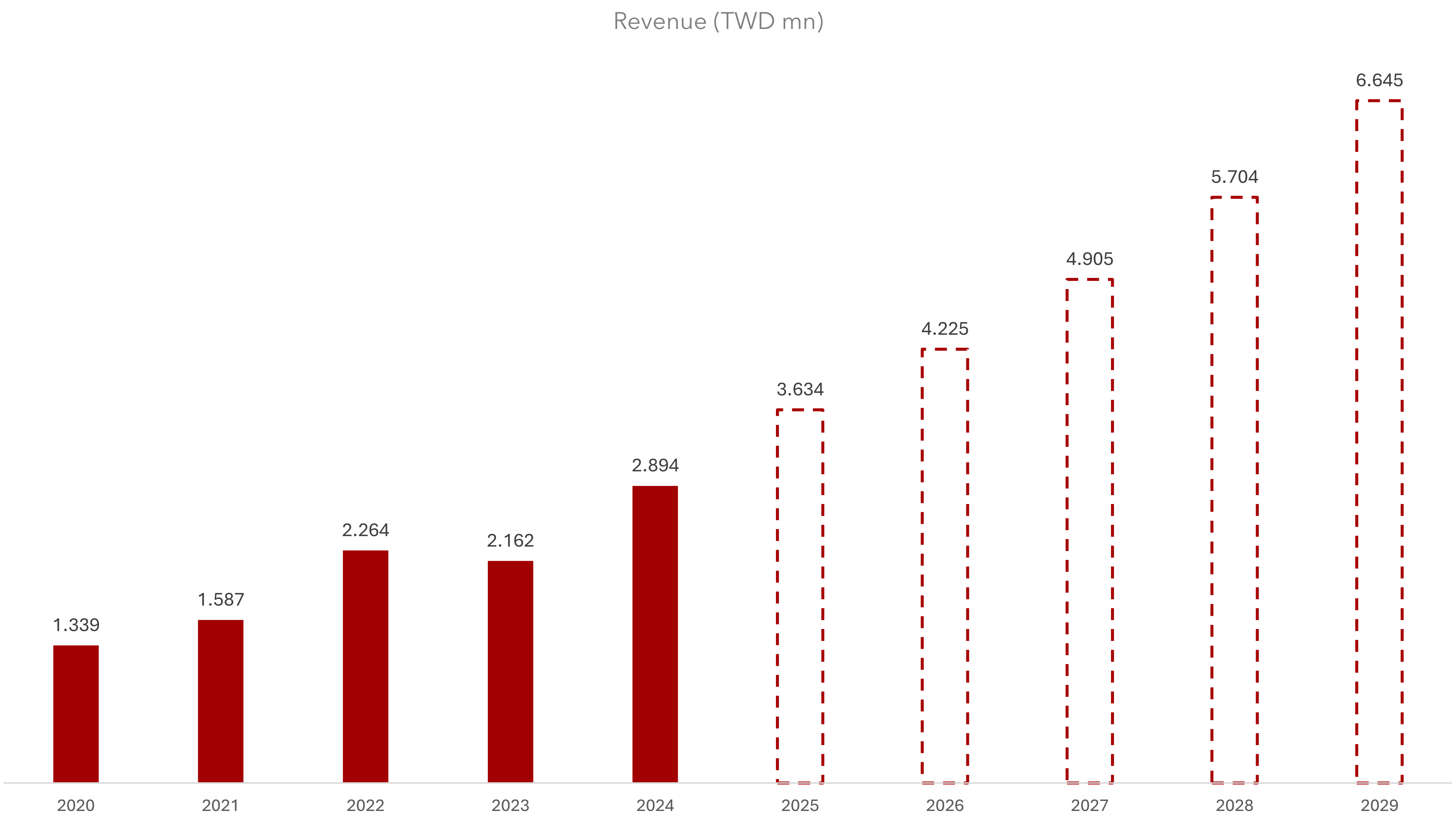




Net Revenue & Net Revenue Margin

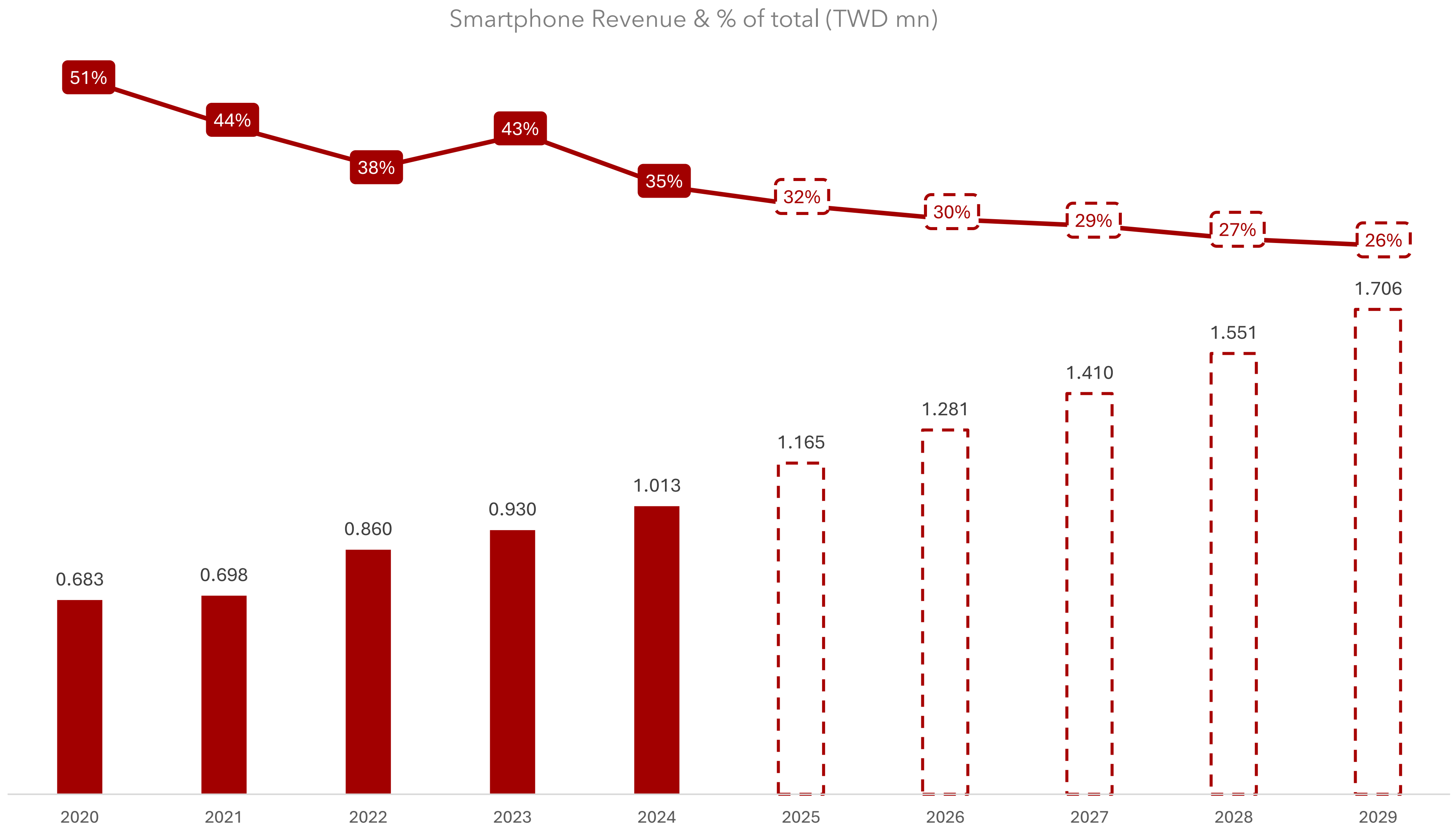


Revenue

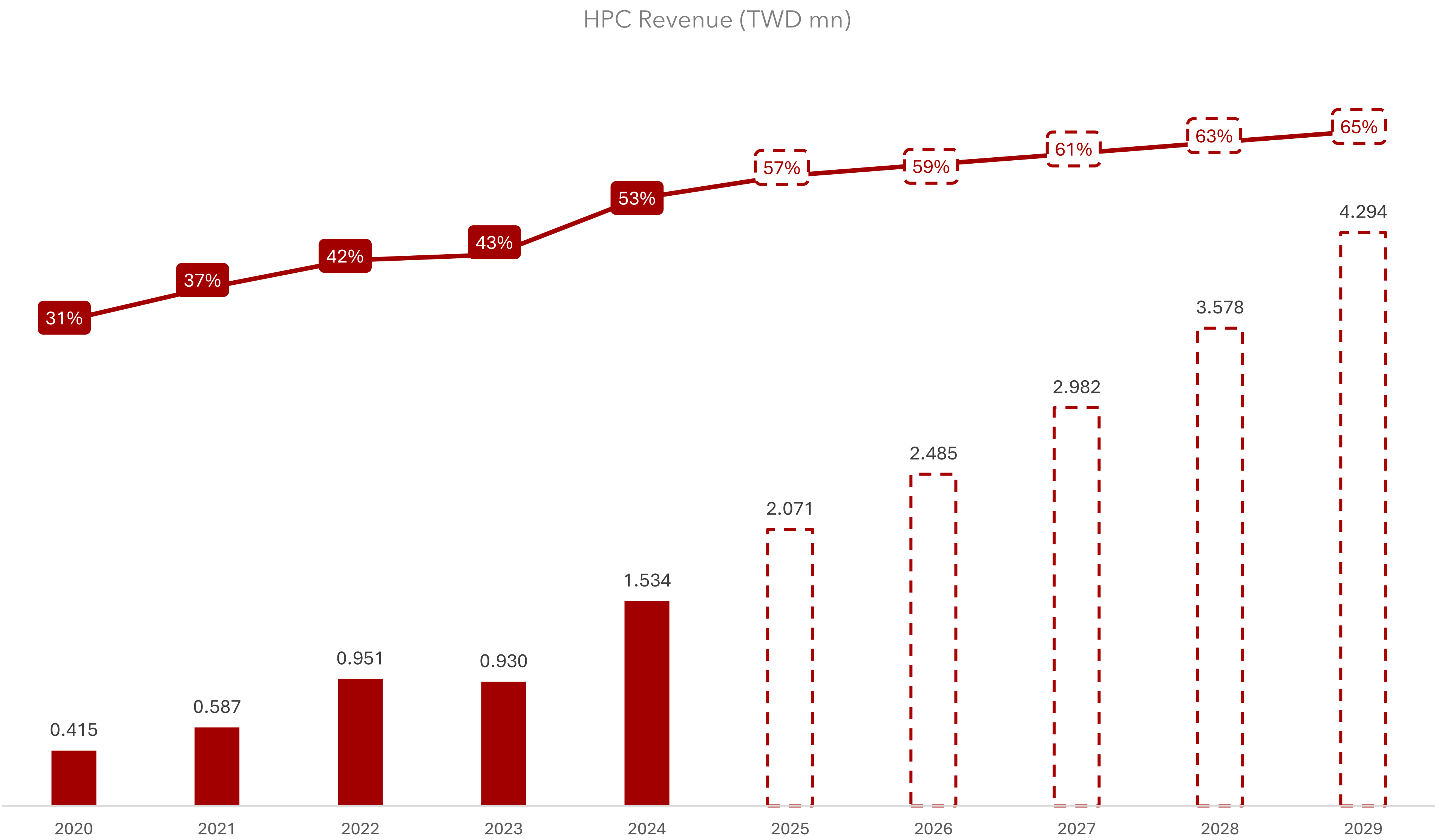


Revenue (TWD mn)
1.339
1.587
2.264
2.162
2.894
3.634
4.225
4.905
5.704
6.645
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029

Smartphone Revenue

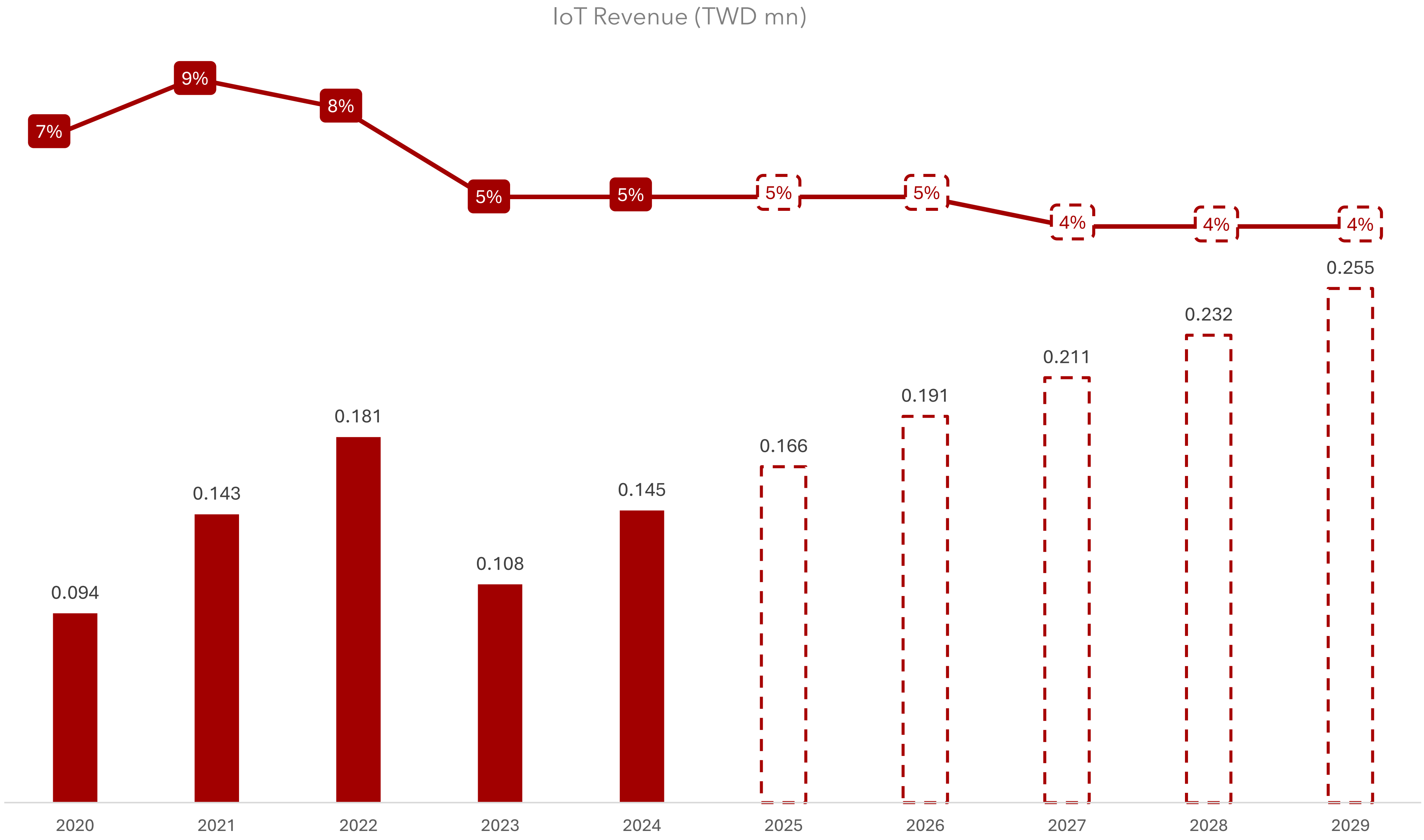


HPC Revenue

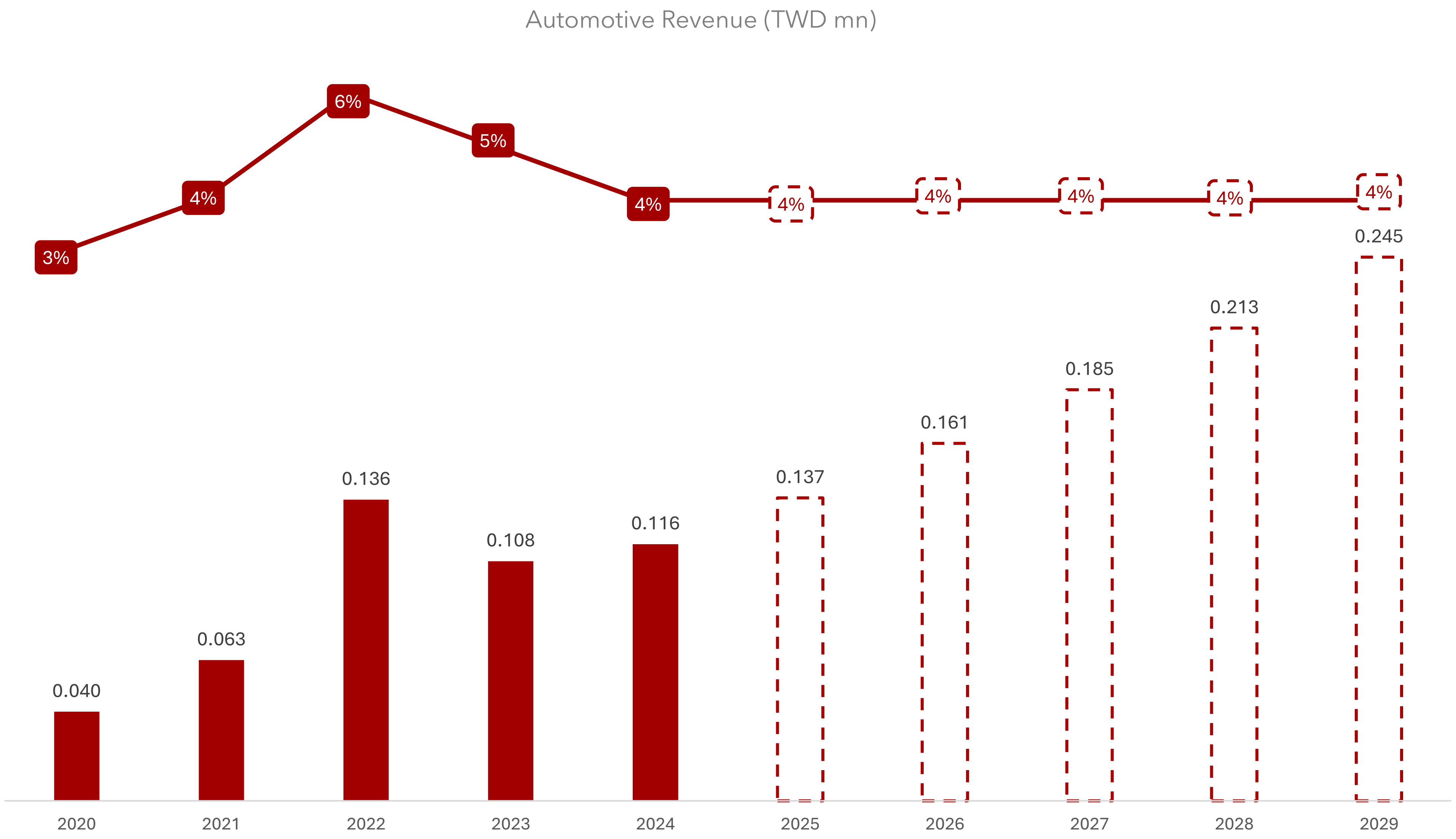


HPC Revenue (TWD mn)
31%
37%
42%
43%
53%
57%
59%
61%
63%
65%
0.415
0.587
0.951
0.930
1.534
2.071
2.485
2.982
3.578
4.294
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029

