

Analysis on Canon's current international strategies

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Abstract. In this report, we present an analysis of Canon's domestic and international operations in 2023. We explore the motivations behind Canon's expansion overseas and emphasize the significance of its international operations. However, implementing international operations entails numerous risks, with foreign exchange risk being particularly critical. We analyze the USD and EUR, two currencies that have a significant impact on Canon's operations. We conduct technical and fundamental analysis to predict the movements of these two currencies. Furthermore, we discuss Canon's risk management policies and propose potential improvement measures. Finally, we briefly review Canon's current international strategies and provide recommendations for future development.

Keywords: international operations, foreign exchange risk, risk management, current international strategies.

1 Introduction

Canon, a leading Japanese global company, produces imaging and information products. Its main operations are divided into four segments: Printing Group, Imaging Group, Medical Group, and Industrial Group, operating domestically and internationally^[1]. Notably, the Printing Group is the primary source of revenue. According to 2022 annual report data, the Printing Group accounted for 56.1% of total operating revenue, while the Imaging Group contributed 19.9%, the Medical Group 12.7%, and the Industrial Group 8.2%^[2]. Additionally, Canon's Medical Group is going international; it plans to commercialize its next-generation X-ray CT system through a partnership with the United States, the most influential healthcare market. In the post-epidemic era, with the economy steadily recovering, Canon has consolidated its top-three market share in several businesses worldwide, and its operating profit has steadily increased by 25.4% in 2022 compared to the previous year.

In terms of regions, Canon's operations are divided into Japan, Europe, the Americas, Asia, and Oceania. In 2022, overseas business accounted for 78.5% of Canon's revenue. That year, sales in Japan reached 864.8 billion yen, representing 21.5% of net sales. Sales in the Americas totaled 1,255.4 billion yen, accounting for 31.1% of net sales. Canon Healthcare USA, Inc. was established in 2023 to expand its share of the healthcare market in the Americas. Canon has further developed its Label Stream 4000 product line through the acquisition of Edale^[3]. Sales in the European region account

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for 25.6% of net sales and involve more than 120 countries and regions. Canon will use the Rugby World Cup in France and Birmingham 2022 Commonwealth Games to showcase its imaging and printing technology^[4]. Sales in the Asia and Oceania region accounted for 21.8% of net sales, and Canon will carry out sales activities at the 19th Asian Games to rapidly expand the Asian market. In 2023, Canon will consolidate its industrial complex, rebuild its global production system, strengthen product development of core technologies, and achieve net sales of more than 450 million yen in 2025.

2 Motivation of the Canon's overseas expansion

2.1 Market Growth and demand

With the development of economy and the improvement of human well-being, the demand for optical products, imaging technology etc. has continued to increase, especially in those developing countries and regions, the demand for imaging and optical products is growing rapidly which motives Canon's overseas expansion. In 2022, the net sales of the company is 4,031,414 Millions of yen ^[2].

2.2 Technical advantages

Canon invests significantly in technological innovation to maintain its competitive position every year. In 2022, its R&D expenses amounted to ¥306.7 billion, the company was also granted 2,694 patents in the US in 2022, ranking it fifth and maintained our No.1 ranking among Japanese companies^[2]. In fact, the company holds No.1 position in mirrorless cameras area and is also very competitive in other fields, including photography, printing, and medical imaging. The diversification and continuous updating of products give Canon a sufficient competitive advantage in the international market.

2.3 Cost Efficiency and Additional opportunity

Establishing production facilities or leveraging economies of scale in manufacturing can lead to cost efficiencies. Operating in regions with lower production costs can help Canon optimize its operational expenses and improve its cost competitiveness. According to the annual report of 2022, the operating expense to sales ratio decreased by 1.8 points to 36.5% due to continued efficiency-focused cost control and improvements to management structure^[2]. As a result, operating profit increased by 25.4% year-on-year to ¥353,399 million. Entering international markets can also give Canon access to a wider global supply chain and resources. This includes high-quality raw materials, partnerships and a diverse production base, as well as access to additional international financing and investment.

