Alex DENG Chang **Advantest Corporation (ATEYY)** **SELL**

Stock Price at 11/10/2024:	$50.30	
52 week Range (€/$):	52.8	23.48
Market Cap (bn $):	$ 35.747	
EV (bn€/$):	$34.350	
Avg. Daily N° shares traded (3M):	122.1K	
Free Float (%)	100%	
Beta (3Y Daily):	1.28	
Rating Agency：Rating and Investment Information, Inc. (R&I)	A+	

Stock Market Ratios	2023A	2024E	2025E
P/E	41.2	32.3	27.6
PEG	1.6	1.9	1.9
EV/EBITDA	18.2	14.2	11.9
Dividend Yield	2.7	5.5	6.5

Profitability factors %	2023A	2024E	2025E
ROA	22%	25%	28%
ROE	45%	48%	49%
ROIC	28%	32%	35%
WACC	13.0%	13.5%	14.0%
Operating Margin	30%	30%	30%
FCF YIELD (FCF/EV)	1.98%	0.09%	1.35%

Solvency Factors	2023A	2024E	2025E
Total Debt/Total Assets	0.39	0.37	0.35
LT Debt/Total Equity	0.63	0.66	0.61
TIE RATIO	197	194	193
OCF/Total Liabilities	0.25	0.82	0.95
FCF/Total Liabilities	37%	53%	61%

Asset Turnover	2023A	2024E	2025E
Acc Receivable turnover	6.1	6.7	7.6
Days Receivable Held	50.0	41.7	36.7
Inventory Turnover	1.8	1.7	2.0
Days Inventory held	192.1	160.6	141.4
Acc. Payable Turnover	2.7	3.2	3.7
Days Payable Held	101.4	84.8	74.7
Networking Capital Days	140.7	117.5	103.5
Cash turnover	6.5	7.8	8.9
DOS Held in Cash	55.7	46.5	41.0

Liquidity Ratio	2023A	2024E	2025E
Current Ratio	2.14	2.14	2.14
Quick Ratio	1.07	1.07	1.07
OCF to Current Liability	0.33	1.08	1.26

CAGR	15Y	10Y	5Y
Revenues	14.2%	17.5%	14.7%
Net Profit	-204%	-209%	18.0%

Current Stock Price: $50.3 Target Stock Price: $45.62

Reason to SELL Advantest Corporation:

- The stock price has reached a historical high and is currently 10% above our target price.
- The market size for semiconductor testing is expected to decline in the coming years.
- The level of competition in the industry is anticipated to intensify in the future.
- The company faces vulnerabilities when facing geopolitical events, mainly due to its limited diversification in both product and geographical segments.

Company's Core Competences

- Advantest holds a dominant market share in the semiconductor testing industry, fostering a stable and robust relationship with both customers and suppliers.
- However, the entry of new players into the market in the future may disrupt the current position of Advantest, potentially leading to a decline in its competitive advantage.

Corporate Growth History

- Over the past five years, Advantest has experienced significant financial growth, with a substantial increase in revenue of 14.7% and net profit of 18%. This performance shows the company's resilience and adaptability in a dynamic market environment.
- Furthermore, during the COVID-19 pandemic, Advantest's robust capital structure ensured that it avoided any debt-related challenges. This internal stability has contributed to the company's overall success.

Key Risk factors (Macro and Micro)

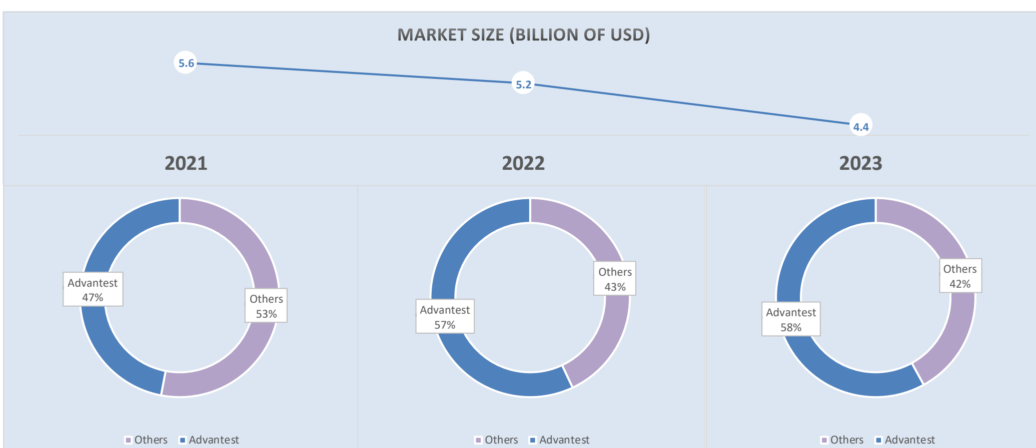
- Advantest's business is exposed to various risks, including global economic downturn, trade tensions and tariffs, exchange rate fluctuations, increased competition, lack of revenue diversification, and stagnant innovation. These risks threaten the company's financial performance and ability to grow despite its historical success in the semiconductor testing industry.