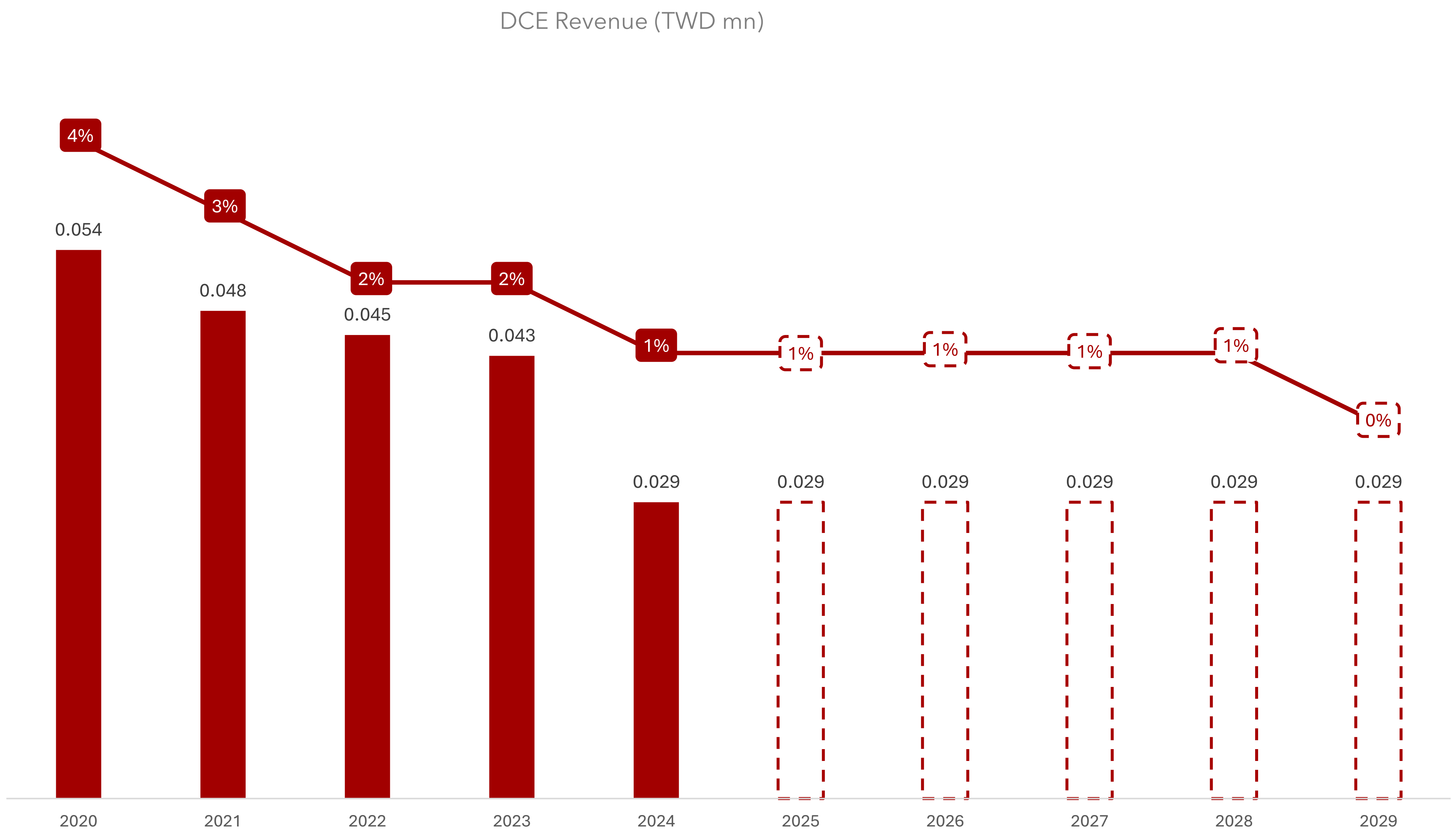
IoT Revenue


IoT Revenue (TWD mn)
7%
9%
8%
5%
5%
5%
5%
4%
4%
4%
0.094
0.143
0.181
0.108
0.145
0.166
0.191
0.211
0.232
0.255
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029

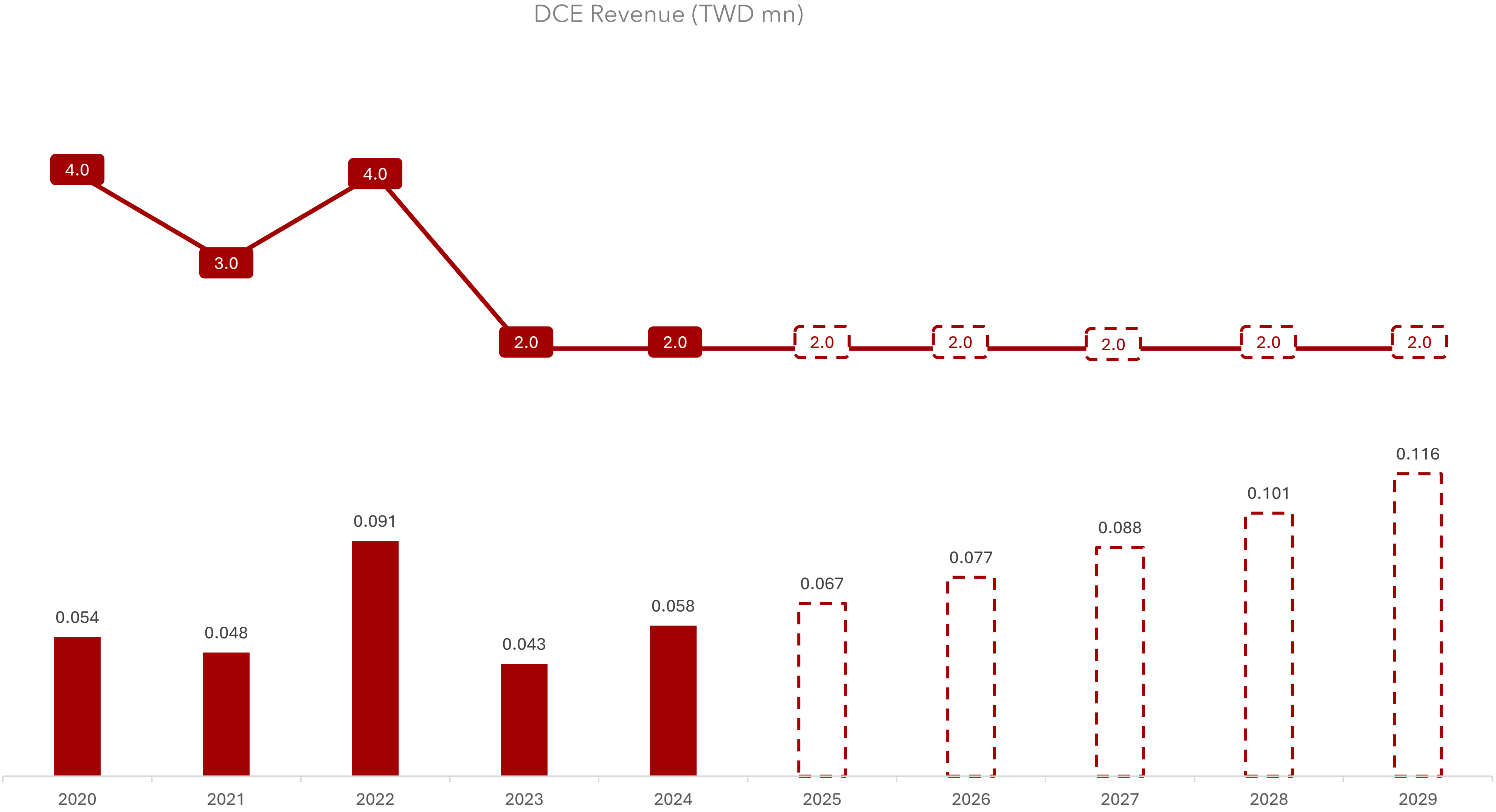
Automotive Revenue



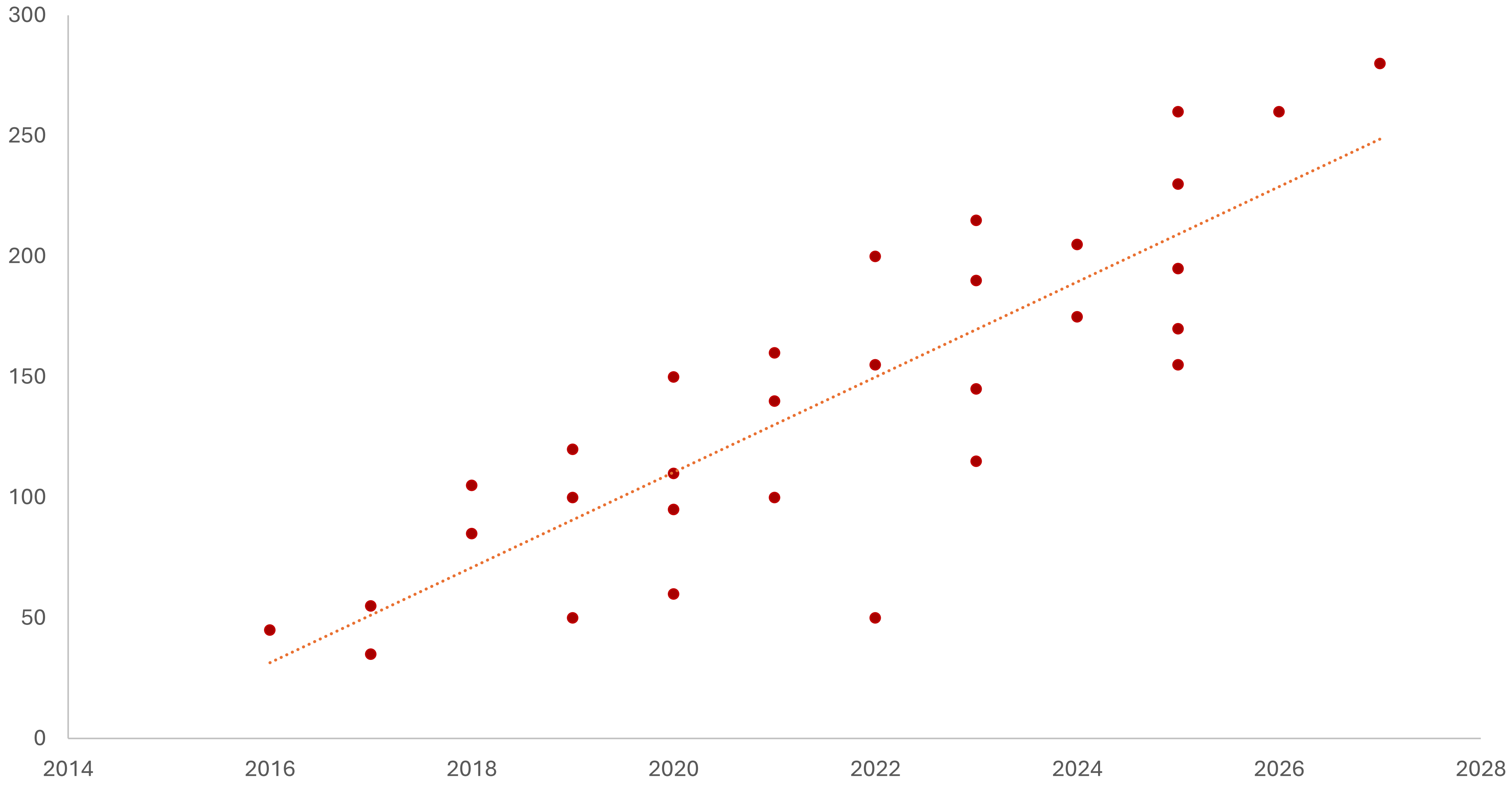
DCE Revenue


DCE Revenue (TWD mn)
4%
3%
2%
2%
1%
1%
1%
1%
1%
0%
0.054
0.048
0.045
0.043
0.029
0.029
0.029
0.029
0.029
0.029
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029

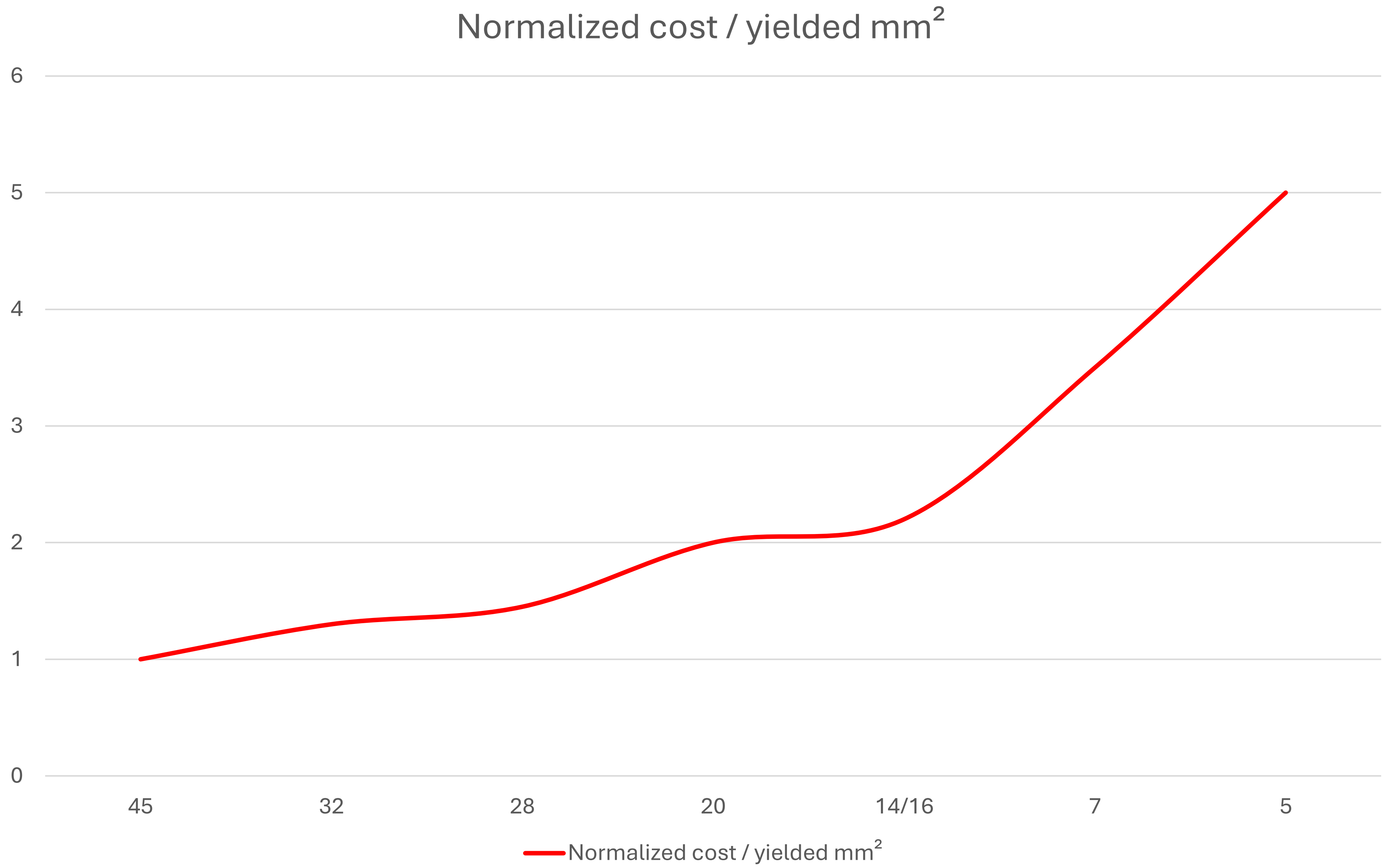
Others Revenue



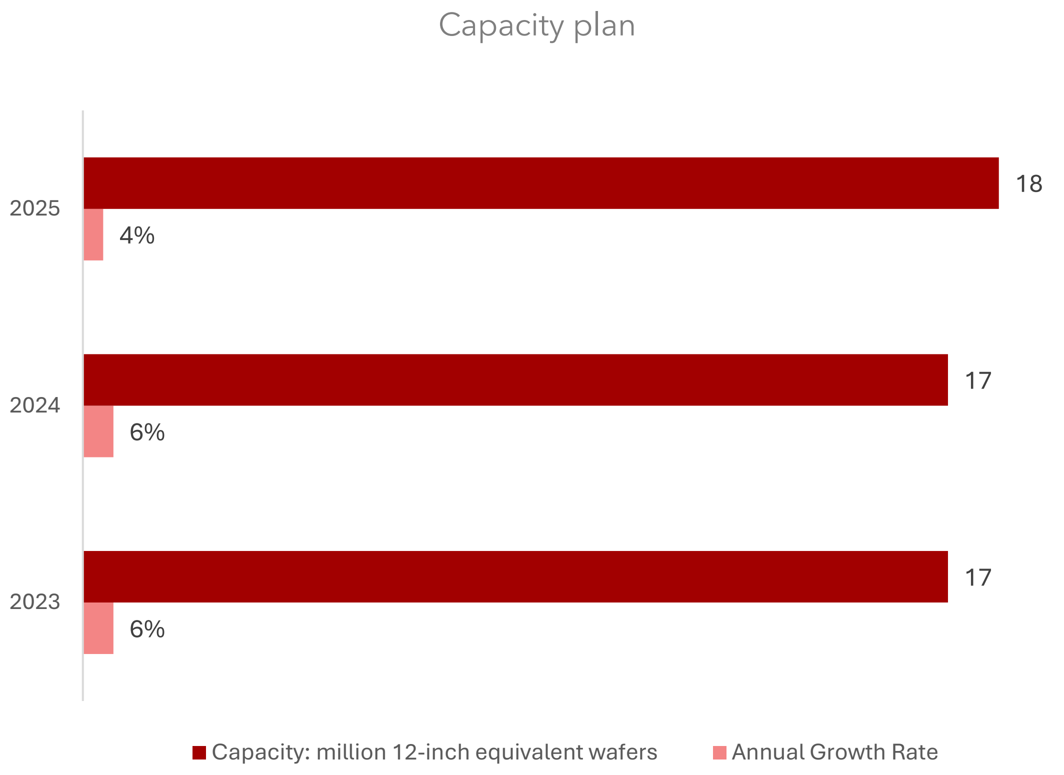
Transistor Density MTr x mm2

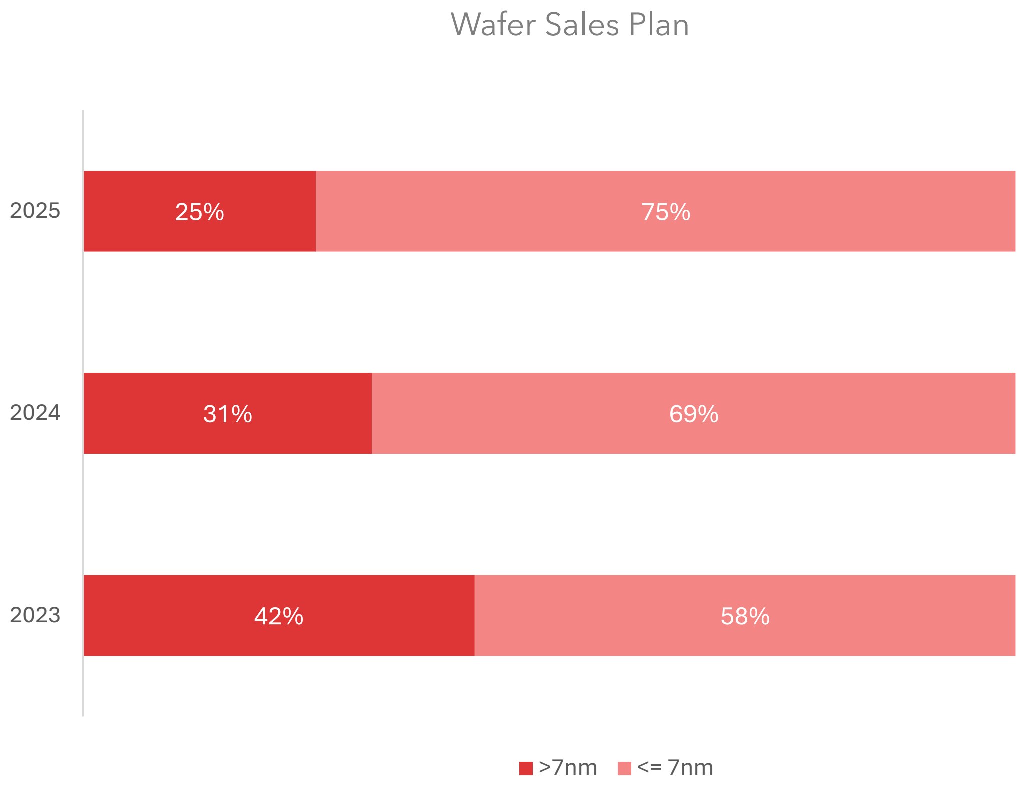


Normalized cost / yielded mm²



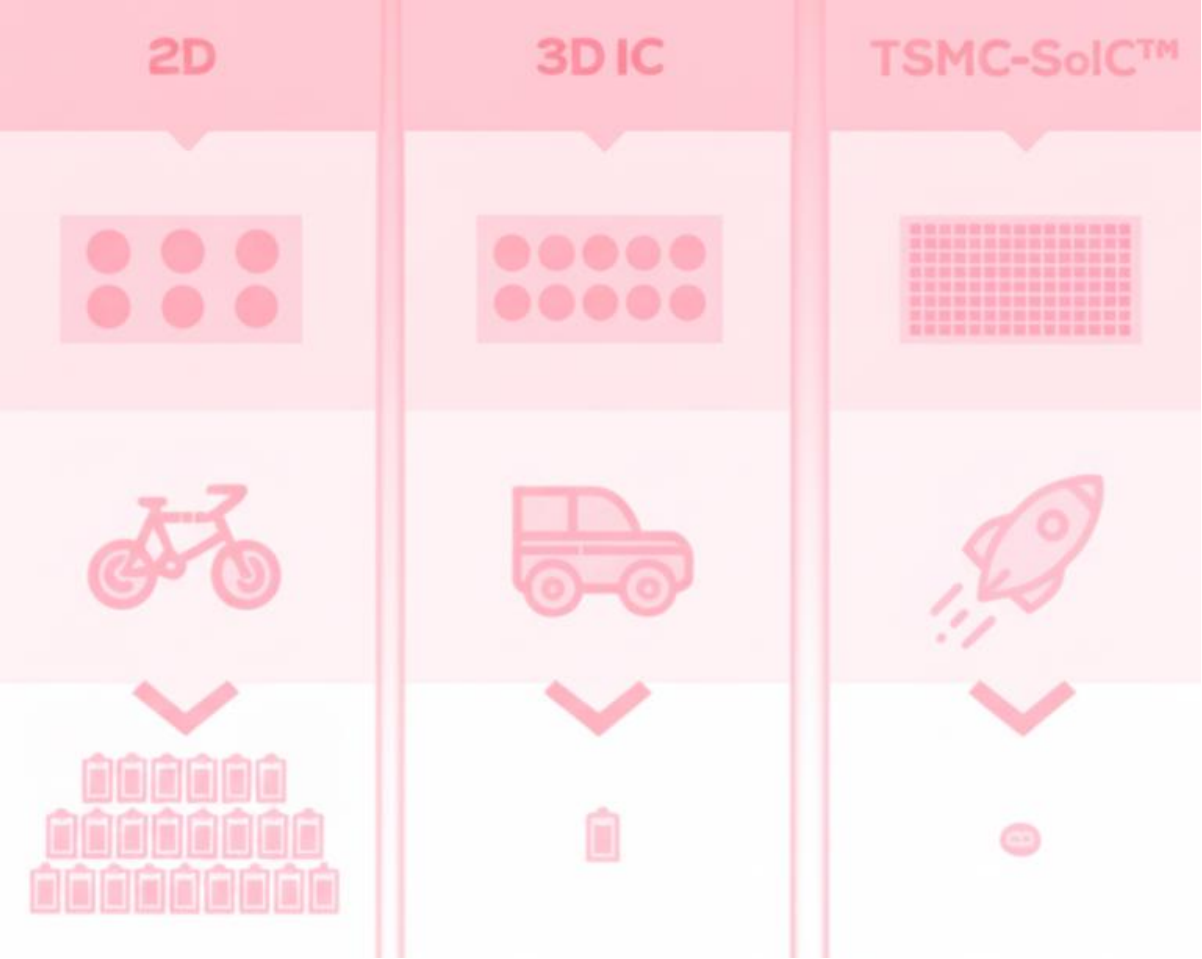
Capacity / Wafer Sales Plan





TSMC SoiC

TSMC's 3D IC chiplet stacking technology that enables the integration of chiplets with multilayers, multiple chip sizes, and multifunctions.