3 International Risk Exposure

3.1 Translation Risk

When multinational companies combine their financial statements, including those of their foreign subsidiaries, translation risks arise. Canon's 2022 Annual Report indicates that overseas operations accounted for 78.5% of total net sales in 2022^[2]. These sales are denominated in the applicable local currencies and are thus subject to fluctuations in the Japanese yen relative to those currencies. The highest sales revenue in US dollars amounted to 245.932 billion yen, representing 72% of total sales, while sales revenue in euros amounted to 56.297 billion yen. These revenues were impacted by the yen's depreciation, and the translation into yen led to higher profit margins. However, the exchange rate continued to self-correct based on the theory of triangular arbitrage and moved closer to the equilibrium price point. The instability of the yen's exchange rate can lead to fluctuations in Canon's profit margins. Additionally, according to Figure 1, the standard deviation of USD/JPY is 0.41%, while the standard deviation of EUR/JPY is 0.43%, making EUR/JPY more volatile. Furthermore, in the Excel appendix, the risk to Canon is quantified, and the expected return is assumed to be zero.

value of Maximum one day loss=0.0414

USD Maximum one day loss=245932 million*0.0417*(1+(0-1.65*0.41%)) = 10255.36 million

Jun-23	D/JPY 1USD=?JPY	Return	EUR/JPY	Return
Thursday 1 June 2023	138.7675	-0.0029667	149.36	0.00356111
Friday 2 June 2023	139.9451	0.00848614	149.93	0.00381628
Saturday 3 June 2023	139.9606	0.00011076	149.94	6.6698E-05
Sunday 4 June 2023	140.0615	0.00072092	149.92	-0.0001334
Monday 5 June 2023	139.4551	-0.0043295	149.4	-0.0034685
Tuesday 6 June 2023	139.6122	0.00112653	149.31	-0.0006024
Wednesday 7 June 2023	140.0303	0.00299472	149.82	0.00341571
Thursday 8 June 2023	138.8982	-0.0080847	149.77	-0.0003337
Friday 9 June 2023	139.4049	0.003648	149.77	0
Saturday 10 June 2023	139.3895	-0.0001105	149.89	0.00080123
Sunday 11 June 2023	139.4284	0.00027907	149.82	-0.000467
Monday 12 June 2023	139.5576	0.00092664	150.18	0.00240288
Tuesday 13 June 2023	140.1377	0.00415671	151.23	0.00699161
Wednesday 14 June 2023	140.0554	-0.0005873	151.73	0.00330622
Thursday 15 June 2023	140.1802	0.00089108	153.48	0.01153365
Friday 16 June 2023	141.835	0.01180481	155.41	0.01257493
Saturday 17 June 2023	141.835	0	155.41	0
Sunday 18 June 2023	141.8939	0.00041527	155.24	-0.0010939
Monday 19 June 2023	141.915	0.0001487	155.03	-0.0013527
Tuesday 20 June 2023	141.3559	-0.0039397	154.35	-0.0043862
Wednesday 21 June 2023	141.7233	0.00259911	155.73	0.00894072
Thursday 22 June 2023	143.0626	0.0094501	156.71	0.00629294
Friday 23 June 2023	143.7176	0.00457842	157.07	0.00229724
Saturday 24 June 2023	143.6949	-0.0001579	156.86	-0.001337
Sunday 25 June 2023	143.4563	-0.0016605	156.47	-0.0024863
Monday 26 June 2023	143.4272	-0.0002028	156.49	0.00012782
Tuesday 27 June 2023	143.9723	0.00380053	157.77	0.00817944
Wednesday 28 June 2023	144.3523	0.0026394	157.58	-0.0012043
Thursday 29 June 2023	144.7713	0.00290262	157.31	-0.0017134
Friday 30 June 2023	144.3106	-0.0031823	157.53	0.00139851
mean	141.3402467	0.00121526		0.00190427
STD		0.00406387		0.00426924
correlation		0.59639482		
Revenue from US(Million Y	245932			
Spot rate	0.0417			
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Fig. 1. Table of Currency exchange rate (USD/JPY, EUR/JPY)

3.2 Transaction risk

On September 7th, 2021, Canon entered into an agreement with Redlen Technologies Inc, ultimately taking full ownership of the company^[5]. The share transfer was finalized on September 28th, 2021, making Redlen a wholly owned subsidiary of Canon Inc. (Canon 2021). As seen in Figure 2's CAD/JPY chart, the exchange rate between CAD and JPY rose from an initial midpoint of 86.6528 to 88.0151 over the course of 21 days. Using data from September 28th, 2021, Canon incurred an additional cost of 490 million yen compared to September 7th, representing a more than 1.58% increase. In 2023, as the yen continues to depreciate, Canon's foreign currency transactions will face significant uncertainty.