1. Revenues: FORECAST DEVELOPMENT TABLE OF SEGMENTS

Year	Actuals			Forecasts				
	2021	2022	2023	Year +1	Year +2	Year +3	Year +4	Year +5
Net Revenues (in millions):								
Asia	¥ 274,623	¥ 385,071	¥ 499,981	¥ 599,977	¥ 689,974	¥ 772,771	¥ 826,865	¥ 868,208
Americas	¥ 30,164	¥ 20,250	¥ 42,882	¥ 68,611	¥ 89,195	¥ 115,953	¥ 144,941	¥ 172,480
Europe	¥ 8,002	¥ 11,580	¥ 17,328	¥ 22,526	¥ 28,834	¥ 36,042	¥ 45,053	¥ 53,162
Total Net Revenues	¥ 312,789	¥ 416,901	¥ 560,191	¥ 691,115	¥ 808,002	¥ 924,766	¥1,016,859	¥1,093,850
rates of change		33%	34%	23%	17%	14%	10%	8%

Over the past three years, this company has experienced significant growth in its revenue, primarily driven by its involvement in the semiconductor industry. The company's core business involves manufacturing testing equipment for semiconductor chips. These machines are essential for ensuring the functionality of the final products of microchips, a crucial process for semiconductor factories such as TSMC. At the same time, China has emerged as a significant player in the semiconductor industry. Because in recent years, driven by national conflicts and security concerns, China has sought to enhance its domestic semiconductor capabilities and independence. Showing on the company's presentation, the majority of its revenue growth can be attributed to the Chinese market.

In the American and European markets, this company shows significant potential for growth. However, when compared to the Asian market, which encompasses Japan, Taiwan, and China, the American and European markets remain secondary sources of revenue for this company.



As we progress to the five-year revenue forecast for this company, the outlook is not as promising as the past three years. Firstly, we can observe that the company has already established itself as a leader in this niche market, dominating 58% of the market share. Additionally, another significant player holds approximately 40% of the market share, while the remaining 5% is shared by numerous smaller companies. Typically, when a market experiences a situation with two dominant players, they will likely attempt to beat each other by setting a war price, which will result in a substantial decline in revenue. Additionally, it is important to consider that the market size of the semiconductor testing industry has been declining since 2022. As evident from the above charts, Advantest's market share has only increased by 1% from 2022 to 2023. Maintaining such a high growth rate as in previous years is becoming increasingly challenging. Therefore, we have adjusted our revenue growth expectations for Advantest accordingly.

Furthermore, considering the decline in the current trend of AI (which requires a significant amount of computation power from the microchip), there will be a reduction in the inflow of money in the semiconductor industry. Consequently, the need of testing equipment of semiconductor is also anticipated to decrease. The sole uncertainty surrounding this company is about the Chinese government's determination to improve their independence in semiconductor industry. However, it is important to note that China itself is also experiencing pressure related to either reception or deflation. Therefore, we can reasonably assume that for the Chinese government there will not be a significant increase in investment in the semiconductor industry.

2. Cost variable and fixed year 1-5

INCOME STATEMENT	Actuals			Forecasts					
Year YAN in million:	2021	2022	2023	2024	2025	2026	2027	2028	CAGR
Revenues	312,789	416,901	560,191	691,115	808,002	924,766	1,016,859	1,093,850	
<COGS>	-144,498	-180,994	-241,130	-297,179	-347,441	-397,649	-437,249	-470,356	
Gross Profit	**168,291**	**235,907**	**319,061**	**393,935**	**460,561**	**527,117**	**579,609**	**623,495**	**21%**
Operating expence	-97,565	-121,173	-151,374	-185,910	-217,353	-248,762	-273,535	-294,246	
EBIT	**70,726**	**114,734**	**167,687**	**208,026**	**243,209**	**278,355**	**306,074**	**329,249**	**25%**
Interest income	767	1,912	4,458	868	894	921	949	977	
Interest expence	-1,875	-303	-875	-1,079	-1,262	-1,444	-1,588	-1,709	
EBT	**69,618**	**116,343**	**171,270**	**207,814**	**242,841**	**277,831**	**305,435**	**328,517**	**25%**
Income TAX	169	-29,042	-40,870	-43,641	-50,997	-58,345	-64,141	-68,989	
Net Income	**69,787**	**87,301**	**130,400**	**164,173**	**191,844**	**219,487**	**241,294**	**259,529**	**21%**

Over the past three years, the company's cost structure has been stable. The cost of goods has remained relatively unchanged since 2022, accounting for approximately 43% of its revenue. Consequently, the company anticipates maintaining this level of cost of goods sold in the upcoming five years. Notably, the company does not rely on natural resources such as minerals or oil gas for its raw materials, which mitigates the potential impact of global market fluctuations on its production costs. So, the gross profits of the company are expected to remain stable. This is because we anticipate that in the future, there will not be significant technological breakthroughs that will enable the cost of goods sold to decrease.

In addition to the cost structure, it is important to note that for this company, a significant portion of its costs of goods sold were incurred domestically. This means that they are mainly use Japanese Yen to purchase equipment, while simultaneously, most of their revenue was generated from overseas sources, resulting in the collection of US dollars. Therefore, when presenting the company's results in the reports, it is evident that the depreciation of the yen will have a favorable impact on their financial performance. Consequently, when making future financial forecasts, it is important to assume that the Yen will continue to depreciate against the US dollar. This implies that the actual cost of the company may be higher than the figures presented in the report. This is because the revenue figures in the financial statements are inflated due to the depreciation of the yen (as the currency used in the financial statements is the Yen).