Bonding Density

Speed

Power Consumption

Geopolitics

The Economist

Business | Schumpeter

TSMC is making the best of a bad geopolitical situation

Speak softly, and carry a big chip

Quiet Power
TSMC's → central role in the global semiconductor supply

Negotiations with powers such as the US and China, thanks to **its technology that is critical to the digital economy**.

"If there is a war then, my goodness, we all have a lot more than just chips to worry about."
91-year-old founder, Morris Chang

Collapse of global supply chains (electronics, automobiles, medical equipment)

TSMC Chips

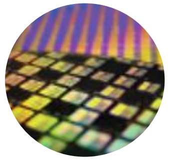
A16

- TSMC A16™ uses nanosheets and new Super Power Rail (SPR) technology.
- SPR improves density, performance, and reduces IR drop.
- Back contact maintains area and layout flexibility.
- Compared to N2P: +8–10% speed, –15–20% power, and +7–10% density.

2nm

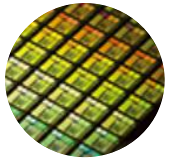
- First-generation nanosheet transistors with gains in performance and efficiency.
- Mass production expected by 2025.
- N2 will be the most advanced technology in the industry in terms of density and consumption.

3nm (2022)



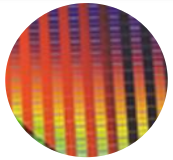
- N3 Delivers Industry-Leading Power, Performance, and Area (PPA).
- Significant Advancement Over 5nm Process.
- New Variants: N3E and N3P with Performance and Density Improvements.
- Expanded Lineup Includes N3X (HPC) and N3AE (Early Automotive).

5nm (2020)



- The company's second generation with EUV lithography, after the N7+.
- Expanded families: N5P, N4, N4P (improved power, performance and density).
- N4X for HPC and N5A aimed at automotive applications.
- N5, N5P, N4 and N4P already in volume production with excellent yield.

7nm (2018)



- N7 and N7+ applied to 5G, HPC, consumer electronics, and automotive products.
- 2019: N6 introduced – 7nm evolution with higher density.
- 2020: N6 enters mass production; widely adopted in smartphones, HPC, and DCE.
- N6e™ (ULP version) in development; PDK ready in 2023.

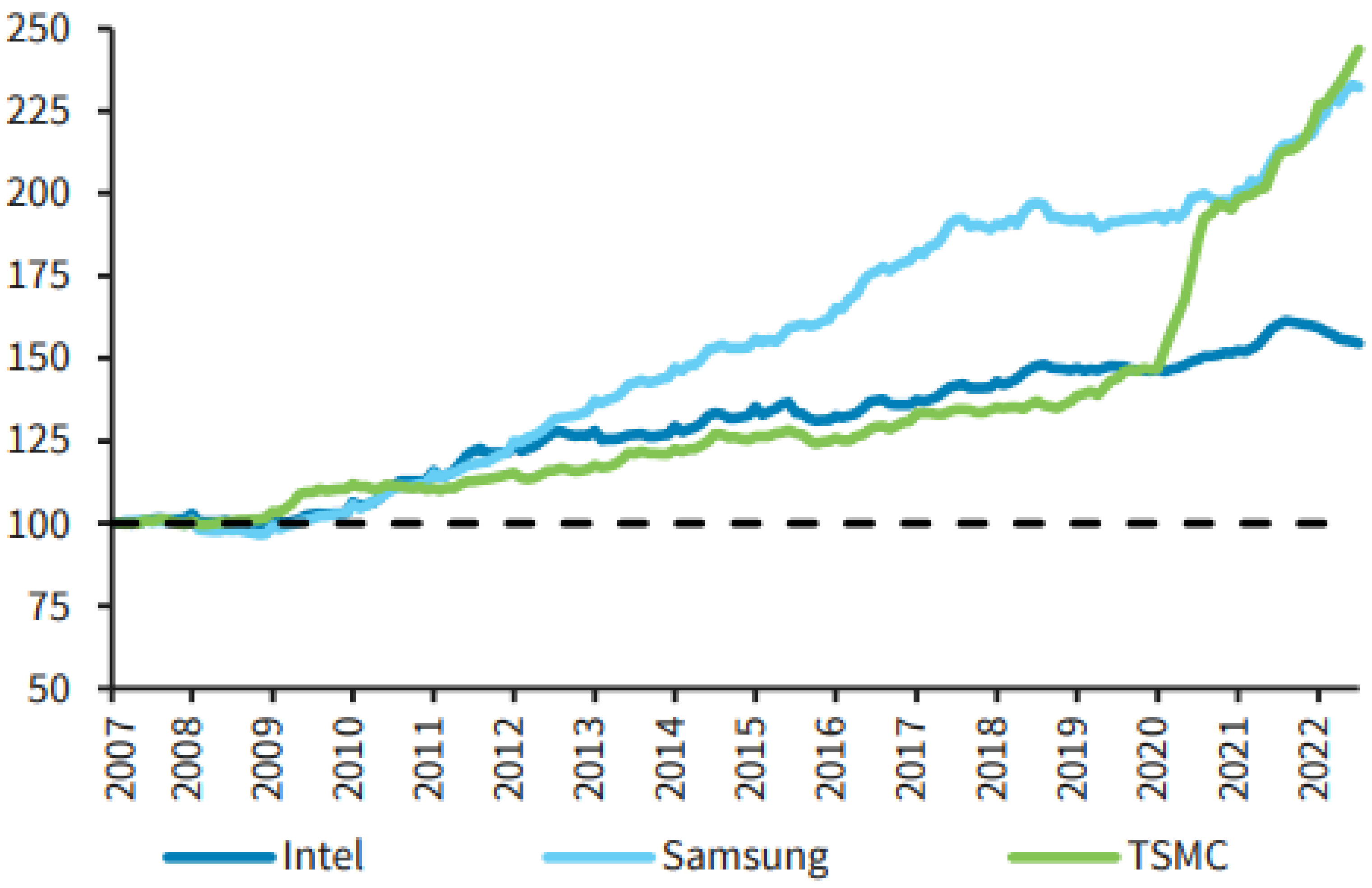
16/12nm

- 16/12nm technology delivers up to 50% more performance and 60% less power consumption than the 20nm process.
- Applications: premium mobile, networks, consumer and automotive sector.

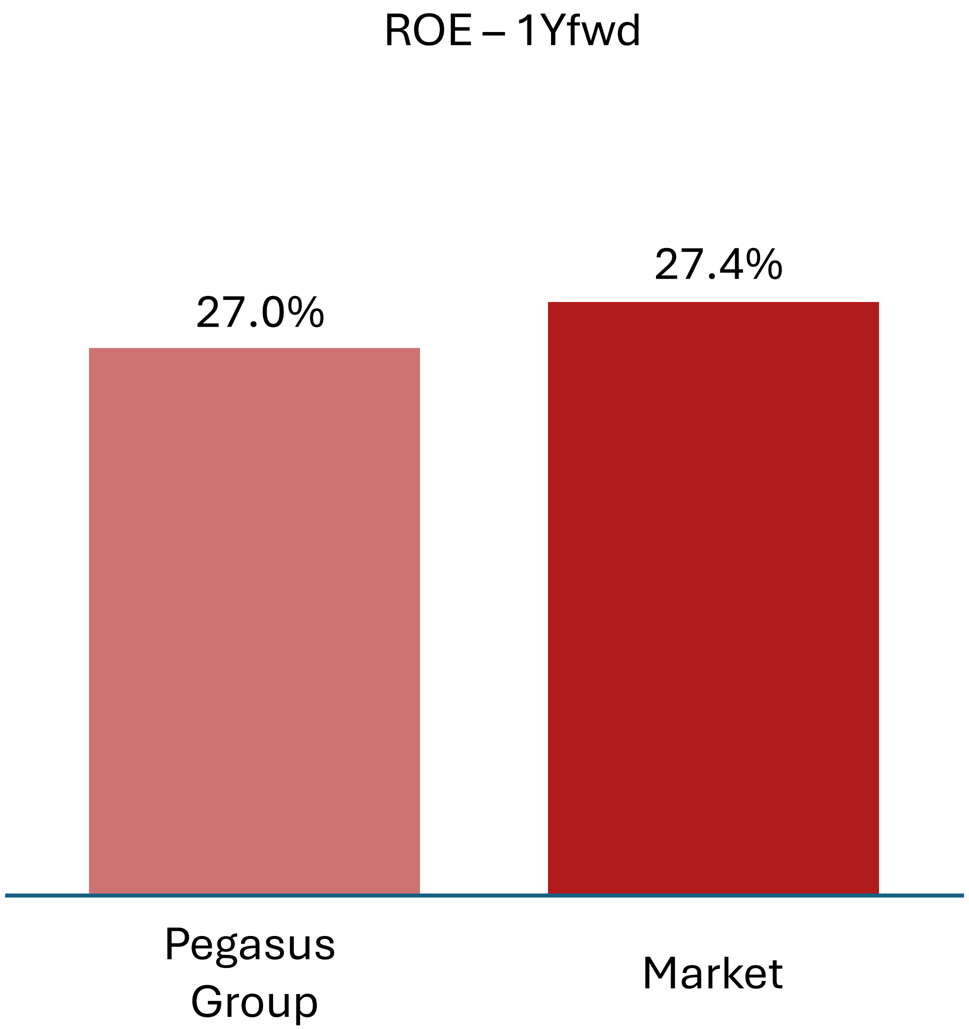
TSMC Technologies

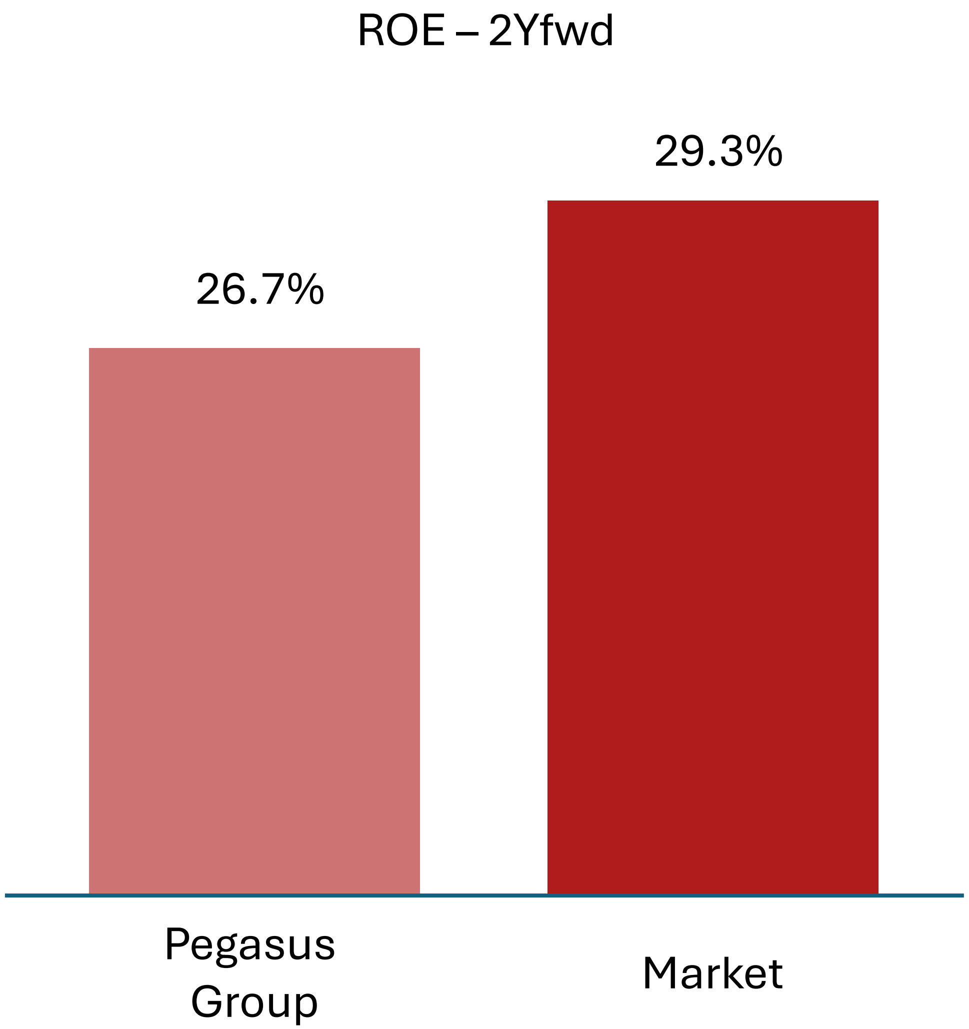
Technology	What it is	Main Applications
MEMS (Micro-Electro-Mechanical Systems)	Integrates mechanical microstructures with circuits	Sensors, gyroscopes, accelerometers, microphones
CMOS (Complementary Metal-Oxide-Semiconductor)	Core technology for manufacturing logic and digital chips	Processors, SoCs, image sensors
eFlash (Embedded Flash)	Flash memory embedded in the chip	Microcontrollers, IoT, automation
Ms/RF (Mixed-signal/Radio Frequency)	Combines analog and digital signals with RF capabilities	Wireless communication, 5G, Bluetooth, Wi-Fi
Analog	Continuous (non-digital) signal processing	Audio, sensors, amplifiers
HV (High Voltage)	Enables handling of higher voltages	Display drivers (LCD, OLED), industrial power
BCD (Bipolar-CMOS-DMOS)	Combines technologies for power control and logic	Power management, motor drivers
ULP (Ultra-Low Power)	Focused on minimizing power consumption	Wearables, IoT, battery-powered sensors

Engineers Headcount



Market Consensus Analyst x Pegasus Group





Multiples

TSM Taiwan Semiconductor Manufacturing Company Limited EV / EBIT (NTM) 13.9x
33.0x
30.0x
27.0x
24.0x
21.0x
20.0x
18.0x
16.0x
EV/EBIT (NTM)
13.9x
12.0x
10.0x
8.0x
2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Jan 2023
Jul 2023
Jan 2024
Jul 2024
Jan 2025
Jul 2025

Multiples

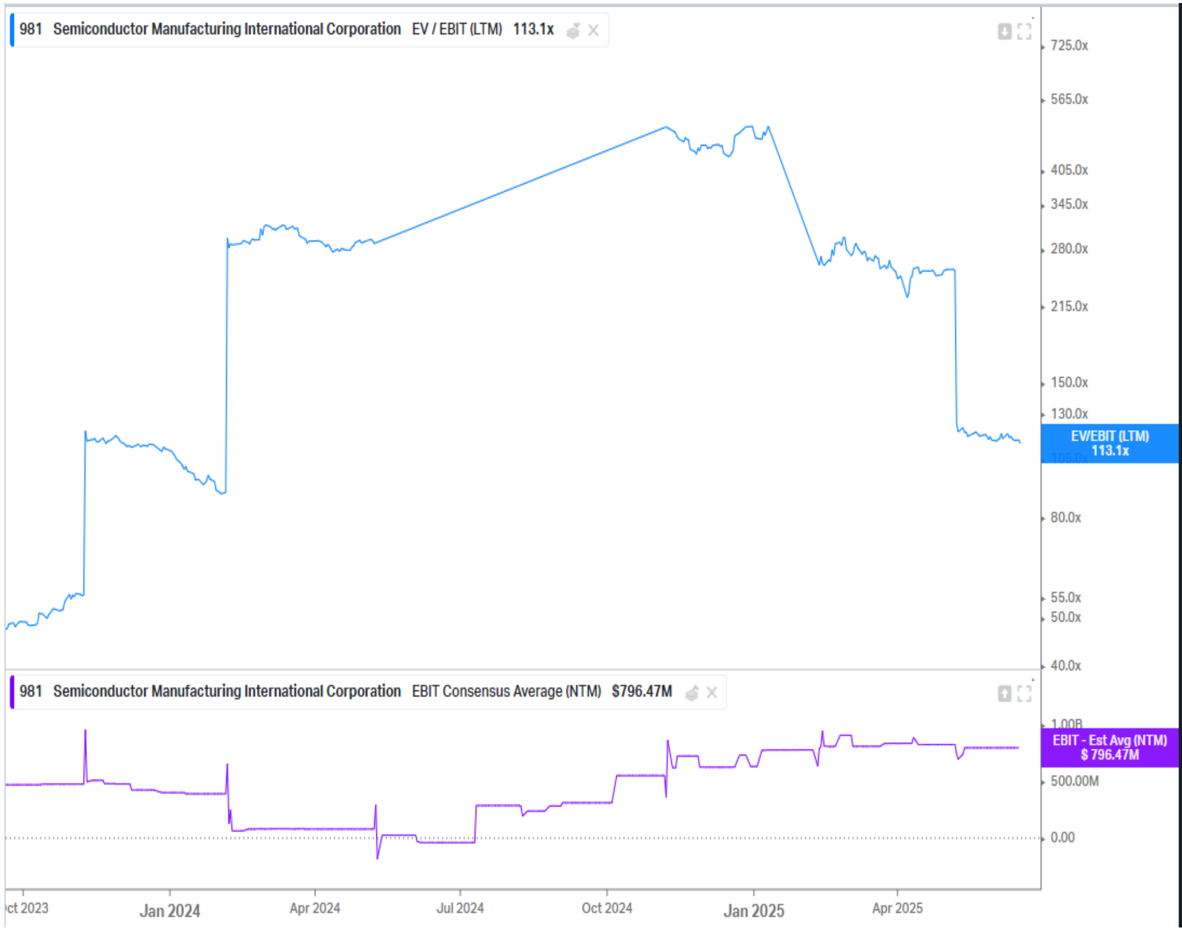

TSM Taiwan Semiconductor Manufacturing Company Limited EV / EBITDA (LTM) 11.5x
22.3x
21.0x
20.0x
18.0x
16.0x
14.0x
12.0x
EV/EBITDA (LTM) 11.5x
10.0x
8.0x
7.0x
6.0x
2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
May-19-23
Jan 2024
Jul 2024
Jan 2025
Jul 2025