September					
Thursday 30 September 2021 (30/09/2021)	87.7684	87.8766	87.8497	87.8126	87.831
Wednesday 29 September 2021 (29/09/2021)	87.9613	87.7691	87.9525	87.7373	87.844
Tuesday 28 September 2021 (28/09/2021)	87.8768	87.9570	88,1691	87.8611	88.015
Monday 27 September 2021 (27/09/2021)	87.5690	87.8829	87.6457	87.6259	87.635
Friday 24 September 2021 (24/09/2021)	87.1285	87.9196	87.8197	87.1330	87.476
Thursday 23 September 2021 (23/09/2021)	85,8872	87.1282	86.9425	86.6475	86.795
Wednesday 22 September 2021 (22/09/2021)	85.1299	85.8924	85.8214	85.6353	85.728
Tuesday 21 September 2021 (21/09/2021)	85.4482	85.1612	85.6219	85.4651	85.543
Monday 20 September 2021 (20/09/2021)	86.1515	85.4765	85.8116	85.4740	85.642
Friday 17 September 2021 (17/09/2021)	86.4986	86.0438	86.8205	86.4790	86.649
Thursday 16 September 2021 (16/09/2021)	86.6365	86.5051	86.5935	86.5492	86.571
Wednesday 15 September 2021 (15/09/2021)	86.4586	86.6882	86.6147	86.3168	86.465
Tuesday 14 September 2021 (14/09/2021)	86.9549	86.4379	87.0017	86.4724	86.737
Monday 13 September 2021 (13/09/2021)	86.6971	86.9638	87.0071	86.7783	86.892
Friday 10 September 2021 (10/09/2021)	86.6806	86.9975	87.1698	86.9222	87.046
Thursday 9 September 2021 (09/09/2021)	86.8235	86.6696	86.6726	86.6330	86.652
Wednesday 8 September 2021 (08/09/2021)	87.2128	86.8314	87.0452	86.7613	86,903
Tuesday 7 September 2021 (07/09/2021)	87.6237	87.2168	87.4418	87.2837	87.362
Monday 6 September 2021 (06/09/2021)	87.6020	87.6246	87.7994	87.6059	87.702
Friday 3 September 2021 (03/09/2021)	87.5909	88.4381	89.1853	87.6076	88.396
Thursday 2 September 2021 (02/09/2021)	87.2410	87.5844	87.3895	87.2557	87.322
Wednesday 1 September 2021 (01/09/2021)	87.2396	87.2520	87,4566	87.2826	87.369

Fig. 2. Table of Exchange rate of CAD/JPY (September 2021)(Yahoo finance)

Moreover, Figure 3 highlights Canon's transaction risks, which arise from the combination of various currencies and their respective values at the time of settlement.

Millions of yen	U.S.\$	Euro	Others	Total
Forwards to sell foreign currencies:				
Contract amounts	57,098	74,266	17,716	149,080
Estimated fair value	754	856	483	2,093
Forwards to buy foreign currencies:				
Contract amounts	17,155	1,070	7,999	26,224
Estimated fair value	(315)	(9)	(316)	(640)

Fig.	3.	Table	of I	Forward	contract
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3.3 Economic Risk

KMZ, a Russian company specializing in optical devices and imaging tools, poses a significant threat to Canon in the market. As Figure 4 demonstrates, the devaluation of the ruble against the yen has significantly impacted KMZ over the past year. This currency fluctuation not only affects Canon's customer base but also reduces demand for its products, ultimately leading to a decline in Canon's net cash inflows. Consequently, Canon faces escalating financial risks due to these currency value fluctuations.