Regrettably, it is not possible to accurately quantify the extent to which these costs were underestimated as a result of the depreciation of the Yan and also for their revenue.

3. M&A activities:

Over the past five years, Advantest has engaged in four major mergers and acquisitions (M&As). The acquired companies include Astronics Corporation (2018), Essai, Inc. (2020), R&D Altanova (2021), and CREA (2022).

The primary objective of these M&As is to enhance Advantest’s position in the semiconductor testing industry. The acquired companies are closely aligned with Advantest’s core business, providing the company with a technological advantage over competitors.

Among the various M&A activities, the acquisition of CREA in 2022 stands out as a significant milestone. This acquisition has the potential to expand Advantest’s test and measurement solutions for high-growth sectors, such as electric vehicles and energy-efficient data centers. These sectors are currently experiencing significant market growth, making this acquisition a strategic move for Advantest.

4. Debt structure

	Carrying amount	Contractual cash flow	Due within 1 year	Due after 1 year through 2 years	Due after 2 years through 3 years	Due after 3 years through 4 years	Due after 4 years through 5 years	Due after 5 years
Non-derivative financial liabilities								
Trade and other payables	89,262	89,262	89,262	0	0	0	0	0
Trade and other payables Borrowings	33,357	34,225	14,138	44	20043	0	0	0
Lease liabilities	17,487	18,536	4,803	4511	3922	2641	2633	26
Other financial liabilities	4,903	4,903	4,903	0	0	0	0	0
Total	145,009	146,926	113,106	4,555	23,965	2,641	2,633	26
Derivative financial liabilities								
Cross-currency rate swap	432	432	0	0	432	0	0	0
Total	432	432	0	0	432	0	0	0

As a result of the disparity between US-GAAP and J-GAAP, the debt structure of Advantest can only be presented in this manner, rendering it difficult to ascertain the interest rates on all of its debts. Fortunately, as evident from the table, the majority of the company's debt is maturing within one year, indicating that it does not face liquidity challenges in managing these obligations.

Furthermore, the table presents the TIE ratio, which has consistently exceeded 100 since 2022. This suggests that the company has sufficient cash and liquidity reserves to address any potential future situations.

Additionally, Advantest shows characteristics of a typical technology company, characterized by sufficient cash flow, which reduces its reliance on substantial borrowing to finance its daily operations. While this capital structure offers advantages such as low interest expense, It has also been observed that a low reliance on financial leverage can impede a company's development.

Overall, the capital structure of Advantest appears to be sustainable.

TIE RATIO		
Year	Ratio	Rating (Only based on TIE Ratio
2021	38.1	AAA
2022	385.0	AAA
2023	196.7	AAA
2024	193.5	AAA
2025	193.4	AAA

Rating Agency: Rating and Investment Information, Inc. (R&I)	
Time	**Rating**
9-Apr-24	A+
6-Apr-23	A+
6-Apr-22	A+
23-Apr-21	A
22-Apr-20	A

Furthermore, a Japanese rating agency (Rating and Investment Information, Inc.) based on the company's performance and look over crucial criteria and business risk. For five consecutive years, the agency awarded the company a favorable rating with a stable outlook. This assessment clearly indicates that the company is having a balance on debt and capital structure.

	Advantest	Competitors				
		Teradyne, Inc.	Cohu, Inc	YIK Corp.	UniTest Inc	EXICON Ltd
Debt to Equity	0.21	0.03	0.04	0.28	0.39	0.1
TIE Ratio	197	13724	1503	9	5	28251051

In this table, it is evident that there are two distinct capital structures in this niche market of semiconductor industry.

In the first type of capital structure, we have Advantest, YIK Crop, and UniTest. These companies utilize debt to enhance their development. However, it is noteworthy that Advantest stands out with a robust interest coverage ability compare with other two. When we are looking at its competitors, we can see that they don't have the same situation. The TIE ratio for these competitors remains below 10, it will not be a favorable situation for all the rating agencies. This disparity can be attributed to the early stage of business for YIK Crop and UniTest, which has resulted in limited profitability. In response, these companies have attracted debt investors to fuel their growth. Consequently, Advantest's financial position appears superior to that of its competitors. Not only does it have a larger business, but it also maintains a stable financial standing.

The second type of capital structure involves refraining from utilizing debt to boost a company's growth. In this scenario, it is clear that these companies show a significantly higher TIE ratio. However, this does not necessarily imply that companies with a higher TIE ratio perform better than those with a lower TIE ratio, as exemplified by Advantest. The TIE ratio solely reflects the impact of capital structure on a company's financial position. Given the specialized nature of the technology industry (where most companies have limited debt), it becomes challenging to obtain comprehensive information about a company's financial health based solely on its debt structure.