Multiples

TSM Taiwan Semiconductor Manufacturing Company Limited Price / Earnings - P/E (LTM) 20.1x
40.0x
35.0x
30.0x
25.0x
P/E (LTM) 20.1x
19.0x
17.0x
15.0x
13.0x
11.0x
2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Jan 2023
Jul 2023
Jan 2024
Jul 2024
Jan 2025
Jul 2025

EV/EBIT & EBIT fwd(1yr)

EV/EBIT & EBIT fwd(1yr)



Chip act

Trump and TSMC announce $100 billion plan to build five new US factories

$52 billion in **incentives** for **semiconductor manufacturing projects** in the **United States**

25 % Investment Tax Credit for capital expenditures on new fabs and tool upgrades

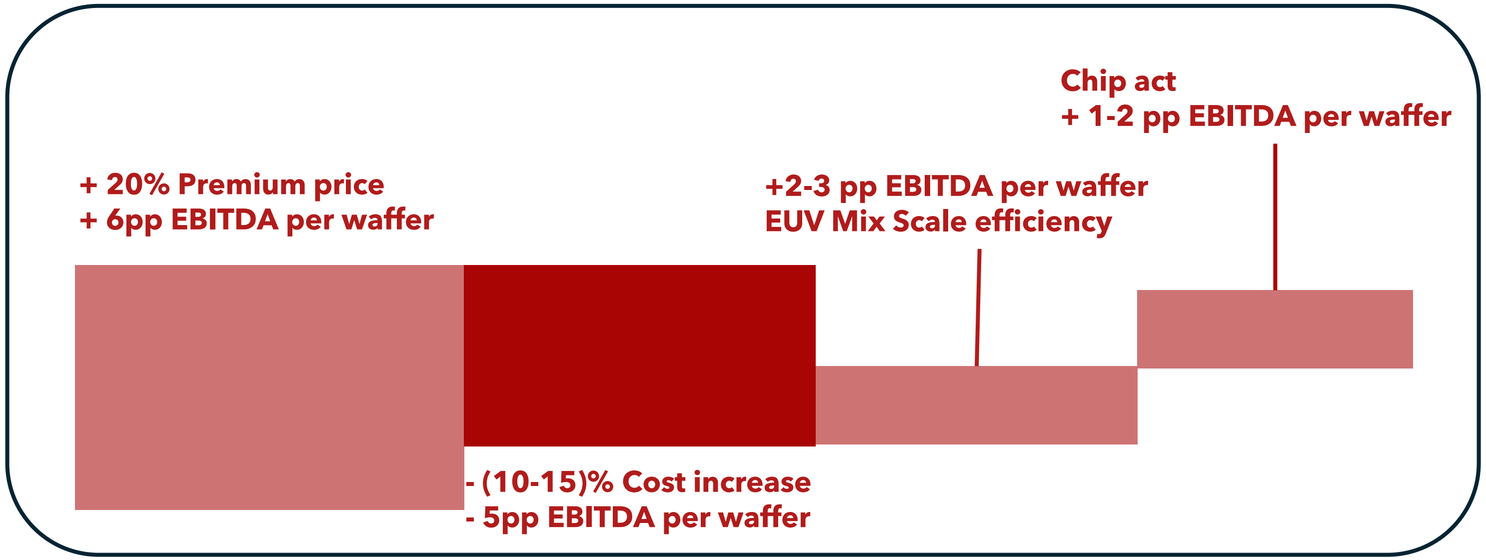
10-year "China guardrails": recipients cannot expand advanced-node capacity (≥28 nm) in China

Billions for R&D hubs—national labs, university programs

Chip act

• 3-4 % drop in EUV spend per wafer.• 0.5-1 pp yield boost.→ ~ TWD 100 mn a year in direct savings.

• Higher ASP → wider gross margin.
• Roughly TWD 30 mn per extra 1 pp of advanced-node mix.



EBITDA Margin Dilution of -2pp 25-27E', but an increase of 12~% of global volume sales

	Average wafer price (USD)	Estimated gross margin Chips made US	
3nm	20,000	65 to **70%**	
5nm	15,000	60 to **65%**	**+ 20% Premium price**
7nm	10,000	55 to **60%**	
28nm	2,000	40 to 45%	

Phoenix fab

Benefits

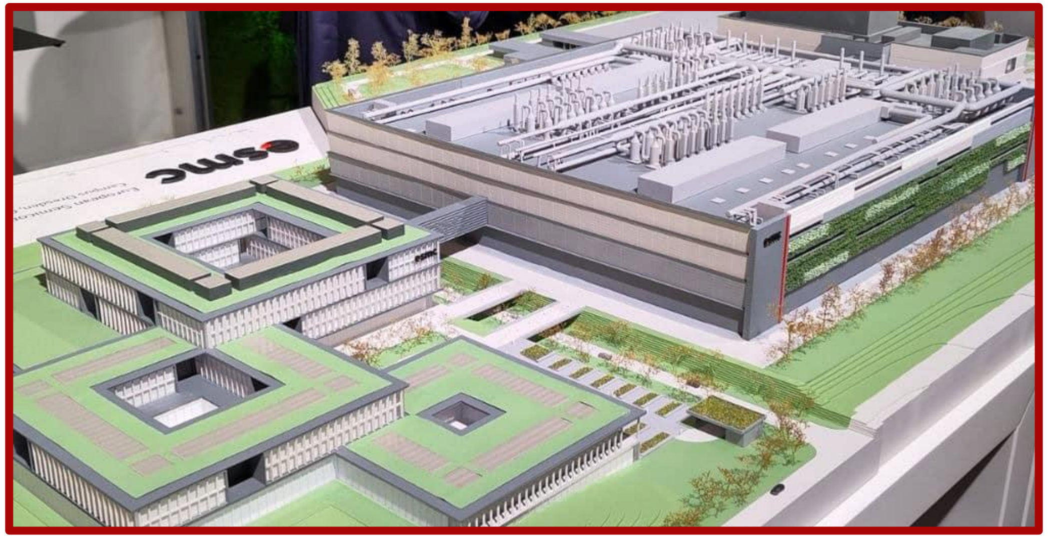
- 25% Tax Credit
- 12.5Bn USD Loan (10y Treasury)
- Grant 5 parcels (25-30) (28%Downpayment)

Japan fab

Benefits

- 15% Tax Credit
- 6.5Bn USD Loan (10y Treasury)

Dresdem fab



Benefits

- 50% Tax Credit
- 500Mn Euros Loan Saxony (Eurox Treasury)
- Grant 5bn Euros parcels (25-30)
(50%Downpayment)

Value Chain Alliance

- Independent design companies that collaborate closely with TSMC to accelerate systems and startups to market.
- Provide specific services at each link in the IC value chain, including IP development, design backend, wafer manufacturing, assembly, and testing.

GUC

alchip

ALPHAWAVE SEMI
Custom Silicon

asicland

AVNET
Reach Further™

TOPPAN
TOPPAN TECHNICAL DESIGN CENTER

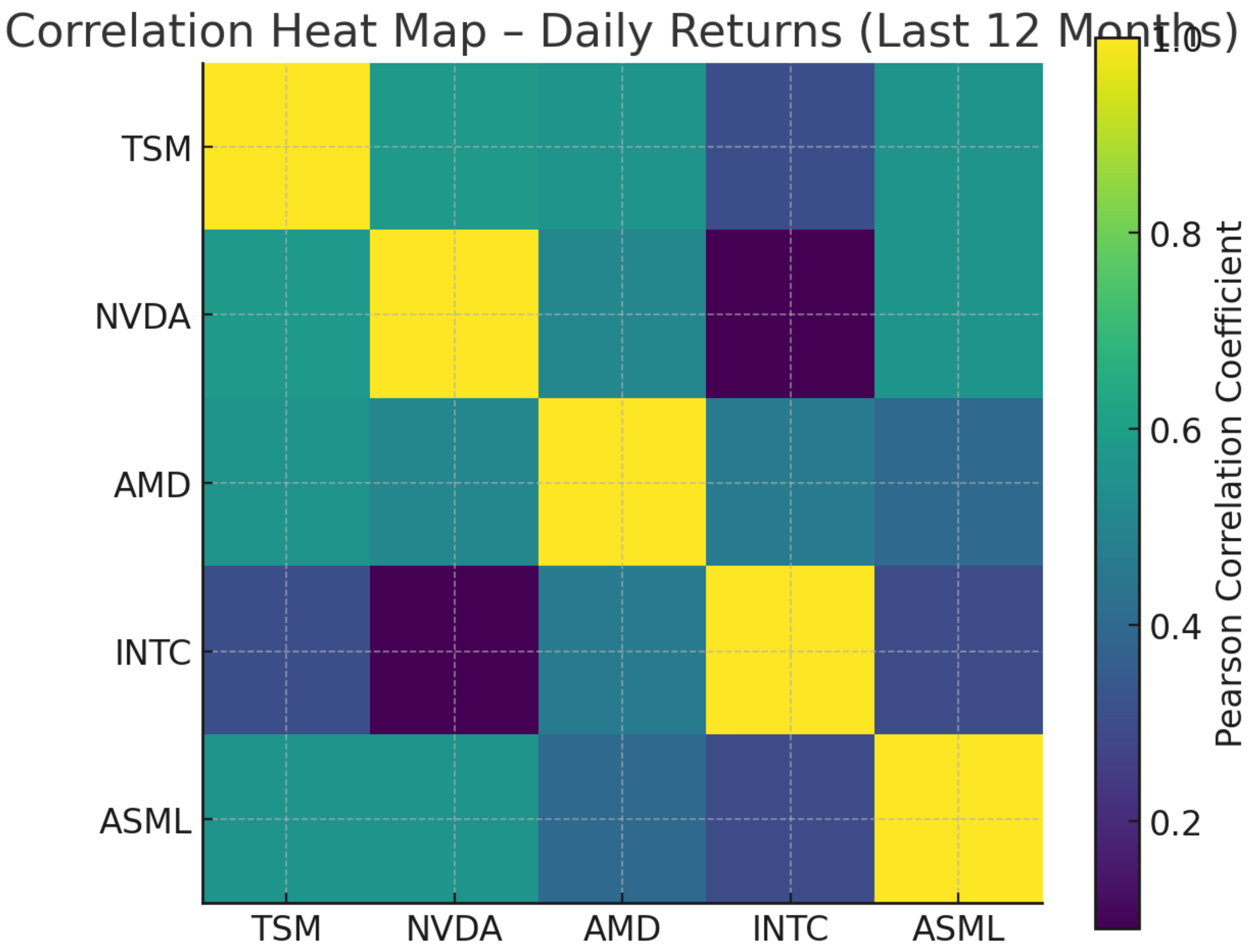
imec

China IC Design
Incubation Centers

VCA **accelerates innovation and time-to-market for fabless customers** by driving efficiency in chip design and manufacturing

TSM x S&P500 (Normalized)

Stock Correlation



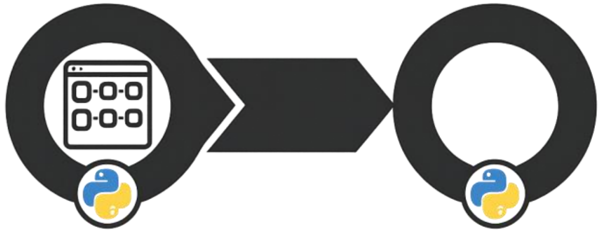
Beta Regression

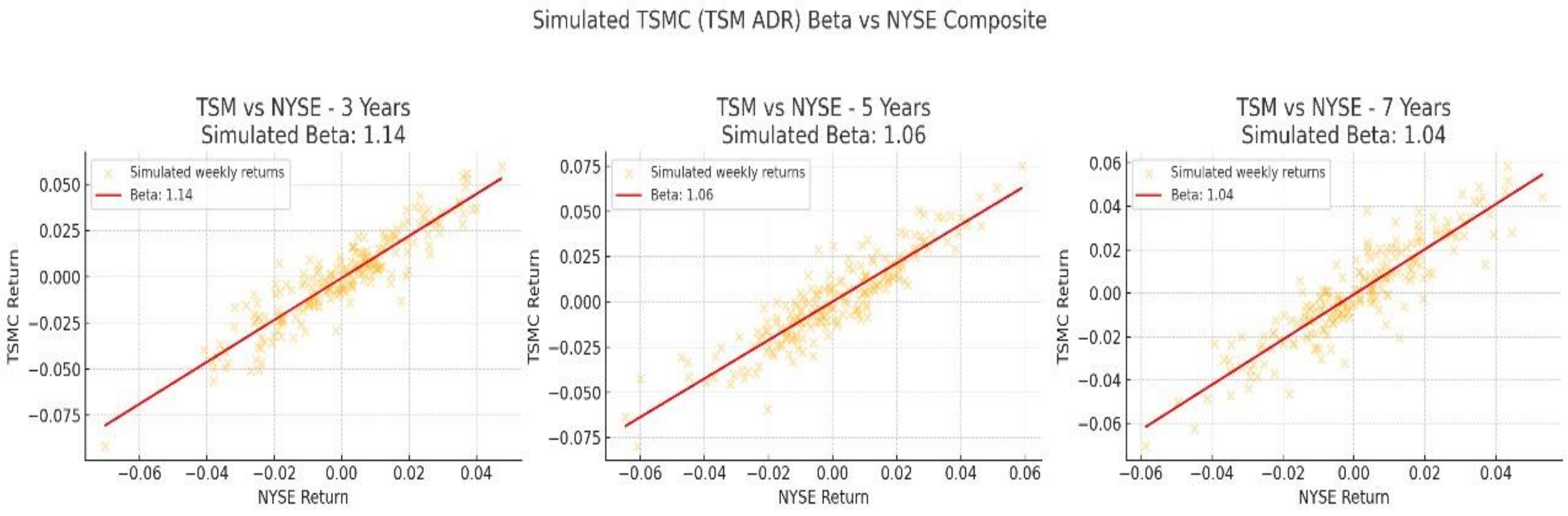
```python
import yfinance as yf
import pandas as pd
import statsmodels.api as sm
import matplotlib.pyplot as plt

# Lista de ativos e benchmark
ativos = {
      'Rede D\'Or': 'RDOR3.SA',
    'Dasa': 'DASA3.SA',
    'Mater Dei': 'MATD3.SA',
    'Hapvida': 'HAPV3.SA'

}
benchmark = '^BVSP'

# Baixar dados ajustados dos últimos 2 anos
data = yf.download(list(ativos.values()) + [benchmark], start='2021-04-01', end='2025-04-01', auto_adjust=True)['Close']

# Calcular retornos diários
returns = data.pct_change().dropna()

# Função para calcular beta
def calcular_beta(retornos_ativos, retornos_benchmark, nome_ativo):
    X = sm.add_constant(retornos_benchmark)
    y = retornos_ativos
    modelo = sm.OLS(y, X).fit()
    beta = modelo.params[1]

    print(f"Beta da {nome_ativo}: {beta:.4f}")

    # Opcional: plotar regressão
    plt.figure(figsize=(7,5))
    plt.scatter(retornos_benchmark, retornos_ativos, alpha=0.3)
    plt.plot(retornos_benchmark, modelo.predict(X), color='red')
    plt.title(f"Linear Regression - {nome_ativo}")
    plt.xlabel("IBOV Return")
    plt.ylabel(f"Return {nome_ativo}")
    plt.grid(True)
    plt.show()

# Calcular beta para cada ativo
for nome, ticker in ativos.items():
    calcular_beta(returns[ticker], returns[benchmark], nome)
```