Russian Ruble to Japanese Yen



Fig. 4. Russian Ruble to Japanese Yen (Yahoo finance)

3.4 Geopolitical Risk

Canon is a multinational enterprise that conducts business in numerous countries, making it susceptible to international risks, including geopolitical crises. One such risk is the China-US chip conflict. According to Akira Makino, Chairman and President of Canon Optical Industrial Equipment (Shanghai) Inc, a significant portion of Canon's FPD business, particularly in FPD lithography equipment and OLED display manufacturing equipment, is contributed by China (Zhou 2022). However, The Japan Times reported that Japan and the Netherlands have agreed to join the United States in enhancing restrictions on the export of advanced chip manufacturing equipment to China^[6]. This development could significantly impact Canon's operations and profits in China.

4 Major Currency Risk & FX Forecasting

According to the annual report, the Americas and Europe were the primary contributors to Canon's net sales. Net sales in the Americas amounted to $\pm 1,255,405$ million, while those in Europe reached $\pm 1,034,008$ million, representing 31.1% and 25.6% of consolidated net sales, respectively. It can be inferred that fluctuations in USD/JPY and EUR/JPY have a significant impact on Canon's profits. The Efficient Market Hypothesis assumes that all investors are rational, share the same information, and have similar expectations. However, these assumptions are too idealistic to be realized in practice. Therefore, we can use technical analysis to predict the movements of USD/JPY and EUR/JPY in the next year.

4.1 Technical Analysis for USD/JPY

The chart Fig.5 clearly illustrates that the JPY has depreciated in value relative to the USD since January 2021^[7]. Furthermore, the foreign exchange rate rose sharply starting in March 2022, peaking at 150 USD/JPY in October 2022. We consider this level as the resistance line. Following a brief period of volatility, USD/JPY retreated to a phase-

specific trough at 128.3 in January 2023, which can be viewed as the support line. Overall, USD/JPY remains within an ascending channel. In conclusion, our prediction is that USD/JPY may not exceed 150. Objectively, USD/JPY may fluctuate between 128 and 150 in the next six months.

Additionally, Jerome H. Powell, the president of the Federal Reserve Bank, pledged that they will maintain a high interest rate for a long period to combat inflation and balance risk management at the annual Jackson Hole meeting ^[8]. However, it's worth noting that the FED chose not to raise interest rates at the September meeting, and investors estimate that the FED will begin cutting interest rates in 2024^[9]. This prediction is unlikely to propel USD/JPY higher.



Fig. 5. (Technical Analysis for USD/JPY)(Yahoo finance)

4.2 Technical Analysis for EUR/JPY

The chart Fig 6 reveals that the JPY has depreciated against the EUR since March 2022^[10]. The EUR/JPY pair has followed an ascending trendline until June 2023, peaking at 158. This level can be identified as a resistance line. Furthermore, it's noteworthy that 138 serves as a support level, as EUR/JPY has consistently halted its downward trajectory at this point on multiple occasions. It's reasonable to expect that EUR/JPY will continue to fluctuate within the range of 138 to 158.



Fig. 6. (Technical Analysis for EUR/JPY)(Yahoo finance)

4.3 Fundamental analysis

For a relatively longer period, we construct a linear regression model to perform a fundamental analysis. Based on the PPP and IRP theories, we select the differential between domestic real interest rate and foreign real interest rate (r-r*) and the differential between domestic inflation and foreign inflation (π - π *) as our predictors. We choose overnight interbank interest rates (adjusted for inflation) as measurement of interest rates, and we use CPI to calculate the inflation rate. After analyzing pairwise relationships among these variables, we decided to use the following regression equation:

$$e=\beta_0+\beta_1(r-r^*)+\beta_2(\pi-\pi^*)+\epsilon$$

where e is the exchange rate of foreign currency against home currency, r and r* are domestic and foreign interest rates respectively, π and π^* are domestic and foreign inflation rates respectively. We use monthly data since October 2018 to fit the model (figure 7-8). It is obvious that the fitted model is significant, however, the coefficient for inflation differential is negative, which doesn't accord with what is discussed in this class. We believe it is because of the difficulty in increasing Japanese inflation. In fact, the Bank of Japan kept its ultra-loose monetary policy during the past few years to drive up the inflation rate and, consequently, make the Japanese yen depreciate. However, due to the lack of sufficient domestic demand, the inflation level of Japan remains low. As a result, there comes a negative correlation between inflation and foreign exchange rate.

```
Call:

Im(formula = e_USD ~ int_A + inf_A)

Residuals:

Min 10 Median 30 Max

-10.146 -4.637 -2.441 5.716 15.375

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 95.6611 2.0353 47.002 < 2e-16 ***

int_A -7.3539 0.5649 -13.019 < 2e-16 ***

inf_A -3.1966 0.4259 -7.506 5.05e-10 ***

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 6.583 on 56 degrees of freedom

Multiple R-squared: 0.7563, Adjusted R-squared: 0.7476

F-statistic: 86.91 on 2 and 56 DF, p-value: < 2.2e-16
```

Fig. 7. USD predicting model (int and inf represent differentials)

```
call:
lm(formula = e_EUR ~ int_E + inf_E)
Residuals:
    Min 10 Median 30 Max
-6.3562 -2.2587 0.0237 2.7390 6.3087
Coefficients:
    Estimate Std. Error t value Pr(>|t|)
(Intercept) 123.1219 0.8046 153.02 < 2e-16 ***
inf_E -5.1459 0.4264 -12.07 < 2e-16 ***
inf_E -1.3553 0.1311 -10.34 1.35e-14 ***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 3.534 on 56 degrees of freedom
Multiple R-squared: 0.882, Adjusted R-squared: 0.8778
F-statistic: 209.3 on 2 and 56 DF, p-value: 2.2e-16
```

Fig. 8. EUR predicting model (int and inf represent differentials)

We use forecasting data from trading economics (table 1) to predict the possible spot exchange rates in the future, the results are shown on table 2. According to the calculation, USD/JPY will likely be 138.8090, 136.3312, 136.9705 on March 2024, June 2024 and September 2024 respectively; EUR/JPY will likely be 147.7966, 146.1036 and 144.6816 on March, June and September in 2024 respectively. We can expect that the Japanese yen will recover slightly from the mass depreciation.

Forecast time	Japanese real inter- est rate predicted	USA real in- terest rate pre- dicted	Euro area real interest rate pre- dicted	Japa- nese in- flation rate pre- dicted	USA infla- tion rate predicted	Euro area in- flation rate predicted
Mar 2024	0.1	5.75	4.5	2.5	3	4
Jun 2024	0.1	5.5	4.25	2.3	2.6	3.5
Sep 2024	0.1	5.5	4	2.1	2.6	3.2

Table 1. interest rate and inflation rate forecast

Table 2. foreign exchange rate forecast

Forecast time	USD/JPY	EUR/JPY
Mar 2024	138.8090	147.7966
Jun 2024	136.3312	146.1036
Sep 2024	136.9705	144.6816

5 Foreign exchange risk management policy and evaluation

5.1 Foreign exchange instrument

Foreign exchange contracts: Canon uses foreign exchange contracts to manage certain foreign exchange risks, primarily by converting US dollars and euros into Japanese yen. Canon's policy states that a specific portion of the foreign exchange risk generated by forecasted inter-company sales is primarily hedged using foreign exchange contracts that expire within three months. By adopting a more rigorous approach towards the term of foreign exchange contracts, Canon can maintain reasonable predictions and responses to exchange rate fluctuations, thereby promoting the company's cash liquidity to a certain extent.

Derivatives: Canon primarily uses derivative financial instruments to mitigate foreign exchange risks. These derivative instruments primarily consist of foreign currency exchange contracts utilized by Canon and its subsidiaries to mitigate risks. Canon carefully selects its counterparties based on their financial condition, with the majority being internationally recognized financial institutions. Canon also promotes the reasonable diversification of foreign exchange risks and does not engage in derivative speculation for trading purposes, thus minimizing the risk associated with derivative financial instruments.

Certain derivative financial instruments which are not designated as hedges: Canon also utilizes derivative financial instruments that are not designated as hedges. Any changes in the fair values of these instruments are immediately reflected in earnings. Instruments with hedging attributes offer greater flexibility but also tend to have higher costs. Data reveals that the loss on Derivatives not designated as hedging instruments is 1,1926, higher than the loss on Derivatives in cash flow hedging relationships, which stands at 1,0683. This is an anomaly that might stem from issues in hedging decisions, given that the trend of Japanese currency depreciation is relatively predictable.