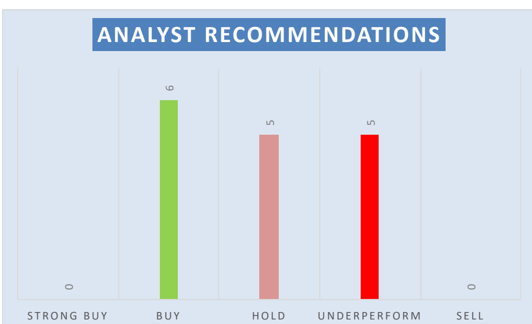
5. Intrinsic valuation

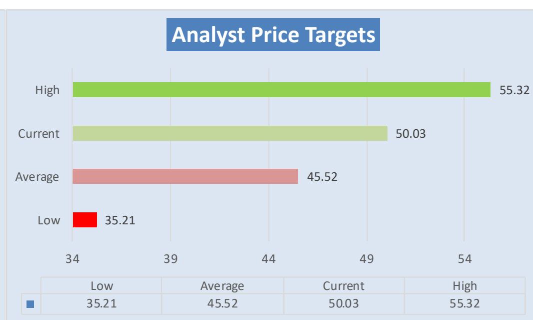
Calculation of the WACC	2023
E	33279
D	7321
V	40600
Re	15.57%
Rd	2%
Tc	30.62%
WACC	13.01%

Year	Cost of Equity (%)	WACC (%)
2018	14.2	10.5
2019	13.8	10.7
2020	14.5	11
2021	15	12.2
2022	14.8	12.8
2023	15.57	13.01

Over the past six years, Advantest's weighted average cost of capital has remained relatively stable, fluctuating from 10.5% to 13.01%. However, it is important to note that this increase occurred during a period when market interest rates were also rising. Therefore, maintaining such a low WACC has not been easy for the company.

As previously discussed in the debt structure section, Advantest did not face substantial debt-related pressures. Additionally, the company's overall cost of capital was relatively low, indicating that there were no major financial issues internally.





Within 16 analyst shows on Yahoo Finance, six recommended buy, ten held or underperformed, and none recommended selling. Therefore, for those analysts, the stock of Advanstest remains a worthwhile investment. However, it is important to note that the stock price when these analysts made their recommendations was approximately $35 to $40. This price range is generally considered attractive for most investors.

But now the situation has changed. The stock price of Advantest has already increased to $50, surpassing the average target price set by the analysts by 10%. Furthermore, considering the analysis conducted in previous sections of this report, we can conclude that it is an optimal time to sell the stock of Advantest.

6. Relative valuation

Competitors	Advantest	Competitors				
		Teradyne, Inc.	Cohu, Inc	YIK Corp.	UniTest Inc	EXICON Ltd
Market Cap (intraday)	35747	21050	1155	764	146	118
Enterprise Value	34350	20670	905	719	135	114
Trailing P/E	66.32	42.43	56.49	73.91	50.18	106.96
Price/Sales (ttm)	9.5	7.78	2.32	4.94	2.32	3.1
Price/Book (mrq)	10.87	7.71	1.28	3.15	1.51	1.07
Enterprise Value/Revenue	9.64	7.64	1.81	4.64	2.15	3.56
Enterprise Value/EBITDA	39.42	29.75	29.23	33.39	-16.32	78.22
Beta (5Y Monthly)	1	1.49	1.53	1.37	1.32	1.18
52-Week Change [3]	26.51	82.13	13.8	14.7	12	18
Forward Annual Dividend Yield [4]	0.47%	0.37%	0.00%	0.00%	0.00%	0.00%
Trailing Annual Dividend Yield [3]	0.45%	0.36%	0.00%	0.00%	0.00%	0.00%
Payout Ratio [4]	32.54%	15.13%	0.00%	0.00%	0.00%	0.00%
Interest coverage ratio	197	13724	1503	9	5	28251051
Debt to Equity (net debt/total equity%)	21.07%	2.94%	3.82%	27.61%	38.62%	9.75%

Upon analyzing the overall market situation, it is evident that the market is dominated by two primary players: Advantest and Teradyne. Consequently, our upcoming analysis will primarily focus on these two entities.

As observed in the table, the market shows a preference for Advantest over its closest competitor. Notably, all ratios related to its share price are higher compared to its competitor, and its stock price experiences less volatility.

When examining the dividend policies of these companies, we can discern that Advantest pays a higher dividend than its largest competitor. Furthermore, Advantest boasts a higher dividend yield and payout ratio, indicating that it is a more mature company than Teradyne. This is because a company's ability to pay dividends consistently signifies a strong and stable net income, which serves as the foundation for dividends. This is consistent with the smaller companies within this market, as they do not pay dividends at all. This is because they cannot even achieve a positive net income in the end of their income statements.

In conclusion, although compared to its largest competitor, Advantest appears to be slightly overvalued. However, considering that it is the dominant player in the market, this level of primacy is acceptable.

7. PORTER ANALYSIS

1.Rivalry among existing firms

Historically, the semiconductor testing market has not been characterized by intense competition and in recent years, the market size has experienced significant growth, leading to the emergence of two major players: Advantest and Teradyne.

Advantest has achieved substantial market dominance, accounting for approximately 60% of the market share. Teradyne holds the remaining 35%, with smaller companies collectively occupying the remaining 5%.

While Advantest's success is undeniable as the largest player in the market, its closest competitor, Teradyne, presents potential challenges that Advantest must address.