python

TSMC & Semiconductor company

Linear Regression NYSE x TSM





NYSE

α=3%

3;5;7 Years

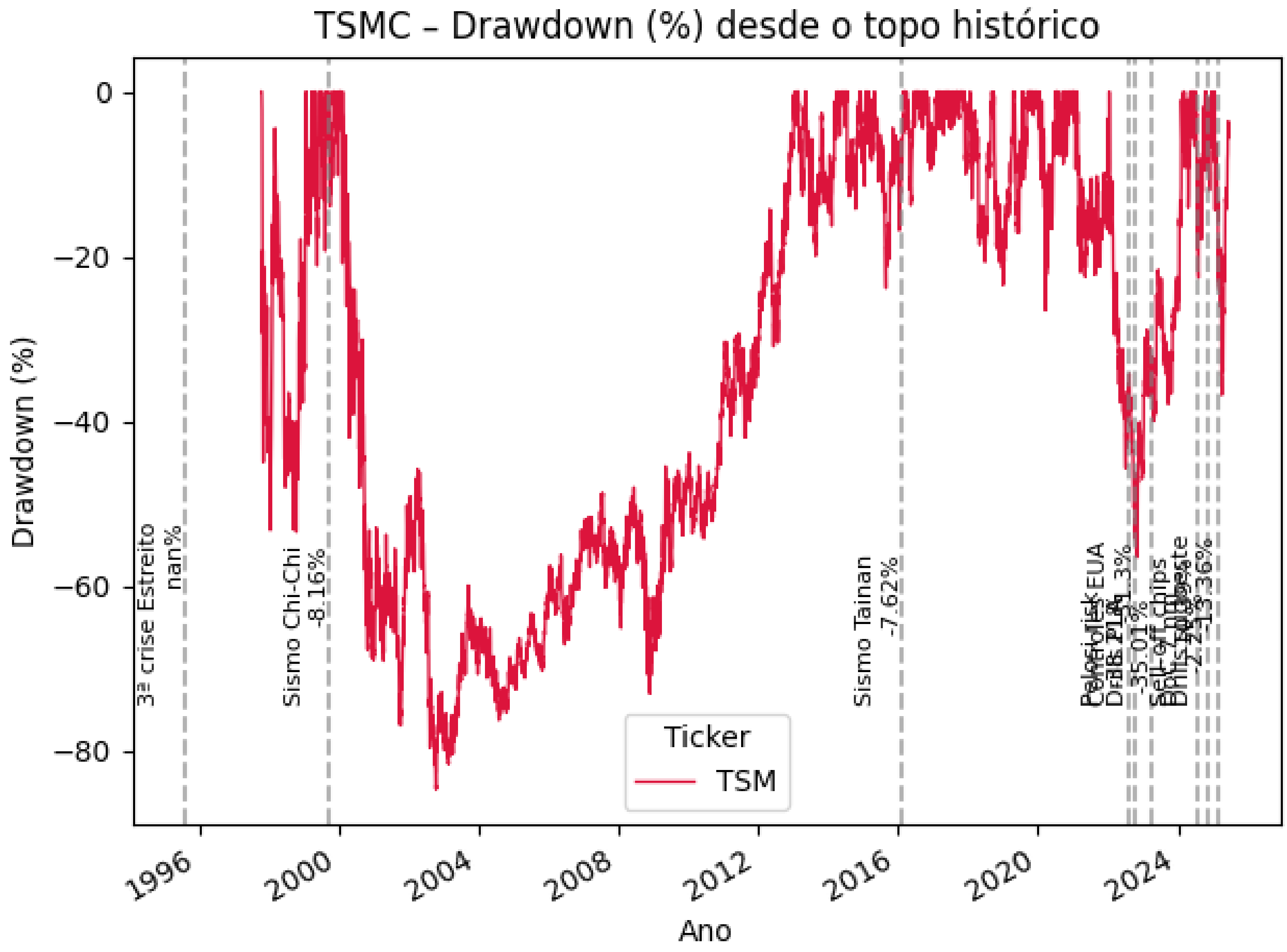
β=1.07

Desalavancado

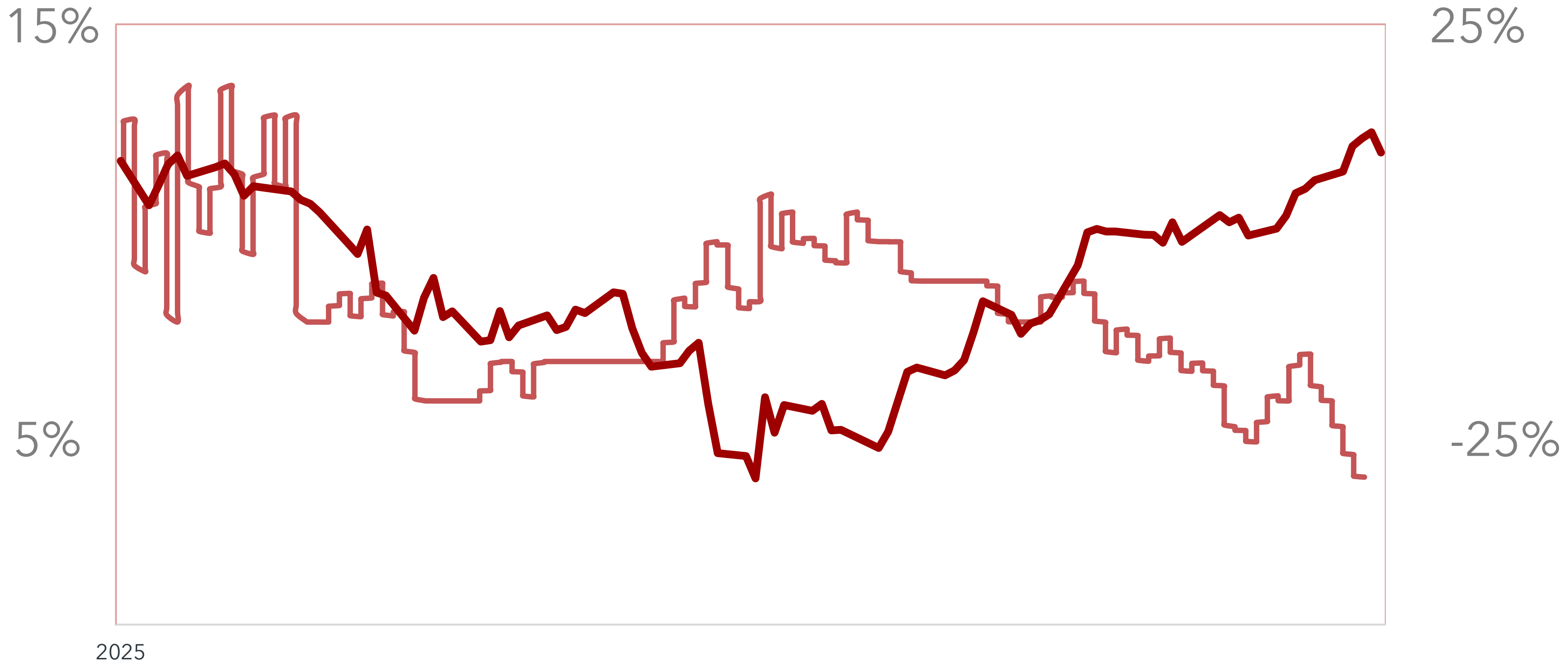
1β=1.21

Realavancado

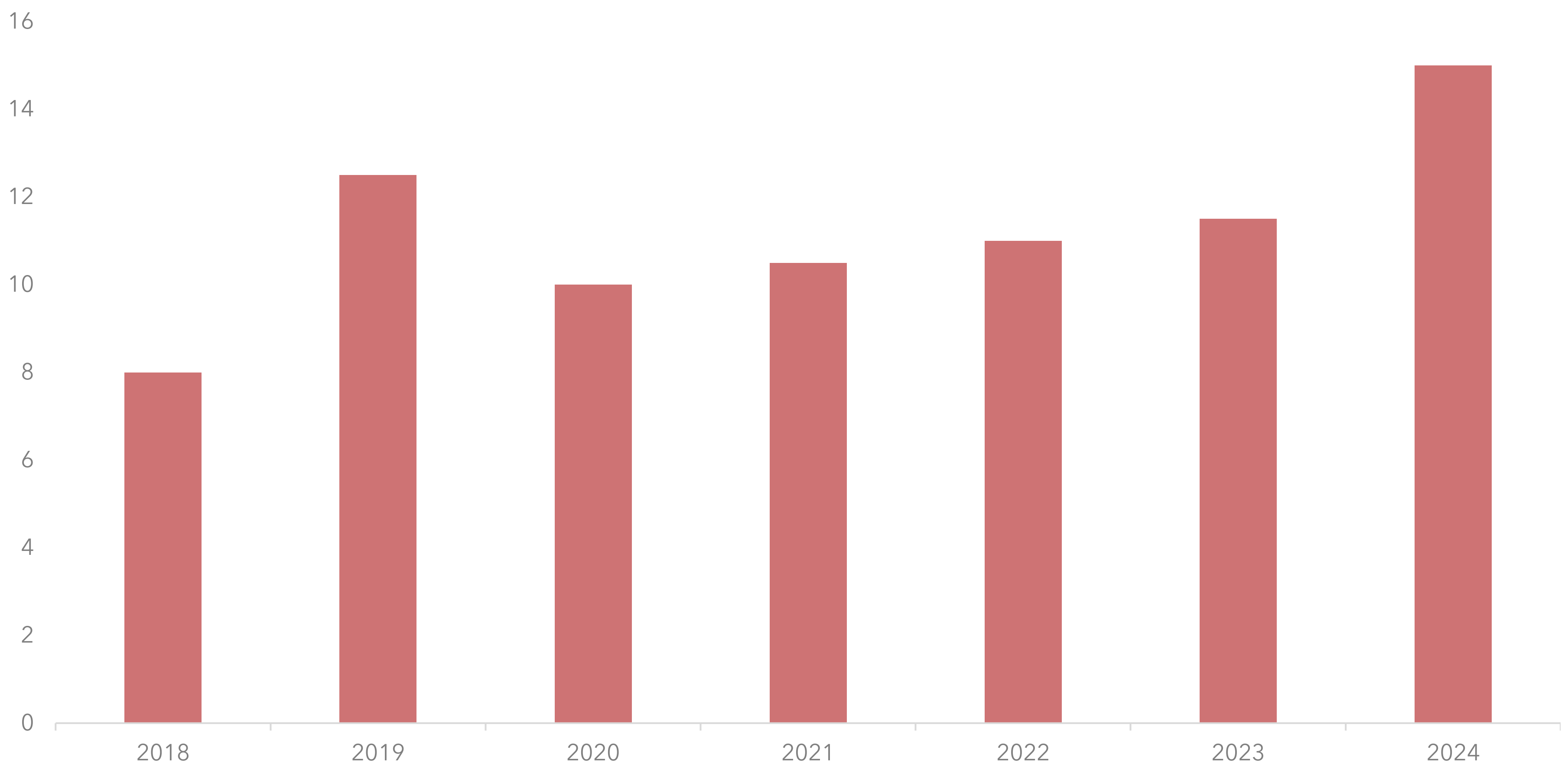
Stock Correlation



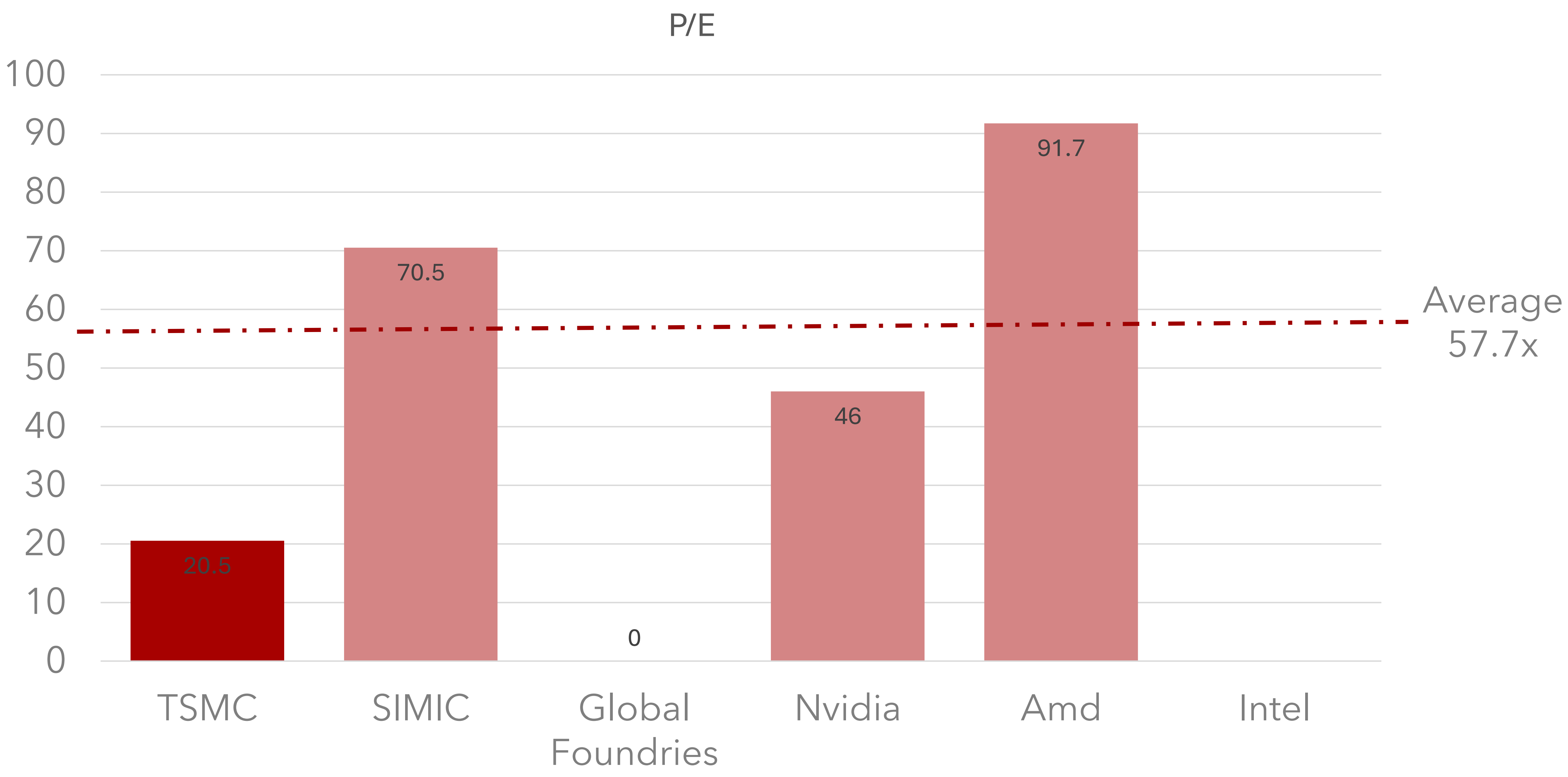
Stock Correlation / Poly Market Risk



Dividends TWD/Year

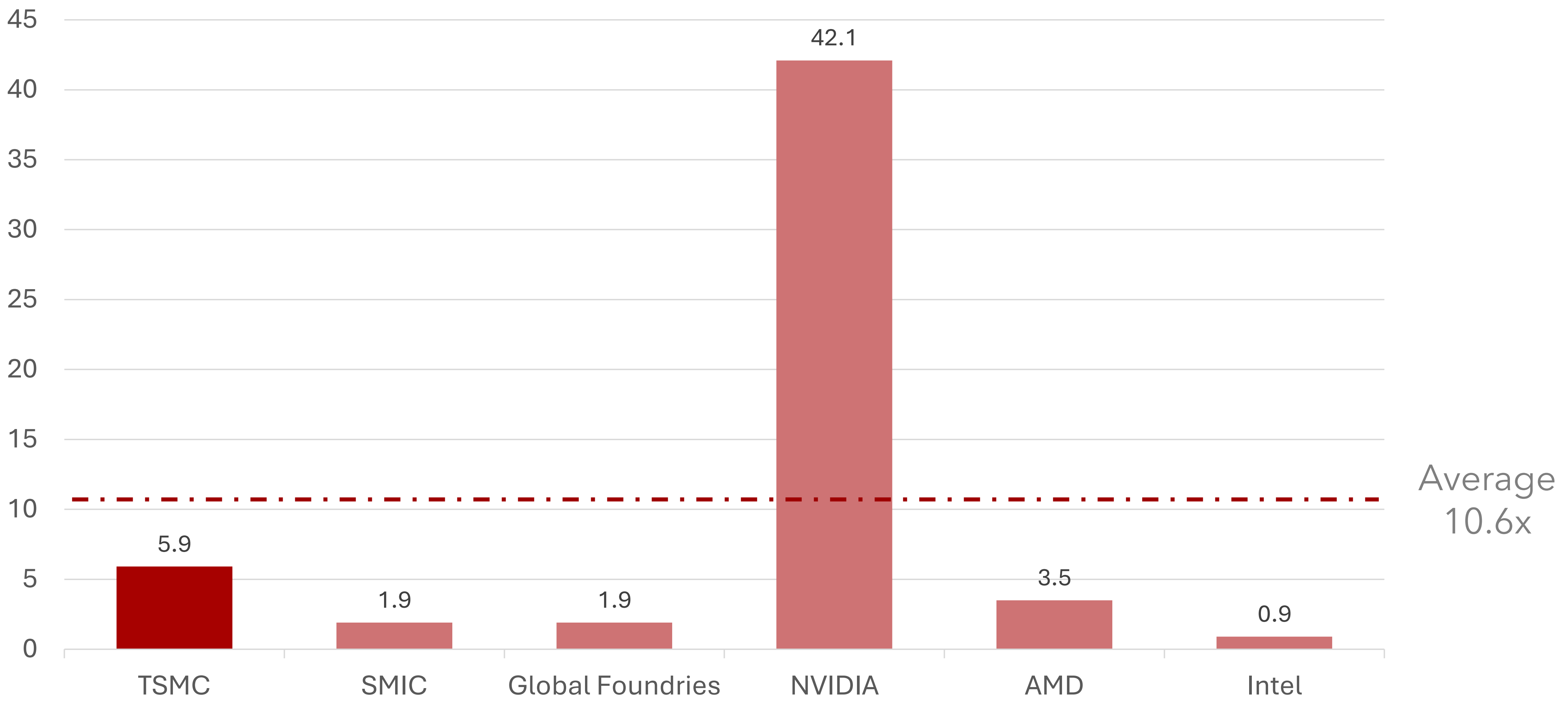


P/E Peers

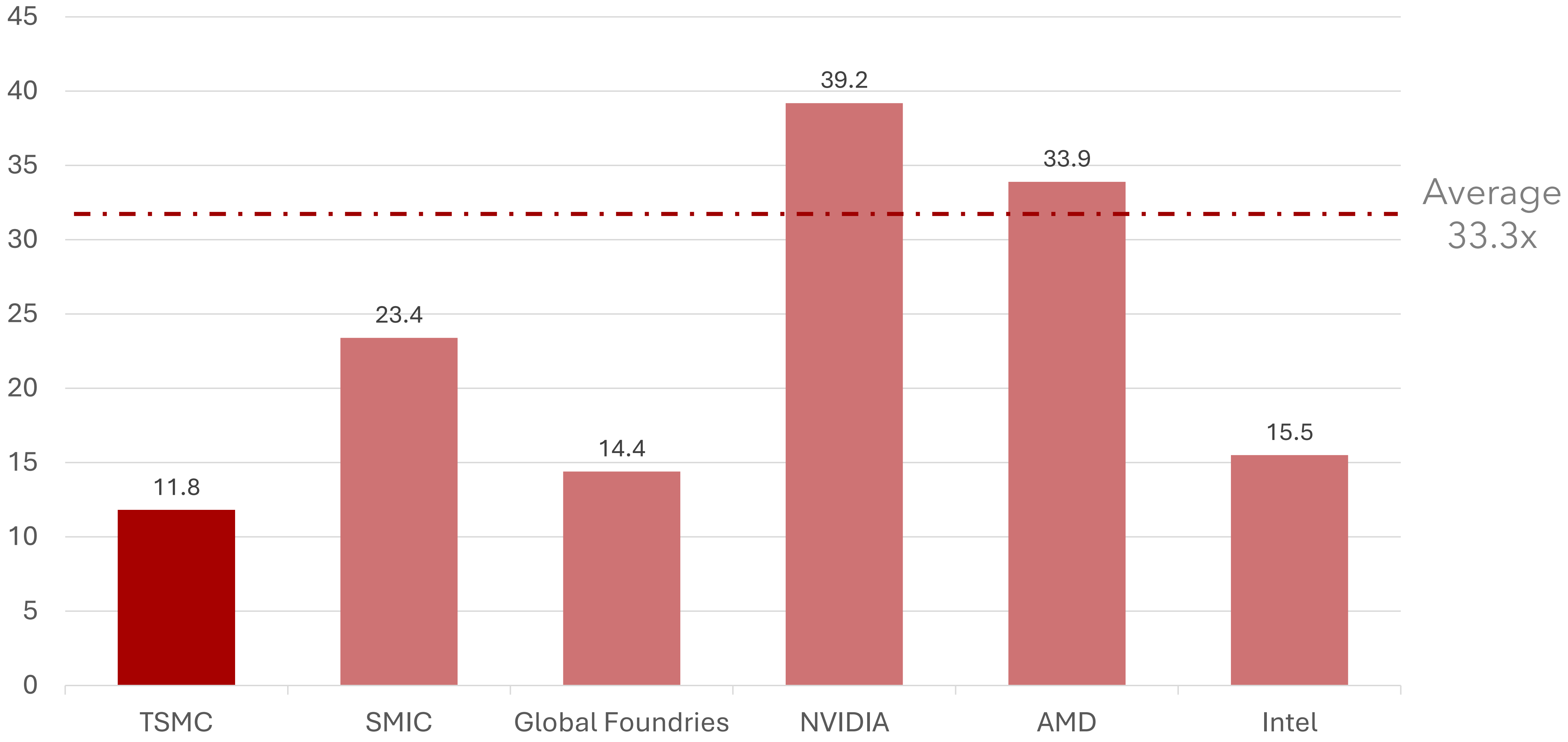


P/E
100
90
80
70
60
50
40
30
20
10
0
20.5
70.5
0
46
91.7
TSMC
SIMIC
Global Foundries
Nvidia
Amd
Intel
Average 57.7x

P/B Peers

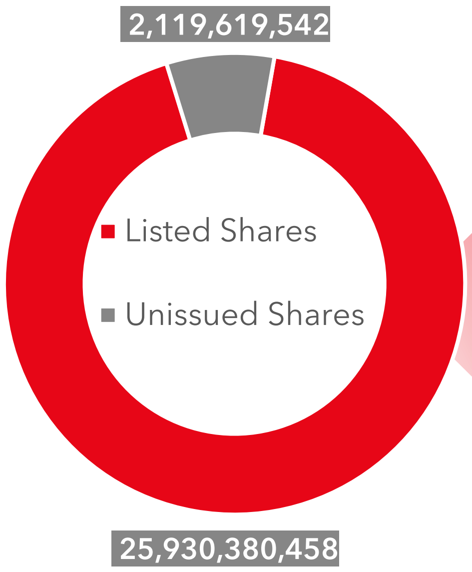

45
40
35
30
25
20
15
10
5
0
42.1
5.9
1.9
1.9
3.5
0.9
TSMC
SMIC
Global Foundries
NVIDIA
AMD
Intel
Average
10.6x

EV/EBITDA Peers

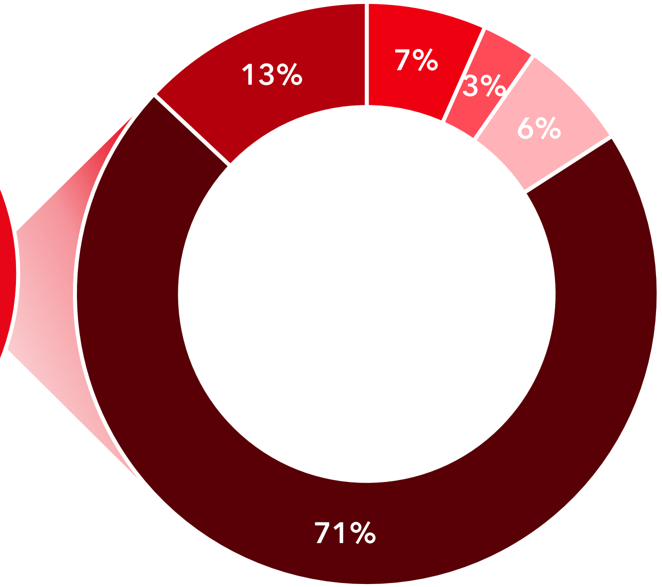


Capital and shares

Commmon Stock



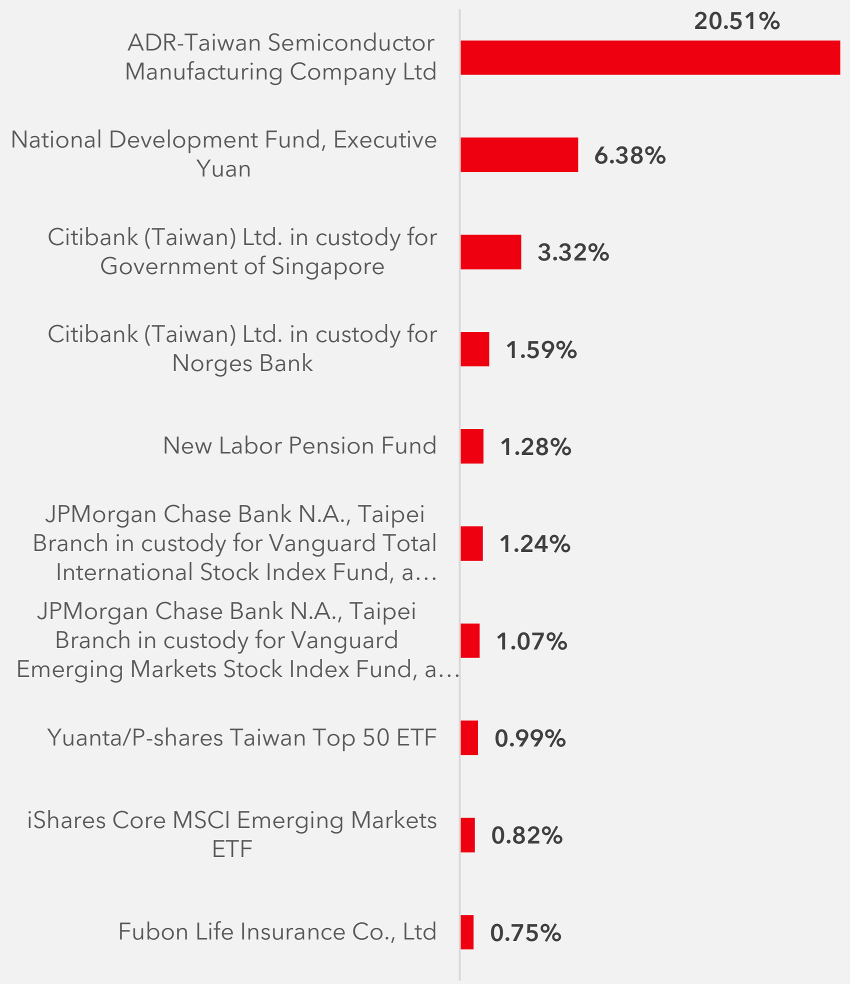
Composition of Shareholders



92,4% of free-float

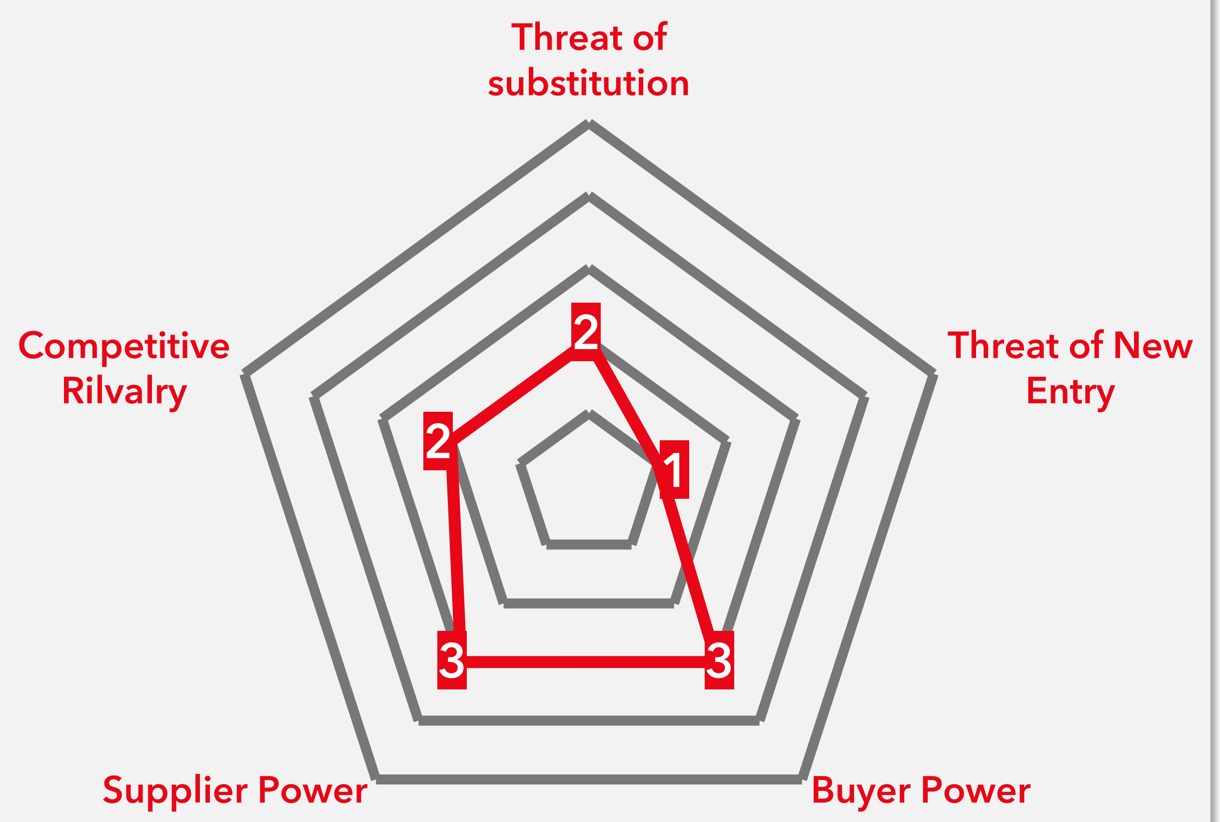
Government Agencies
Financial Institutions
Other Judicial Persons
Foreign Institutions and Natural Persons
Domestic Natural Persons

Major Shareholders



5 Porter's Forces

The analysis of Porter's Forces reinforces the consolidation of TSMC in the market



Threat of Substitution (2)

The pioneering spirit and strong investment in R&D by TSMC make it a leader in innovation, making it difficult for products from competitors to replace its technologies

Threat of New Entry (1)

Entering the semiconductor foundry sector requires massive investments in R&D, as well as an extremely specialized and scarce workforce

Buyer Power (3)

The company offers cutting-edge and exclusive technologies. However, TSMC must meet the demands of its partner tech giants, which represent a significant portion of its revenue

Supplier Power (3)

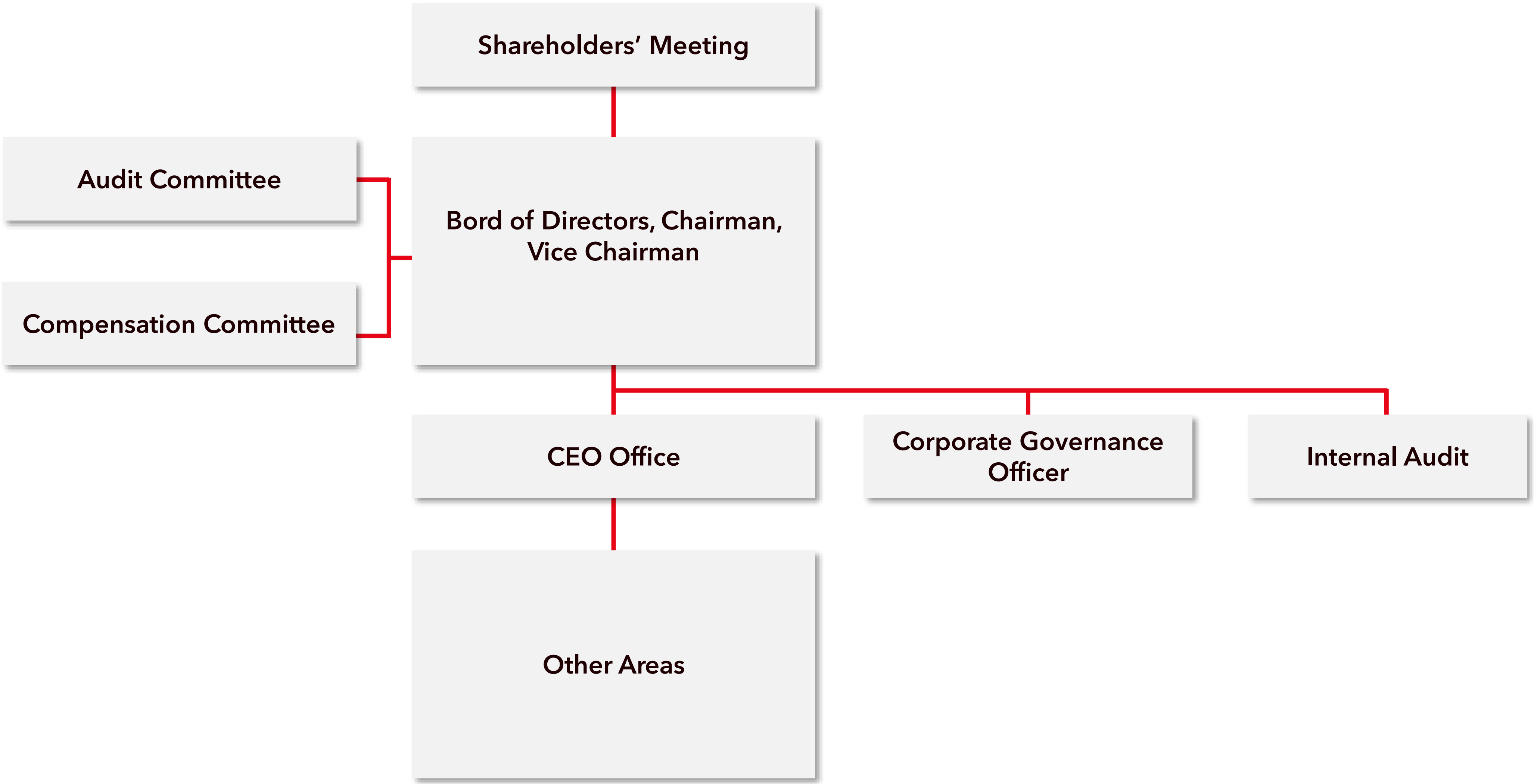
Suppliers have a certain dependence on TSMC since it is their main customer. However, the scarcity of suppliers, especially for manufacturing equipment, reduces TSMC's bargaining power

Competitive Rivalry (2)

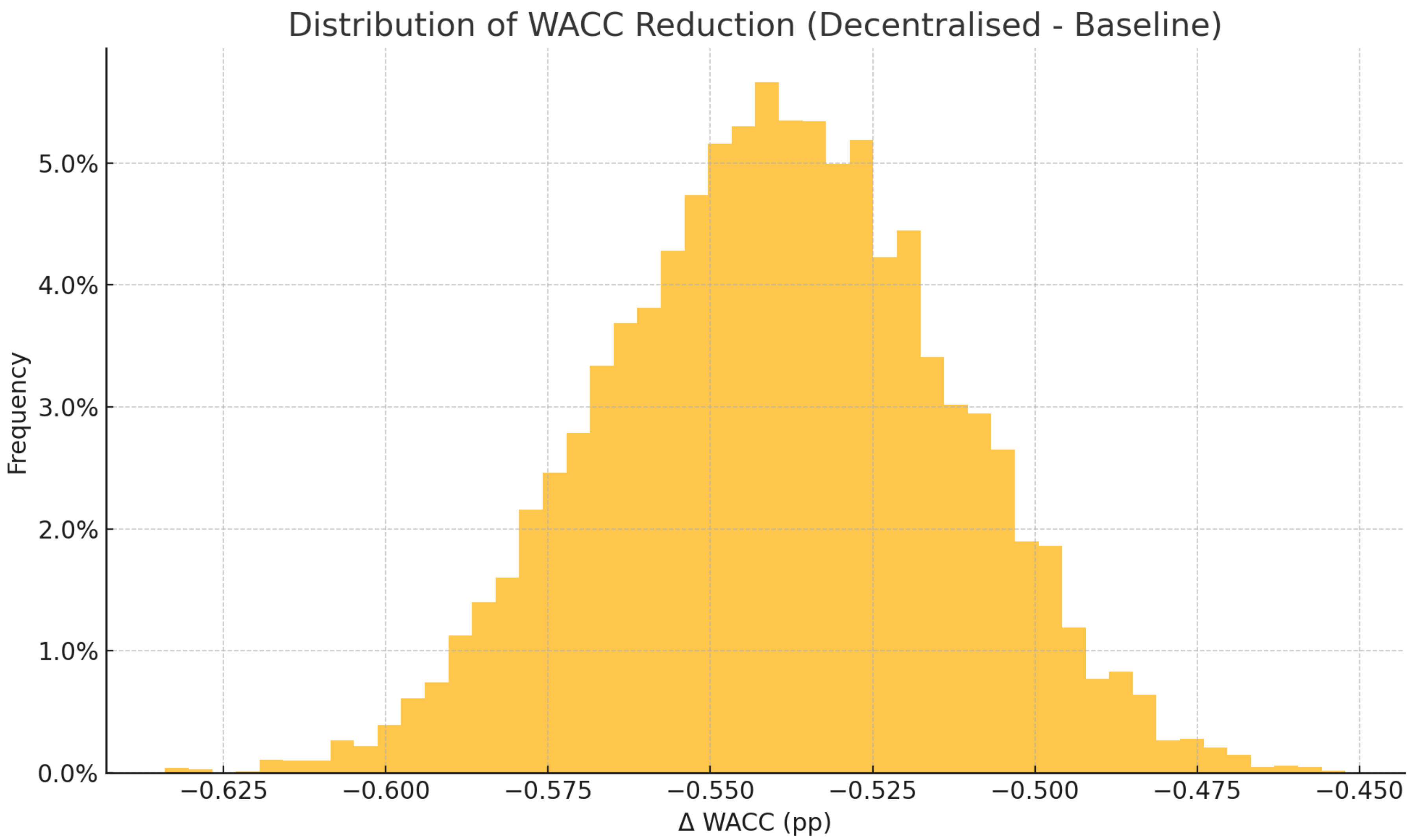
As mentioned earlier, TSMC dominates the market, with higher margins, profitability, and cash generation than its competitors, in addition to bringing more innovation

Organization

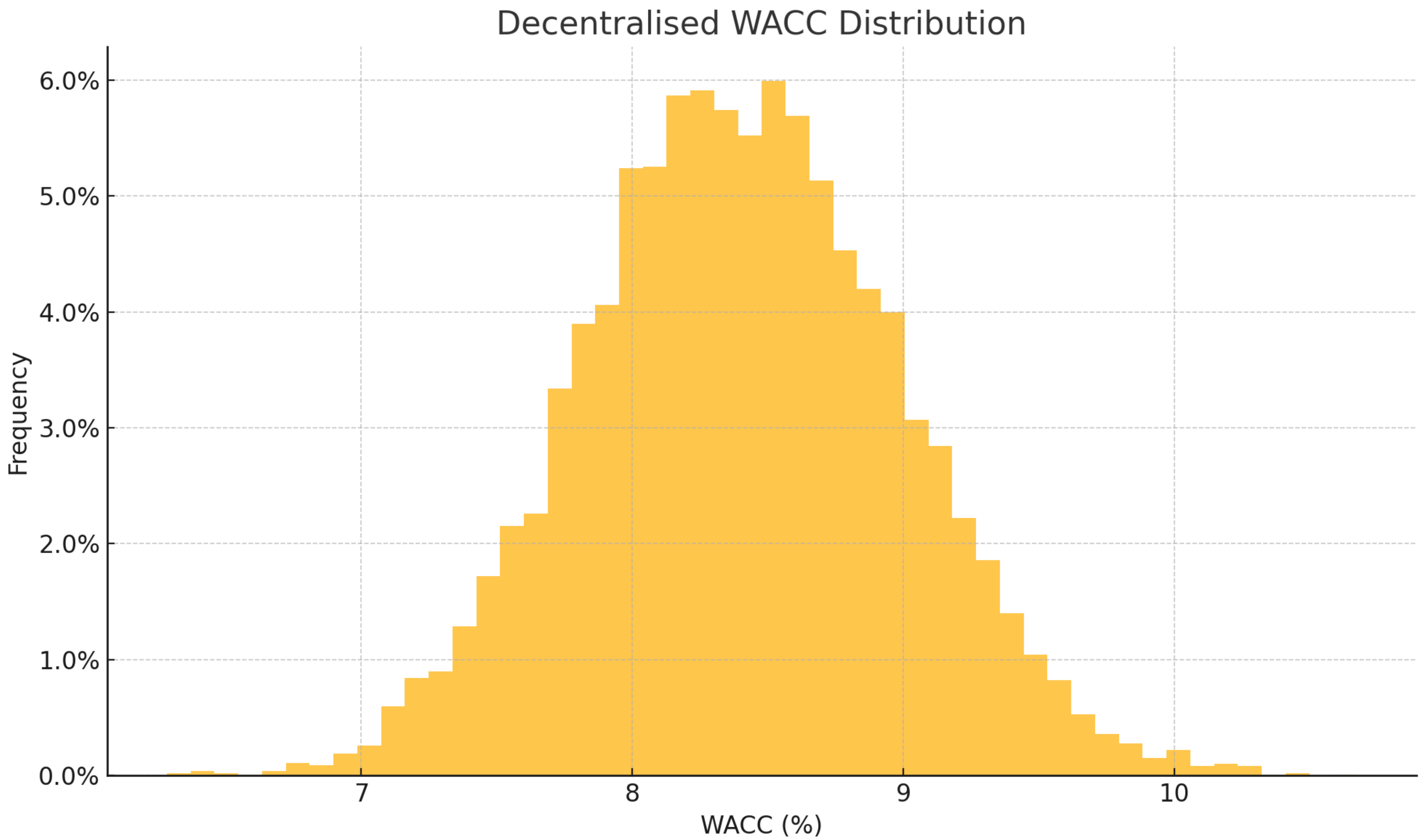
A good organizational structure contributes to delivering results



WACC MonteCarlo



WACC Delta Decentralization



Income statement

TWD million, unless otherwise stated	2020	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E
INCOME STATEMENT										
Net revenue	**1,339,255**	**1,587,415**	**2,263,891**	**2,161,736**	**2,894,308**	**3,634,383**	**4,224,593**	**4,904,551**	**5,703,989**	**6,645,063**
Cost of goods sold	(628,125)	(767,878)	(915,536)	(986,625)	(1,269,954)	(1,541,442)	(1,757,595)	(2,085,643)	(2,319,258)	(2,679,223)
Gross profit	**711,130**	**819,537**	**1,348,355**	**1,175,111**	**1,624,354**	**2,092,941**	**2,466,998**	**2,818,908**	**3,384,731**	**3,965,840**
SG&A	(145,056)	(169,223)	(226,708)	(253,834)	(301,071)	(378,055)	(439,450)	(510,180)	(593,339)	(691,231)
Research and Development Expenses	(109,486)	(124,735)	(163,262)	(182,370)	(204,182)					
Sales, General and Administrative Expenses	(35,570)	(44,488)	(63,446)	(71,464)	(96,889)					
Operating profit (EBIT)	**566,074**	**650,314**	**1,121,647**	**921,277**	**1,323,283**	**1,714,886**	**2,027,549**	**2,308,728**	**2,791,392**	**3,274,609**
Other income/(expenses)	11,766	12,518	11,872	9,600	5,838	-	-	-	-	-
Interest income/(expenses)	6,937	294	10,672	48,294	76,718	22,431	29,795	40,025	50,695	63,985
Pretax profit	**584,777**	**663,126**	**1,144,191**	**979,171**	**1,405,839**	**1,737,317**	**2,057,343**	**2,348,753**	**2,842,087**	**3,338,594**
Income tax	(66,619)	(66,053)	(127,290)	(141,403)	(233,407)	(288,441)	(341,574)	(389,956)	(471,863)	(554,296)
Net income	**518,158**	**597,073**	**1,016,901**	**837,768**	**1,172,432**	**1,448,876**	**1,715,769**	**1,958,797**	**2,370,225**	**2,784,298**
Depreciation	313,380	402,931	413,595	500,301	625,747	694,177	812,816	935,432	1,072,521	1,209,362
Amortizaton	7,048	8,707	8,101	9,198	9,129	13,880	17,247	21,090	25,485	30,535
EBITDA	**886,501**	**1,061,952**	**1,543,343**	**1,430,776**	**1,958,160**	**2,422,943**	**2,857,611**	**3,265,250**	**3,889,398**	**4,514,507**