Advantest's reliance on the semiconductor testing business is a significant concern. Nearly 70% of its revenue is derived from this sector, with an additional 30% closely related to it (services, support, etc.). Consequently, any decline in the market size of semiconductor testing could have a substantial impact on Advantest's revenue.

In contrast, Teradyne's revenue composition is more diversified. While semiconductor testing accounts for nearly 70% of its revenue, the remaining 30% includes robotics (14%), system testing (13%), and wireless testing (5.39%). This diversification provides Teradyne with greater resilience to market fluctuations.

Secondly, it is noteworthy that the majority of income of Advantest originates from Asia, which is a reasonable expectation considering that it is a Japanese company and Asia is the center of semiconductor manufacturing. However, it is well-known that any adverse event in Asia (such as a war between China and Taiwan, or tensions between North and South Korea) can have a significant impact on its business. In contrast, when examining Teradyne's situation, we observe a different narrative. Teradyne's income sources are geographically diversified, with 16% from the United States, 15% from Korea, 14.38% from Taiwan, and 11.77% from China. This demonstrates a better resilience in its income streams.

In conclusion, Advantest is performing well in the current market. However, it is necessary to acknowledge the potential risks associated with analyzing its competitors.

2.Threat of New Entrants

In the semiconductor testing market, the threat of new entrants is moderate. While it requires substantial technological accumulation, it is not comparable to the manufacturing process of semiconductors. Consequently, numerous technology companies are eager to participate in this market.

Upon the entry of new players, the primary objective is to find a way to avoid existing barriers or innovate independently. For Advantest, the most crucial aspect is ensuring the preservation of its long-term market advantage and reputation. It is noteworthy that several Chinese companies are also interested in entering this market. As discussed in the initial section, China aims to enhance its independence in the entire semiconductor supply chain, and Advantest's Chinese market holds a significant share of its revenue. Therefore, Advantest must be prepared for the potential replacement of some of its entry-level products by emerging Chinese companies. Additionally, it is important to recognize that Chinese companies excel in producing low-cost products with quite good performance.

3. Threat of Substitutes

The threat of substitutes in this industry is low. All microchips must undergo testing, so it is unlikely that there will be a new method to avoid any kind of test.

4. Bargaining Power of Buyers

The bargaining power of buyers for Advantest is moderate to low. In this industry, most business partners are long-term, as price is not their primary concern. What they prioritize is stability and quality. Consequently, finding another partner or incurring switching costs will be high for buyers in this sector. As long as Advantest can offer a high-quality product at a reasonable price, buyers won't be able to reduce their demands.

5. Bargaining power of suppliers

The bargaining power of suppliers is moderate. This is similar to the situation with buyers, as most of the materials are specialized, and suppliers have some influence due to their control over the technical details of the materials. However, it is important to note that Advantest is likely their largest customer, so both parties have an incentive to establish a win-win situation. For a company like Advantest, having multiple suppliers is crucial to ensure that its production is not disrupted by external factors.

8. Industry Analysis

Trade organization forecast

According to the TechInsights report, Market Insights global outlook report, Deloitte, and Advantest themselves, the overall market size of the semiconductor industry is projected to continue growing at a compound annual growth rate (CAGR) of approximately 7 to 9% until 2026.

However, it is important to note that the growth rate is not as rapid as it was during the pre-pandemic period. Consequently, we can predict that the growth rate of the semiconductor testing industry will also face a more gradual decline in the coming years. This is because testing equipment is indeed a necessary component of the industry, but it is not a key material. Unlike silicon or other chemical materials, which are seasonal and rapidly consumed products, testing equipment from Advantest is typically considered a long-term asset. Therefore, most companies will only increase their purchases of testing equipment when expanding their business. When the overall industry growth rate decreases, companies like Advantest will be more affected than others. This is consistent with the annual report of Advantest, which also predicts a decline in the market size of the semiconductor testing industry in the upcoming years.

General trends of the industry

When discussing the technology industry, particularly in the context of chips, two terms that cannot be avoided are artificial intelligence (AI) and 5G. Therefore, in the upcoming section, we will primarily focus on these two technologies.

All AI software currently in use requires a substantial amount of computing power, or more simply, a high-performance graphics processing unit (GPU). Consequently, NVIDIA has emerged as the most significant beneficiary of the AI trend. This is because NVIDIA is the sole supplier of GPUs at present. However, Advantest, despite its strong relationship with the chip industries, does not directly benefit from this AI trend. This is because the nature of their business remains unchanged. They primarily serve as a testing company, and the specific chips tested on Advantest's equipment are inconsequential.

As a result, when major chip manufacturers capching substantial profits from the AI trend, Advantest lacks significant developments. Consequently, despite the overall industry experiencing substantial change and promising future prospects, Advantest's business structure poses challenges in reaping the benefits of these changes.

Similarly, in the 5G context, it is unlikely that a single application will revolutionize the industry. Therefore, the business structure of Advantest will remain largely unaffected by 5G.