Balance sheet

TWD million, unless otherwise stated	2020	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E
BALANCE SHEET										
ASSETS										
Current assets	**1,092,185**	**1,607,073**	**2,052,897**	**2,194,033**	**3,088,352**	**3,704,932**	**4,430,736**	**5,214,575**	**6,141,115**	**7,234,924**
Cash and cash equivalents	660,171	1,064,990	1,342,814	1,687,645	2,422,019	2,903,656	3,526,188	4,192,676	4,982,916	5,918,252
Accounts receivable	146,038	198,302	231,340	201,938	272,088	341,661	397,145	461,067	536,220	624,689
Inventories	137,353	193,102	221,149	250,997	287,869	353,239	401,027	454,456	515,602	585,606
Other current assets	148,623	150,679	257,594	53,453	106,376	106,376	106,376	106,376	106,376	106,376
Non current assets	**1,668,526**	**2,118,430**	**2,911,882**	**3,338,338**	**3,603,586**	**3,962,527**	**4,425,783**	**4,998,461**	**5,693,476**	**6,527,730**
Long-term Investments	27,728	29,384	68,928	129,442	149,040	149,040	149,040	149,040	149,040	149,040
Property, Plant and Equipment	1,555,589	1,975,119	2,693,837	3,064,475	3,234,980	3,540,657	3,943,113	4,446,271	5,061,392	5,803,417
Right-of-use, Intangible and Other Non-current Assets	85,209	113,927	149,117	144,421	219,566	272,830	333,631	403,150	483,044	575,273
Total assets	**2,760,711**	**3,725,503**	**4,964,779**	**5,532,371**	**6,691,938**	**7,667,459**	**8,856,520**	**10,213,036**	**11,834,591**	**13,762,653**
LIABILITIES										
Current liabilities	**617,151**	**739,503**	**944,227**	**913,583**	**1,264,525**	**1,325,124**	**1,369,426**	**1,418,956**	**1,475,640**	**1,540,535**
Short-term Loans	88,559	114,921	-	-	-	-	-	-	-	-
Accounts Payable	198,900	194,465	270,022	228,778	266,862	327,461	371,763	421,293	477,977	542,872
Cash Dividends Payable	129,652	142,617	142,617	168,558	220,419	220,419	220,419	220,419	220,419	220,419
Accrued Expenses and Other Current Liabilities	197,440	282,933	512,274	506,954	717,386	717,386	717,386	717,386	717,386	717,386
Other current liabilities	2,600	4,567	19,314	9,293	59,858	59,858	59,858	59,858	59,858	59,858
Non current liabilities	**292,938**	**815,267**	**1,060,063**	**1,135,525**	**1,103,837**	**1,103,837**	**1,103,837**	**1,103,837**	**1,103,837**	**1,103,837**
Bonds Payable	254,105	610,071	834,336	913,900	926,604	926,604	926,604	926,604	926,604	926,604
Other Non-current Liabilities	38,833	205,196	225,727	221,625	177,233	177,233	177,233	177,233	177,233	177,233
Total liabilities	**910,089**	**1,554,770**	**2,004,290**	**2,049,108**	**2,368,362**	**2,428,961**	**2,473,263**	**2,522,793**	**2,579,477**	**2,644,372**
Equity										
Capital Stock at Par Value	259,304	259,304	259,304	259,321	259,327	259,327	259,327	259,327	259,327	259,327
Capital Surplus	56,347	64,762	69,330	69,876	73,261	73,261	73,261	73,261	73,261	73,261
Legal Capital Reserve	311,147	311,147	311,147	311,147	311,147	311,147	311,147	311,147	311,147	311,147
Special Capital Reserve	42,259	59,304	3,154	-	-	-	-	-	-	-
Unappropriated Earnings	########	1,536,378	2,323,224	2,846,884	3,606,105	4,521,026	5,665,786	6,972,773	8,537,643	#########
Others	(54,680)	(62,609)	(20,506)	(28,314)	38,705	38,705	38,705	38,705	38,705	38,705
Noncontrolling Interests	965	2,447	14,836	24,349	35,031	35,031	35,031	35,031	35,031	35,031
Total equity	**1,850,622**	**2,170,733**	**2,960,489**	**3,483,263**	**4,323,576**	**5,238,497**	**6,383,257**	**7,690,244**	**9,255,114**	**11,118,281**
Balance check	-	-	-	-	-	-	-	-	-	-

Cash flow statement

TWD million, unless otherwise stated	2025E	2026E	2027E	2028E	2029E
CASH FLOW STATEMENT					
Net income	1,434,785	1,706,008	2,025,304	2,406,033	2,861,556
Depreciation & Amortization	708,057	777,018	867,222	979,587	1,116,633
Decreases / (Increases) in working capital assets	(134,943)	(103,273)	(117,350)	(136,300)	(158,472)
Increases / (Decreases) in working capital liabilities	60,599	44,301	49,530	56,684	64,895
Decreases / (Increases) in other assets	-	-	-	-	-
Increases / (Decreases) in other liabilities	-	-	-	-	-
Cash from operating activities	**2,068,499**	**2,424,054**	**2,824,705**	**3,306,004**	**3,884,612**
Capital expenditures - PP&E	(999,854)	(1,162,227)	(1,349,290)	(1,569,223)	(1,828,122)
Increase in Right-of-use, Intangible and Other Non-current Assets	(67,144)	(78,047)	(90,609)	(105,379)	(122,765)
Cash from investing activities	**(1,066,998)**	**(1,240,274)**	**(1,439,899)**	**(1,674,602)**	**(1,950,886)**
Bonds payble	-	-	-	-	-
Short term loans	-	-	-	-	-
Dividends	(519,864)	(561,248)	(718,317)	(841,163)	(998,389)
Cash from financing activities	**(519,864)**	**(561,248)**	**(718,317)**	**(841,163)**	**(998,389)**
Cash & equivalents BoP	2,422,019	2,903,656	3,526,188	4,192,676	4,982,916
(+) Net change in cash during the period	481,637	622,531	666,489	790,240	935,336
Cash & equivalents EoP	**2,903,656**	**3,526,188**	**4,192,676**	**4,982,916**	**5,918,252**

Free cash flow

TWD million, unless otherwise stated	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E
NOPAT	585,537	996,865	788,235	1,103,583	1,416,078	1,681,276	1,992,784	2,365,176	2,810,813
(+) D&A	411,638	421,696	509,499	634,877	708,057	777,018	867,222	979,587	1,116,633
(-) Capex	(859,886)	(1,175,604)	(875,441)	(880,527)	(1,066,998)	(1,240,274)	(1,439,899)	(1,674,602)	(1,950,886)
(-) Increase in Net Working Capital	(27,044)	151,645	147,110	139,136	(74,343)	(58,972)	(67,820)	(79,616)	(93,577)
(=) Free cash flow to firm	**110,245**	**394,602**	**569,403**	**997,069**	**982,794**	**1,159,048**	**1,352,286**	**1,590,545**	**1,882,983**
Net income	597,073	1,016,901	837,768	1,172,432	1,434,785	1,706,008	2,025,304	2,406,033	2,861,556
(+) D&A	411,638	421,696	509,499	634,877	708,057	777,018	867,222	979,587	1,116,633
(-) Capex	(859,886)	(1,175,604)	(875,441)	(880,527)	(1,066,998)	(1,240,274)	(1,439,899)	(1,674,602)	(1,950,886)
(-) Increase in Net Working Capital	(27,044)	151,645	147,110	139,136	(74,343)	(58,972)	(67,820)	(79,616)	(93,577)
(+) New debt	382,328	109,344	79,564	12,704	-	-	-	-	-
(=) Free cash flow to equity	**504,109**	**523,982**	**698,500**	**1,078,622**	**1,001,501**	**1,183,780**	**1,384,806**	**1,631,403**	**1,933,726**

Working capital schedule

TWD million, unless otherwise stated	2020	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E
WORKING CAPITAL SCHEDULE										
ACCOUNTS RECEIVABLE										
Beginning of period		146,038	198,302	231,340	201,938	272,088	341,661	397,145	461,067	536,220
Increases / (decreases)		52,264	33,038	(29,402)	70,150	69,573	55,484	63,921	75,154	88,468
End of period	**146,038**	**198,302**	**231,340**	**201,938**	**272,088**	**341,661**	**397,145**	**461,067**	**536,220**	**624,689**
Days Sales Outstandings	*40 days*	*46 days*	*37 days*	*34 days*	*34 days*	*34 days*	*34 days*	*34 days*	*34 days*	*34 days*
INVENTORIES										
Beginning of period		137,353	193,102	221,149	250,997	287,869	353,239	401,027	454,456	515,602
Increases / (decreases)		55,749	28,047	29,848	36,872	65,370	47,788	53,429	61,146	70,004
End of period	**137,353**	**193,102**	**221,149**	**250,997**	**287,869**	**353,239**	**401,027**	**454,456**	**515,602**	**585,606**
Days Inventory Outstandings	*80 days*	*92 days*	*88 days*	*93 days*	*83 days*	*83 days*	*83 days*	*83 days*	*83 days*	*83 days*
Inventory turnover										
ACCOUNTS PAYABLE										
Beginning of period		198,900	194,465	270,022	228,778	266,862	327,461	371,763	421,293	477,977
Increases / (decreases)		(4,435)	75,557	(41,244)	38,084	60,599	44,301	49,530	56,684	64,895
End of period	**198,900**	**194,465**	**270,022**	**228,778**	**266,862**	**327,461**	**371,763**	**421,293**	**477,977**	**542,872**
Days Payable Outstandings	*116 days*	*92 days*	*108 days*	*85 days*	*77 days*	*77 days*	*77 days*	*77 days*	*77 days*	*77 days*
OTHER WORKING CAPITAL ASSETS										
Other current assets	148,623	150,679	257,594	53,453	106,376	106,376	106,376	106,376	106,376	106,376
Increases / (decreases)		2,056	106,915	(204,141)	52,923	-	-	-	-	-
OTHER WORKING CAPITAL LIABILITIES										
#REF!	197,440	282,933	512,274	506,954	717,386	717,386	717,386	717,386	717,386	717,386
#REF!	2,600	4,567	19,314	9,293	59,858	59,858	59,858	59,858	59,858	59,858
Increases / (decreases)		87,460	244,088	(15,341)	260,997	-	-	-	-	-
Net Working Capital		**60,118**	**(91,527)**	**(238,637)**	**(377,773)**	**(303,430)**	**(244,458)**	**(176,638)**	**(97,022)**	**(3,445)**
Decreases / (Increases) in working capital assets		(110,069)	(168,000)	203,695	(159,945)	(134,943)	(103,273)	(117,350)	(136,300)	(158,472)
Increases / (Decreases) in working capital liabilities		83,025	319,645	(56,585)	299,081	60,599	44,301	49,530	56,684	64,895
Δ Net Working Capital		**(27,044)**	**151,645**	**147,110**	**139,136**	**(74,343)**	**(58,972)**	**(67,820)**	**(79,616)**	**(93,577)**

PP&E and other non-current assets

TWD million, unless otherwise stated	2020	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E
PROPERTY, PLANT & EQUIPMENT										
Beginning of period		1,555,589	1,975,119	2,693,837	3,064,475	3,234,980	3,540,657	3,943,113	4,446,271	5,061,392
(+) Capital expenditures (PP&E)		822,461	1,132,313	870,939	796,252	999,854	1,162,227	1,349,290	1,569,223	1,828,122
(-) Depreciation related to PP&E	(313,380)	(402,931)	(413,595)	(500,301)	(625,747)	(694,177)	(759,771)	(846,132)	(954,102)	(1,086,097)
End of period	**1,555,589**	**1,975,119**	**2,693,837**	**3,064,475**	**3,234,980**	**3,540,657**	**3,943,113**	**4,446,271**	**5,061,392**	**5,803,417**
Capex related to PP&E as a % of revenue		*51.81%*	*50.02%*	*40.29%*	*27.51%*	*27.51%*	*27.51%*	*27.51%*	*27.51%*	*27.51%*
Depreciation as a % of BoP PP&E		*25.90%*	*20.94%*	*18.57%*	*20.42%*	*21.46%*	*21.46%*	*21.46%*	*21.46%*	*21.46%*
RIGHT-OF-USE, INTANGIBLE AND OTHER NON-CURRENT ASSETS										
Beginning of period		85,209	113,927	149,117	144,421	219,566	272,830	333,631	403,150	483,044
(+) Increase in Right-of-use, Intangible and Other Non-current Assets		37,425	43,291	4,502	84,274	67,144	78,047	90,609	105,379	122,765
(-) Amortization	(7,048)	(8,707)	(8,101)	(9,198)	(9,129)	(13,880)	(17,247)	(21,090)	(25,485)	(30,535)
End of period	**85,209**	**113,927**	**149,117**	**144,421**	**219,566**	**272,830**	**333,631**	**403,150**	**483,044**	**575,273**
Increase as a % of revenue		*2.4%*	*1.9%*	*0.2%*	*2.9%*	*1.85%*	*1.85%*	*1.85%*	*1.85%*	*1.85%*
Amortization as a % of BoP		*10.22%*	*7.11%*	*6.17%*	*6.32%*	*6.32%*	*6.32%*	*6.32%*	*6.32%*	*6.32%*

Retained earnings, dividends & interest

TWD million, unless otherwise stated	2020	2021	2022	2023	2024	2025E	2026E	2027E	2028E	2029E
RETAINED EARNINGS										
Beginning of period		1,235,280	1,536,378	2,323,224	2,846,884	3,606,105	4,521,026	5,665,786	6,972,773	8,537,643
(+) Net income		597,073	1,016,901	837,768	1,172,432	1,434,785	1,706,008	2,025,304	2,406,033	2,861,556
(-) Dividends		(295,975)	(230,055)	(314,108)	(413,211)	(519,864)	(561,248)	(718,317)	(841,163)	(998,389)
End of period	**1,235,280**	**1,536,378**	**2,323,224**	**2,846,884**	**3,606,105**	**4,521,026**	**5,665,786**	**6,972,773**	**8,537,643**	**10,400,810**
DIVIDENDS										
Net income		597,073	1,016,901	837,768	1,172,432	1,434,785	1,706,008	2,025,304	2,406,033	2,861,556
Dividends payout		50%	23%	37%	35%	36%	33%	35%	35%	35%
Dividends paid		**295,975**	**230,055**	**314,108**	**413,211**	**519,864**	**561,248**	**718,317**	**841,163**	**998,389**
INTEREST EXPENSE AND INTEREST INCOME										
Total interest expense (from I/S)						22,431	29,656	38,994	48,991	60,845
BONDS PAYBLE										
End of period balance (from B/S)						926,604	926,604	926,604	926,604	926,604
Weighted average interest rate						1.5%	1.5%	1.5%	1.5%	1.5%
Interest expense						**13,899**	**13,899**	**13,899**	**13,899**	**13,899**
INTEREST RATE ON CASH						1.5%	1.5%	1.5%	1.5%	1.5%
Cash BoP						2,422,019	2,903,656	3,526,188	4,192,676	4,982,916
Interest income						**36,330**	**43,555**	**52,893**	**62,890**	**74,744**

CapEx calendar

	2024E	2025E	2026E	2027E	2028E	2029E
SPEND & BREAKS						
Schedule Guidance Investment (Bn US$)	8.24	7.4	7.5	4.7	0.55	0
Schedule Guidance Investment (Bn TWD)	247200	222000	225000	141000	16500	0
Total SPEND (TWD Mn)	575700	570600	446400	366600	135000	0
US – Phoenix (Fabs 1-3)						
Fab 1	3.77	0	0	0	0	0
Fab 2	6.23	8.32	5.88	4.11	2.33	0
Fab 3	4.19	3.7	2	2.11	2.17	0
JP – Kumamoto (JASM I & II)						
Fab 1	1	0	0	0	0	0
Fab 2	3	4	4	3	0	0
Fab 2 Rampup						
Dresden						
Fab 1	1	3	3	3	0	0
Fab 1 Rampup						
Total BENEFIT (TWD Mn)	328500	348600	221400	225600	118500	0
Grant (5 parcels)	1.66	2.5	2.5	2.5	2.44	0
TBILL Loan (10Y)	2.19	3.32	0	0	0	0
Investment Tax Credit (25% Cashback on base)	5	2.7	1.88	2.22	1.51	0
JP – Kumamoto (JASM I & II)						
Subsidy	1.6	1.6	1.5	1.3	0	0
Dresden						
Subsidy	0.5	1.5	1.5	1.5	0	0

DCF 1

Terminal value - growth in perpetuity approach	
Long term growth rate	6.5%
FCF x (1+g)	2,076,277
Terminal value in 2029	51,508,010
Present value of terminal value	34,555,192
Present value of stage 1 cash flows	5,847,976
Total equity value	**40,403,168**
Terminal value as % of equity value	*85.5%*
Stage 1 cash flows as % of equity value	*14.5%*
Implied TV exit P/E multiple	*18.0x*

Terminal value - EBITDA multiple approach	
Terminal year net income	2,861,556
P/E multiple	18.0x
Terminal value in	51,508,010
Present value of terminal value	34,555,192
Present value of stage 1 cash flows	5,847,976
Equity value (stage 1 + 2)	**40,403,168**
Terminal value as % of equity value	*85.5%*
Stage 1 cash flows as % of equity value	14.5%
Implied terminal growth rate	6.5%

DCF 2 (Ke build up)

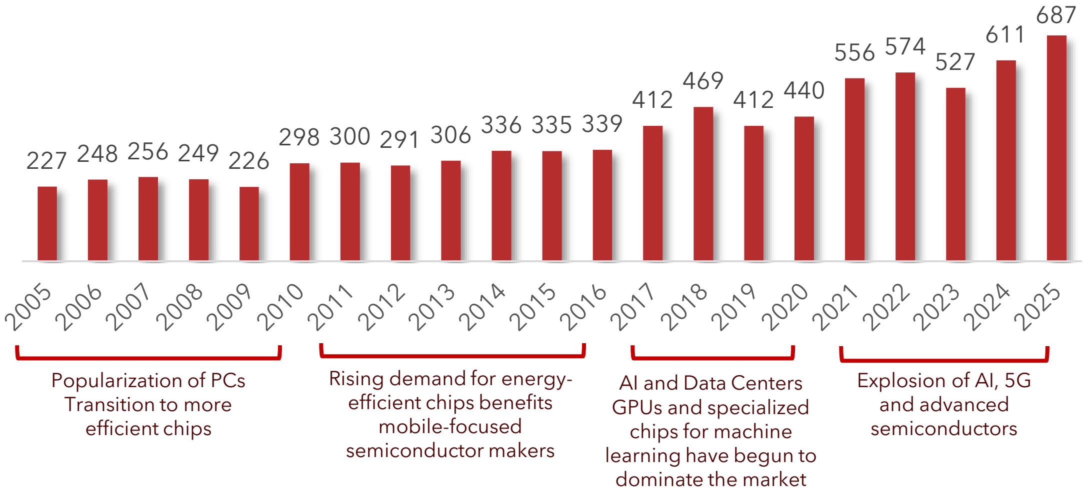
Cost of Equity (Ke) Buildup	
Cost of capital assumptions	
USA CPI	2.80%
Taiwan CPI	2.03%
Avg Historical US 10 Year Treasury	4.30%
Taiwan ERP	5.13%
Risk free rate	4.30%
Equity risk premium	5.13%
Country risk premium	0.80%
Unlevered beta (Semiconductor)	1.03
Levereged beta	1.21
Cost of equity (in USD)	**11.33%**
Inflation difference	-0.83%
Cost of equity (in TWD)	**10.49%**

Evolution of the Global Semiconductor Market

Revenue growth, technology trends and value chain structure

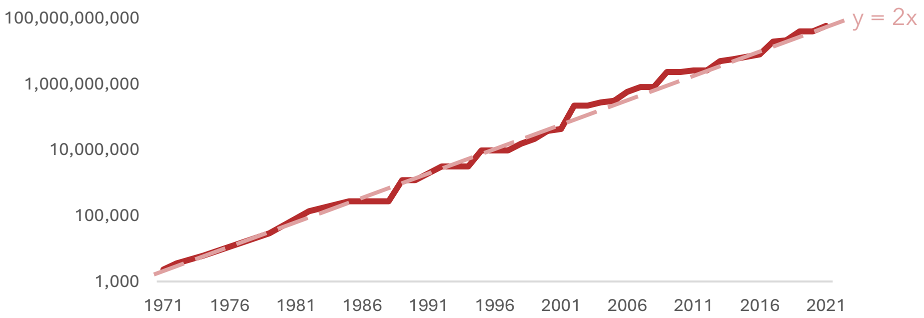
1. Growing Revenue: Semiconductor Market's Upward Trend

Semiconductor market revenue worldwide from 2005 to 2025 (in billions US dollars)