9. Guidance Quarterly and Full Year

Quarterly Guidance	2Q23	3Q23	4Q23	1Q24
Revenue	116.3	133.3	135.8	138.7
Estimate diluted EPS	29.5	23.73	21.67	26.93
Actual diluted EPS	12.49	22.69	28.65	20.62
Beat or Miss	Miss	Miss	Beat	Miss

In the most recent four quarters, Advantest missed three of its estimated EPS, indicating that the company's performance has deviated from its anticipated trajectory. We attribute this deviation primarily to the prevailing market conditions and competitive landscape, as discussed in sections 7 and 8. Despite acknowledging the market's transformation, Advantest failed to adequately anticipate the extent of this change. As analyzed in section 7, it proved challenging for the company to generate substantial revenue from its existing testing market, necessitating the implementation of a diversification strategy.

10. Snapshot of latest quarterly result AND next quarter expectations

Quarterly	1Q2023	1Q2024	2Q2024 (estimated)
Total Revenue	101.3	138.7	119.1
Operating income	14.4	31.3	21
Diluted EPS	12.48	20.62	18.63

As we can see from the table, Advantest's profitability has been experiencing an upward trend from 2023 to 2024. However, it is important to note that the market size is expected to decline in the future. Consequently, the analysis provided by Yahoo Finance projects a lower growth expectation for Advantest in the coming years.

11. RISK PARAGRAPH MACRO AND COMPANY SPECIFIC RISK

Marco Risk

Advantest's business is expected to identify emerging risks. Firstly, there is the global economic downturn. Even three years after the pandemic, the world continues to be severely affected by its aftermath. We cannot guarantee that future economic growth opportunities will be available. It also represents the risk of downsizing of the overall market size of semiconductor testing industry. Secondly, there is trade tension and tariffs. As we know, most of Advantest's business is conducted in Asia. However, in the coming years, we cannot predict the future of Asia. Any minor tensions could significantly impact Advantest's business. Lastly, there is exchange rate risk. As we have seen in the previous section, Advantest has actually benefited from the depreciation of the YEN. Therefore, when the depreciation phase ends, it will have a significant negative impact on Advantest's financial performance as reflected in its report.

Specific Risks

Advantest faces several specific risks. Firstly, it may encounter increased competition in the market. As evident from the Porter's Five Forces analysis, the market is characterized by only two major players, and its size is declining. This situation poses a challenge in identifying alternative revenue growth opportunities. Secondly, the company's revenue structure lacks diversification. A significant portion of its income originates from the semiconductor testing business. Any fluctuations in this segment can have a substantial impact on the entire organization. Lastly, the company faces a lack of innovation. The success of Advantest hinges on its ability to innovate within the testing industry. However, it has been a considerable period since the introduction of a completely novel product to the market. Consequently, it lacks the capacity to discover new growth avenues and diversify its revenue streams.

12. APPENDIX

12a. INCOME STATEMENT

INCOME STATEMENT		Actuals				Forecasts			
Year YAN in million:	2021	2022	2023	2024	2025	2026	2027	2028	CAGR
Revenues	312,789	416,901	560,191	691,115	808,002	924,766	1,016,859	1,093,850	
<COGS>	-144,498	-180,994	-241,130	-297,179	-347,441	-397,649	-437,249	-470,356	
Gross Profit	**168,291**	**235,907**	**319,061**	**393,935**	**460,561**	**527,117**	**579,609**	**623,495**	**21%**
Operating expence	-97,565	-121,173	-151,374	-185,910	-217,353	-248,762	-273,535	-294,246	
EBIT	**70,726**	**114,734**	**167,687**	**208,026**	**243,209**	**278,355**	**306,074**	**329,249**	**25%**
Interest income	767	1,912	4,458	868	894	921	949	977	
Interest expence	-1,875	-303	-875	-1,079	-1,262	-1,444	-1,588	-1,709	
EBT	**69,618**	**116,343**	**171,270**	**207,814**	**242,841**	**277,831**	**305,435**	**328,517**	**25%**
Income TAX	169	-29,042	-40,870	-43,641	-50,997	-58,345	-64,141	-68,989	
Net Income	**69,787**	**87,301**	**130,400**	**164,173**	**191,844**	**219,487**	**241,294**	**259,529**	**21%**

12b. BALANCE SHEET STATEMEN

BALANCE SHEET								
ASSETS:	**2021**	**2022**	**2023**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**
Cash and cash equivalents	149,164	116,582	85,537	88,103	90,746	93,469	96,273	99,161
Accounts and notes receivable - net	57,028	82,155	102,152	105,217	108,373	111,624	114,973	118,422
Inventories	64,340	95,013	169,082	174,154	179,379	184,760	190,303	196,012
Other current assets	8,563	11,007	17,924	18,462	19,016	19,586	20,174	20,779
Current Assets	**279,095**	**304,757**	**374,695**	**385,936**	**397,514**	**409,439**	**421,723**	**434,374**
Property, plant, and equipment - at cost	41,613	51,392	64,046	91,691	124,011	161,001	201,676	245,430
Deferred income taxes - noncurrent	25,242	25,494	26,522	27,318	28,137	28,981	29,851	30,746
Other assets	10,211	12,645	17,312	17,831	18,366	18,917	19,485	20,069
Other intangible assets	11,937	14,913	21,882	22,538	23,215	23,911	24,628	25,367
Goodwill	54,543	85,307	95,767	98,640	101,599	104,647	107,787	111,020
Total Assets	**422,641**	**494,508**	**600,224**	**643,954**	**692,842**	**746,897**	**805,149**	**867,007**
LIABILITIES:								
Accounts payable	58,558	70,352	89,262	91,940	94,698	97,539	100,465	103,479
Notes payable and short-term debt	0	18,359	13,357	13,758	14,170	14,596	15,033	15,484
Deferred tax liabilities - current	8,619	26,814	30,635	31,554	32,501	33,476	34,480	35,514
Other current liabilities (1)	6,544	9,454	13,680	14,090	14,513	14,949	15,397	15,859
Other current liabilities (2)	3,509	3,276	4,903	5,050	5,202	5,358	5,518	5,684
Other current liabilities (3)	12,581	22,627	22,852	23,538	24,244	24,971	25,720	26,492
Current Liabilities	**89,811**	**150,882**	**174,689**	**179,930**	**185,328**	**190,887**	**196,614**	**202,512**
Long-term debt	0	12,239	20,000	20,600	21,218	21,855	22,510	23,185
Deferred tax liabilities- noncurrent	4,473	3,445	5,773	5,831	5,889	5,948	6,007	6,067
Other noncurrent liabilities (1)	1,733	1,221	1,356	1,359	1,361	1,364	1,367	1,370
Other noncurrent liabilities (2)	46,255	32,288	29,712	30,603	31,521	32,467	33,441	34,444
Total Liabilities	**142,272**	**200,075**	**231,530**	**238,322**	**245,317**	**252,521**	**259,940**	**267,579**
SHAREHOLDERS' EQUITY:								
Preferred stock	44,573.0	44,995.0	44,622.0	44,622.0	44,622.0	44,622.0	44,622.0	44,622.0
Common stock + Additional paid in capital	32,363	32,363	32,363	32,363	32,363	32,363	32,363	32,363
Retained earnings <deficit>	214,858	279,828	319,171	356,108	398,001	444,853	495,686	549,905
Accum. other comprehensive income <loss>	3,576	18,982	31,637	31,637	31,637	31,637	31,637	31,637
<Treasury stock> and other equity adjustments	-15,001	-81,547	-59,099	-59,099	-59,099	-59,099	-59,099	-59,099
Total Common Shareholders' Equity	**280,369**	**294,621**	**368,694**	**405,631**	**447,524**	**494,376**	**545,209**	**599,428**
Total Equity	**235,796**	**249,626**	**324,072**	**361,009**	**402,902**	**449,754**	**500,587**	**554,806**
Total Liabilities and Equities	**422,641**	**494,696**	**600,224**	**643,954**	**692,842**	**746,897**	**805,149**	**867,007**

12c. CASH FLOW STATEMENT

IMPLIED STATEMENT OF CASH FLOWS	Actuals 2022	2023	Forecasts Year +1	Year +2	Year +3	Year +4	Year +5	Year +6
Net Income	**87301**	**130400**	**164173.2628**	**191844.2442**	**219486.5898**	**241293.5128**	**259528.8146**	**267314.679**
Add back depreciation expense (net)	0	0	33989.01413	45969.82711	59681.97673	74759.64978	36318.07346	7521.556236
<Increase> Decrease in receivables - net	-25127	-19997	-3064.56	-3156.4968	-3251.1917	-3348.72746	-3449.18928	-3552.66496
<Increase> Decrease in inventories	-30673	-74069	-5072.46	-5224.6338	-5381.37281	-5542.814	-5709.09842	-5880.37137
<Increase> Decrease in other current assets (1)	-188	188	0	0	0	0	0	0
Increase <Decrease> in accounts payable - trade	11794	18910	2677.86	2758.1958	2840.941674	2926.169924	3013.955022	3104.373673
Increase <Decrease> in insurance reserves	2910	4226	410.4	422.712	435.39336	448.4551608	461.9088156	475.7660801
Increase <Decrease> in stored value card liabilities	-233	1627	147.09	151.5027	156.047781	160.7292144	165.5510909	170.5176236
Increase <Decrease> in other current liabilities (2)	10046	225	685.56	706.1268	727.310604	749.1299221	771.6038198	794.7519344
Net change in deferred tax assets and liabilities	14471	-1796	-356.6	-368.4526	-380.672324	-393.270301	-406.257996	-298.297597
Increase <Decrease> in other noncurrent liabilities (1)	-512	135	2.712	2.717424	2.722858848	2.728304566	2.733761175	41.08843046
Increase <Decrease> in other noncurrent liabilities (2)	-13967	-2576	891.36	918.1008	945.643824	974.0131387	1003.233533	1033.330539
Net Cash Flows from Operations	**55822**	**57273**	**160494.6248**	**188054.0165**	**215581.4131**	**237269.9267**	**255383.2549**	**263203.1734**
<Increase> Decrease in property, plant, & equip. at cost	-9779	-12654	-27644.592	-32320.0853	-36990.6321	-40674.3415	-43754.0036	-7362.88964
<Increase> Decrease in amortizable intangible assets (net)	-2976	-6969	-656.46	-676.1538	-696.438414	-717.331566	-738.851513	-761.017059
<Increase> Decrease in goodwill and nonamort. intangibles	-30764	-10460	-2873.01	-2959.2003	-3047.97631	-3139.4156	-3233.59807	-3330.60601
<Increase> Decrease in other assets	-2434	-4667	-519.36	-534.9408	-550.989024	-567.518695	-584.544256	-602.080583
Net Cash Flows from Investing Activities	**-45953**	**-34750**	**-31693.422**	**-36490.3802**	**-41286.0358**	**-45098.6074**	**-48310.9975**	**-12056.5933**
Increase <Decrease> in short-term debt	18359	-5002	400.71	412.7313	425.113239	437.8666362	451.0026353	464.5327143
Increase <Decrease> in long-term debt	12239	7761	600	618	636.54	655.6362	675.305286	695.5644446
Increase <Decrease> in preferred stock	422	-373	0	0	0	0	0	1338.66
Increase <Decrease> in common stock + paid in capital	0	0	0	0	0	0	0	970.89
Increase <Decrease> in accum. OCI	15406	12655	0	0	0	0	0	33799.96782
ncrease <Decrease> in treasury stock and other equity adjs	-66546	22448	0	0	0	0	0	0
Dividends and share repurchases	-22331	-90957	-127235.803	-149951.274	-172634.644	-190460.765	-205310.386	-285441.37
Increase <Decrease> in noncontrolling interests	0	-100	0	0	0	0	0	0
Net Cash Flows from Financing Activities	**-42451**	**-53568**	**-126235.093**	**-148920.543**	**-171572.991**	**-189367.262**	**-204184.078**	**-248171.755**
Net Change in Cash	**-32582**	**-31045**	**2566.11**	**2643.0933**	**2722.386099**	**2804.057682**	**2888.179412**	**2974.824795**