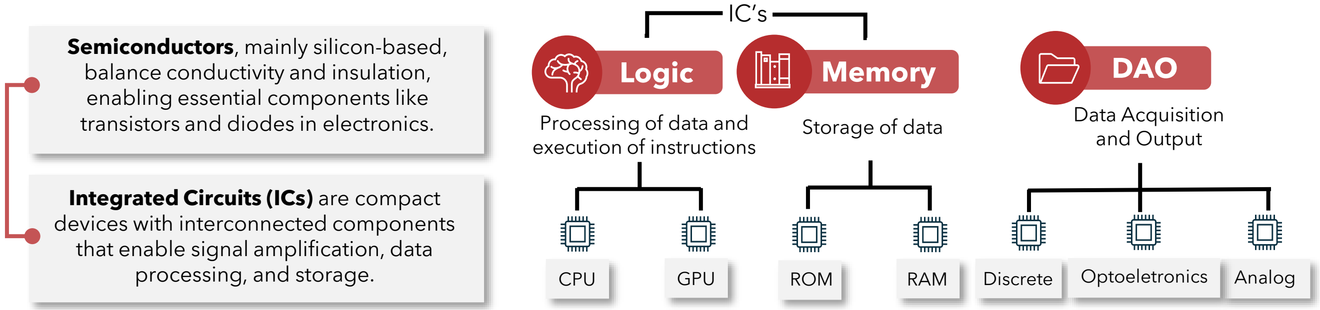


2. Multiplying Transistors: The Evolution of Moore's Law

Transistors per microprocessor during the years

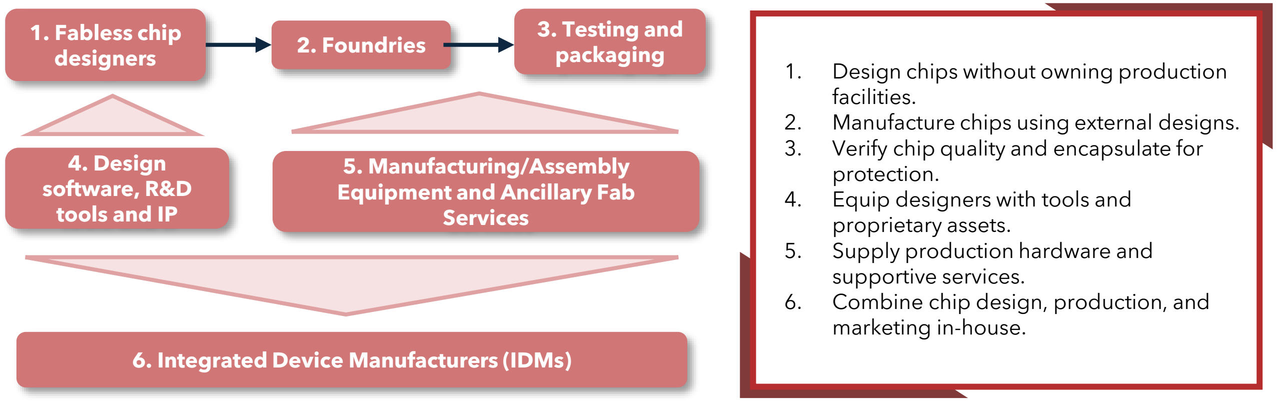


3. Chip Innovations: Uncovering the Technology Behind the Revolution



4. Mapping Semiconductor Value Dynamics

Supply Chain



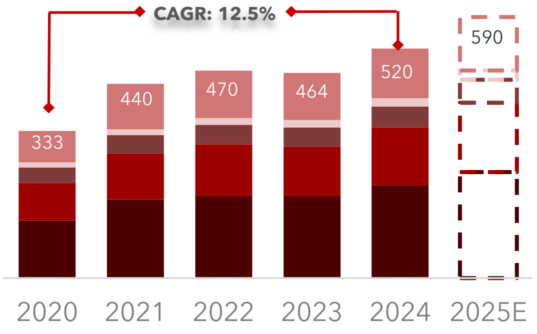
Sources: Statista; Our World in Data

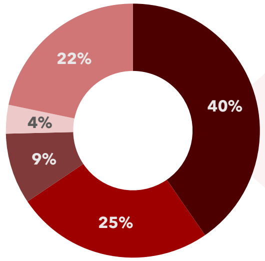
Market Overview – Footprint and Economics

Growth outlook, geographic concentration, margins and capital intensity

1. A Super Cycle takes off, market has grown intensily

Semidconductor Market Size & Segment share (US$ bn,%)



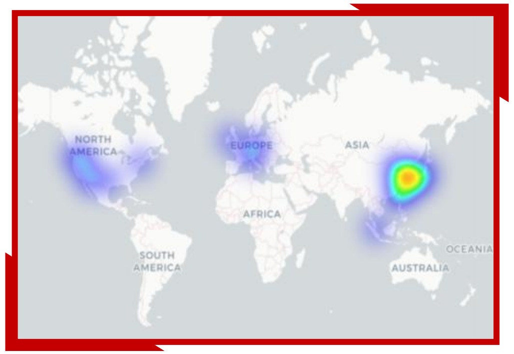


Fables chipmakers now command AI-driven demand pushes fabless share to ~40 % of sector value

Fabless Chip | Foundries | Testing & Packaging | Manufacturing | Designer, R&D, IP

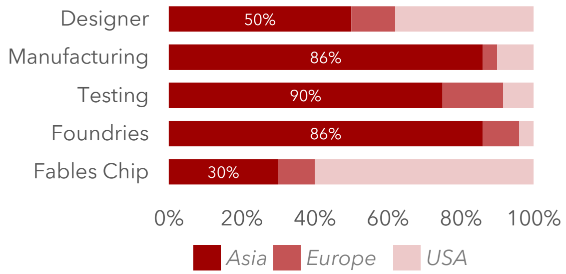
2. Silicon's Center of Gravity, Asia Pulls the Chip Heatmap

Heatmap, Segment concentration per region (%)



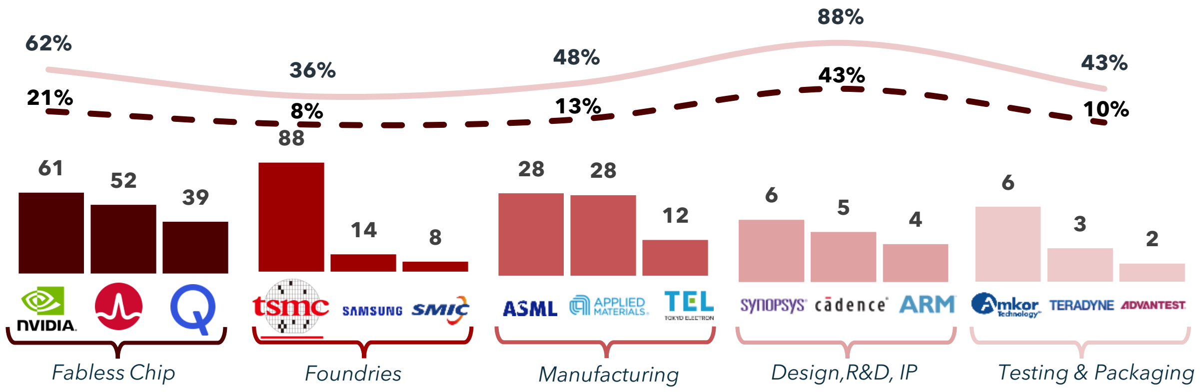
John
Qualcomm CEO

"It is absolutely essential that we maintain access to the Chinese rket; most of the planet's chips are consumed there"



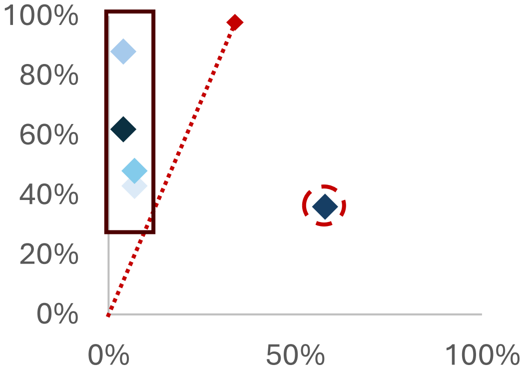
3. Profit Engines, Converting Top-Line into Outsized Margins

Net Revenue, Gross Margin & R&D Margin (US$ bn, %)



4. The Capital Wall

CAPEX/Revenue x Gross Margin per segment (%)



*Foundries fund > 60 % of all semiconductor CAPEX, **pouring US $30-40 bn per year into 5-3 nm fabs**—an immense capital wall that dictates the technology roadmap and secures outsized pricing power.*

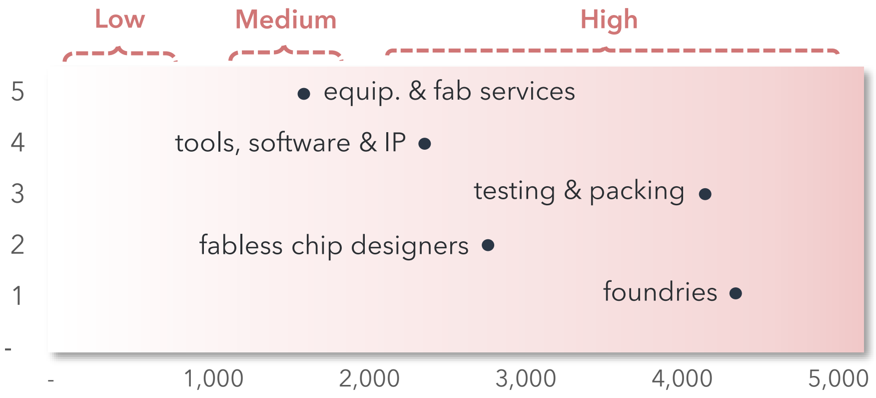
Sources: Companies; Yahoo Finance; Reatures; JPM

A Concentrated Market

Each segment has its own dynamics and its own protagonists. Different positions result in different growth prospects

1. In a concentrated sector, competition is for the few

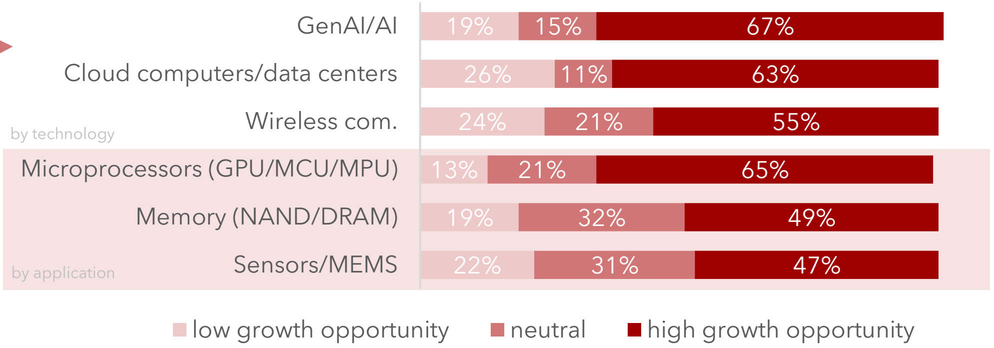
HHI Concentration Index vs number of players 10%+ market share per segment



Few competitors in the same segment often position themselves in **different technologies**. However, **some are more promising than others**

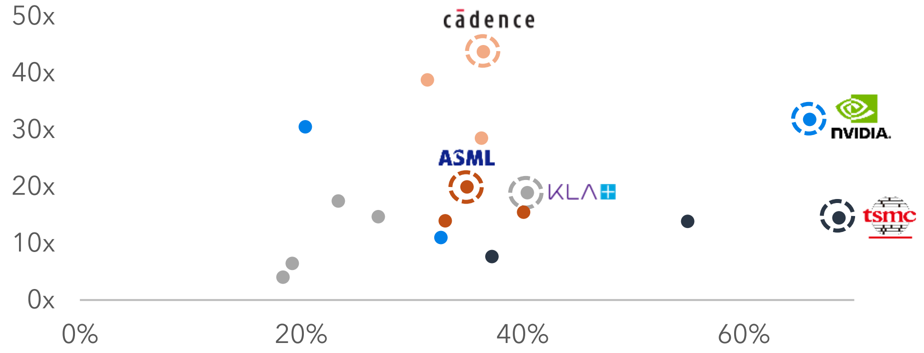
2. Certain technologies present greater opportunity for growth

Growth opportunity by technology and application (KPMG survey with 156 senior executives of major semiconductor companies)



3. Companies positioned in technologies with greater potential have greater growth prospects, in addition to generally achieving better margins within their segment

EBITDA margin (%) vs EV/EBITDA ratio between the main companies



In general, each sector has **clear leaders** when it comes to the **most advanced** and **promising** technologies.

Fabless chip designers
Nvidia as the global leader in GPUs, dominating AI and data centers segments

Tools, software & IP
Cadence as leader of Electronic Design Automation, with Synopsys

Equip. & fab services
ASML as a monopoly in EUV lithography, essential for <7nm node chips

Testing & packing
KLA as a global leader in metrology, inspection and process control

Foundries
TSMC as the absolute leader and monopoly in more advanced nodes

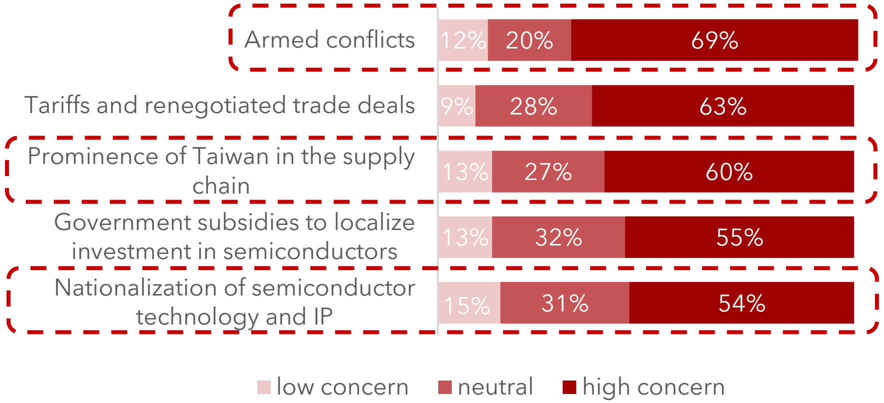
Sources: Investor Relations; Yahoo Finance; KPMG

Industry risks and foundries

Geopolitical risks define the sector. Foundries is the strategic segment with good prospects and multiples

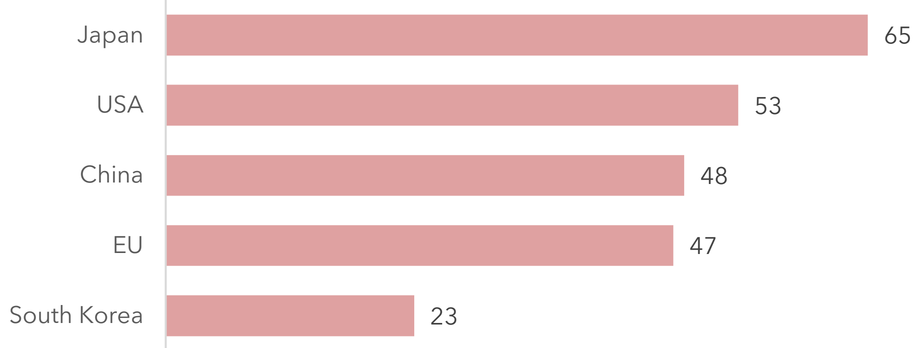
1. Geopolitical risk is clearly the biggest risk in the sector. Attempts to mitigate this risk are changing the dynamics of the sector

Main semiconductor industry risks (KPMG survey)



After COVID hardships, tech powerhouses are focusing on **decentralizing production**

Investments in the decentralization of semiconductor production since 2022 (USD bn)



2. After a thorough analysis, we chose the foundries segment based on 3 main theses:

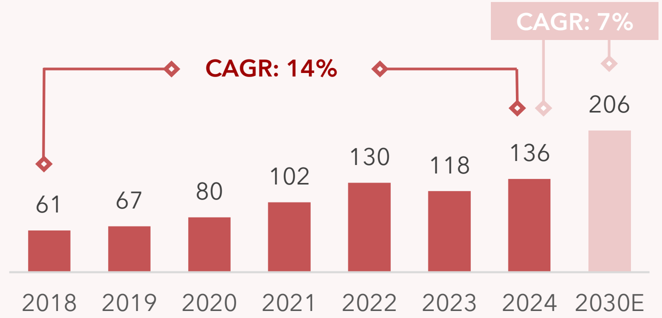
I. Attractive multiples when compared to the growth expectations

II. Consolidated and well-segmented players, with a clear leader to surf the growth of cutting-edge technologies

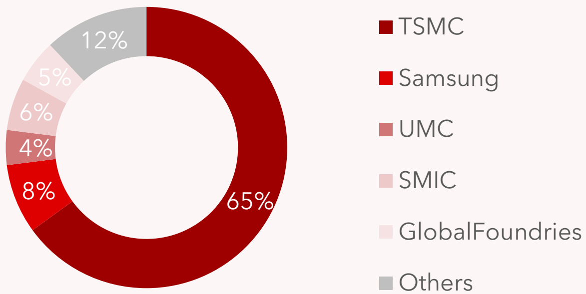
III. Key position in the value chain, with the strongest barriers to entry among all segments

Industry key infos

Foundries industry revenue (USD bn)



Foundries industry market share (%)



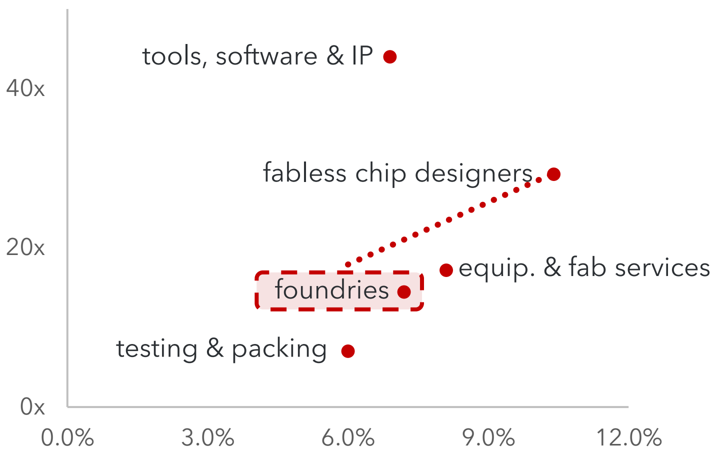
Sources: KPMG; WSJ; Mordor Intelligence

3 main theses justify our choice

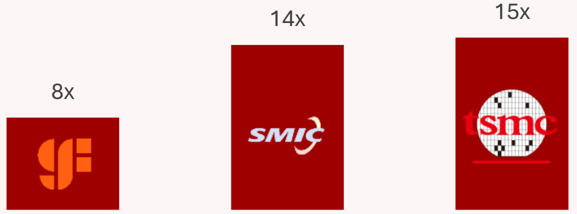
A deeper analysis of the theses

I. Attractive multiples when compared to the growth expectations

Industries top 3 players growth expectation vs EV/EBITDA



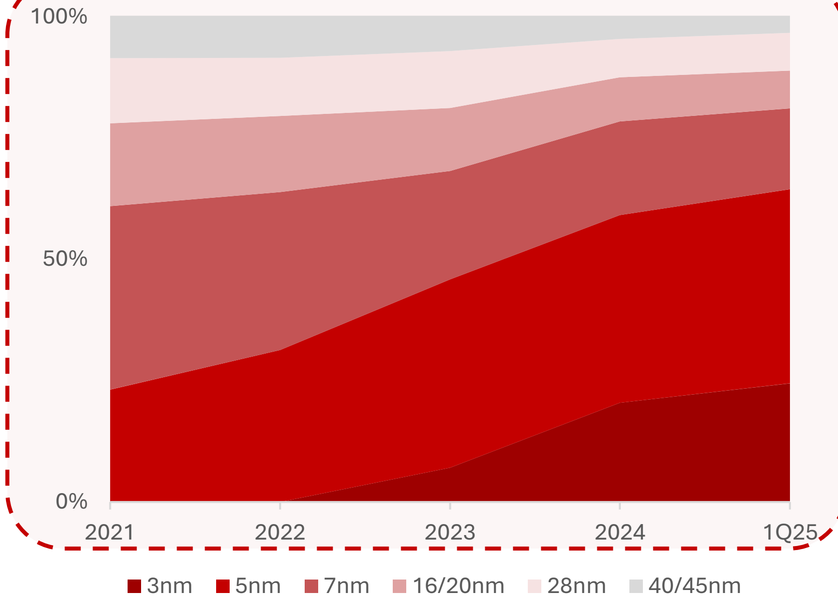
Top 3 foundries companies EV/EBITDA



II. Consolidated and well-segmented players, with a clear leader to surf the growth of cutting-edge technologies

Sub-7 nm nodes now yield almost 75% of TSMC's revenue, confirming its unrivaled grip on the AI/HPC boom.

Revenue percentage per lithography dimension



III. Key position in the value chain, with the strongest barriers to entry among all segments

1. Central Role in Chip Manufacturing
2. Gatekeepers of Advanced Process Nodes
3. Bridge between Design and Production

Economies of scale and costumer relationships

Large foundries have long contracts with giants like Apple, NVIDIA and Qualcomm.

High CAPEX

A single 3nm fab can cost over USD 20 billion.

Advanced Technology and Intellectual Property (IP)

Established companies have critical patents that make it difficult for new players to enter.

Regulatory and Geopolitical Barriers

Technology export restrictions and government policies that favor local players.

Sources: Yahoo Finance, Companies IR