12d. KEY RATIO TABLE

	Actuals 2021	2022	2023	Forecasts Year +1	Year +2	Year +3	Year +4	Year +5	Year +6
FORECAST VALIDITY CHECK DATA:									
GROWTH									
Revenue Growth Rates:		33.3%	34.4%	23.4%	16.9%	14.5%	10.0%	7.6%	3.0%
Net Income Growth Rates:		25.1%	49.4%	25.9%	16.9%	14.4%	9.9%	7.6%	3.0%
Total Asset Growth Rates		17.0%	21.3%	7.3%	7.6%	7.8%	7.8%	7.7%	3.0%
RETURN ON ASSETS (based on reported amounts):									
Profit Margin for ROA	22.7%	21.0%	23.4%	23.9%	23.9%	23.9%	23.9%	23.8%	23.8%
x Asset Turnover	1.5	0.9	1.0	1.1	1.2	1.3	1.3	1.3	1.3
= Return on Assets	33.6%	19.1%	23.9%	26.5%	28.9%	30.6%	31.3%	31.2%	30.5%
RETURN ON ASSETS (excluding the effects of nonrecurring items):									
Profit Margin for ROA	21.0%	21.0%	23.3%	23.7%	23.7%	23.7%	23.7%	23.7%	23.7%
x Asset Turnover	1.5	0.9	1.0	1.1	1.2	1.3	1.3	1.3	1.3
= Return on Assets	31.0%	19.1%	23.8%	26.4%	28.7%	30.4%	31.0%	31.0%	30.3%
RETURN ON COMMON EQUITY (based on reported amounts):									
Profit Margin for ROCE				23.8%	23.7%	23.7%	23.7%	23.7%	23.7%
x Asset Turnover	1.5	0.9	1.0	1.1	1.2	1.3	1.3	1.3	1.3
x Capital Structure Leverage	1.8	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.6
= Return on Common Equity				47.9%	50.2%	51.5%	50.8%	49.2%	47.5%
RETURN ON COMMON EQUITY (excluding the effects of nonrecurring items):									
Profit Margin for ROCE				23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
x Asset Turnover	1.5	0.9	1.0	1.1	1.2	1.3	1.3	1.3	1.3
x Capital Structure Leverage	1.8	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.6
= Return on Common Equity				47.6%	49.9%	51.1%	50.4%	48.9%	47.2%
OPERATING PERFORMANCE:									
Gross Profit / Revenues	53.8%	56.6%	57.0%	57.0%	57.0%	57.0%	57.0%	57.0%	57.0%
Operating Profit Before Taxes / Revenues	22.6%	27.5%	29.9%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%
ASSET TURNOVER:									
Revenues / Avg. Accounts Receivable	11.0	6.0	6.1	6.7	7.6	8.4	9.0	9.4	9.4
COGS / Average Inventory	4.5	2.3	1.8	1.7	2.0	2.2	2.3	2.4	2.4
Revenues / Average Fixed Assets	15.0	9.0	9.7	8.9	7.5	6.5	5.6	4.9	4.5
LIQUIDITY:									
Current Ratio	3.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Quick Ratio	2.3	1.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1
SOLVENCY:									
Total Liabilities / Total Assets	33.7%	40.4%	38.6%	37.0%	35.4%	33.8%	32.3%	30.9%	30.9%
Total Liabilities / Total Equity	50.7%	67.9%	62.8%	66.0%	60.9%	56.1%	51.9%	48.2%	48.2%
Interest Coverage Ratio	38.1	385.0	196.7	193.5	193.4	193.3	193.3	193.3	193.3

12e. STOCK PERFORMANCE 5 YEARS RELATIVE TO INDEX RELATED TO THE COMPANY