5.2 Improvement methods

Trade with the Japanese yen: Canon can implement natural hedging techniques to manage foreign exchange risks. By stipulating that a portion of its business be conducted in Japanese yen, Canon can significantly reduce its exposure to currency fluctuations. In particular, agreements with suppliers denominated in Japanese currency can offer dual benefits, reducing both foreign exchange risks and potential marketing expenses. Additionally, Canon can utilize income generated by its US and European subsidiaries to cover expenses like salaries, management costs, and raw materials.

Cross-hedging minor currency exposure: Due to the strong correlation between USD/JPY and EUR/JPY (0.59639482), Canon can implement a cross-hedging strategy by selling USD forward contracts to mitigate its exposure to EUR accounts receivable.

Lead-and-lag strategy: When comparing the US dollar and the euro against the Japanese currency, it's observed that the Eurodollar has exhibited higher volatility against the Japanese currency in recent months (0.43% fluctuation) compared to the US dollar (0.41% fluctuation). Therefore, Canon should adopt a proactive strategy to manage EUR and lagged USD receivables more effectively, enabling better handling of payables and receivables while maximizing the company's overall benefits.

Political risk management: Canon has begun to examine excessive dependence on certain countries or regions and other economic security risks, such as the struggle between the United States and China for dominance and the potential risk of the Taiwan conflict.

To respond to these issues through Group-wide action, Canon Inc. established the Economic Security Office in January 2022. The aim of this new unit is to provide management support in the area of economic security through activities including gathering, classifying, and analyzing information from within and outside Canon and putting in place a framework for Group-wide sharing.

5.3 Sustainable Development of the Company Risk Management

Given the relatively high earthquake occurrence rate in Japan, Canon faces a greater risk of earthquake damage compared to other countries and regions. To address this

issue, Canon has implemented backup systems based on parallel production of similar models in multiple locations. It has also upgraded buildings constructed according to old seismic design standards, signed disaster agreements with local communities, and developed information collection and reporting systems to effectively respond to disasters.

6 Recommendations and Conclusion

6.1 Strategies: Expansion, Innovation, and Reshoring Production

As Fujio Mitarai, CEO & chairman of Canon Inc, has stated to shareholders, the company will "boldly press forward" while anticipating social change. During the company's development phase VI (2021-2025), Canon aims to expand all four business groups discussed in part 1. Additionally, it will continue to heavily invest in technical innovation to maintain its competitiveness, as outlined in part 2. However, Canon faces the challenge of rebuilding its global production system to mitigate supply chain disruptions and geopolitical risks.

In January 2022, Canon closed its production site in Zhuhai, China, due to the pandemic's impact and potential fallout from the China-U.S. conflict. This move signifies a complete relocation of camera production from the Chinese mainland to Japan. To counteract high domestic labor costs, Canon will promote automation and in-house production^[11].

6.2 Recommendations: Exchange Rate Considerations

Given the exchange rate forecast, we anticipate the Japanese yen to stabilize soon, which could negatively impact Canon's profits. Therefore, we advise against rapid international expansion at this time. However, if the yen's value remains stable, translation risk will decrease. Additionally, Canon plans to invest 306.7 billion yen in 2022 to maintain its technological leadership in Japan. We are concerned about the potential for high leverage and cash flow inefficiencies that may result.

Reshoring production appears to be a strategic move to mitigate geographical, foreign exchange, and labor cost risks^[12]. We support this decision as a proactive measure to safeguard Canon against external vulnerabilities.

7 Conclusion

In conclusion, Canon, as a vast multinational enterprise, is committed to global expansion and is well-prepared to navigate various risks, including translation, transaction, economic, and geographical risks. The company utilizes customized foreign exchange contracts and derivatives to mitigate these risks. Leveraging its strong bargaining power and comprehensive risk management policies, Canon can avoid being reactive to risks. Nevertheless, Canon employs additional strategies such as Japanese yen pricing, crosshedging, and lead-and-lag to further manage its risks. Limitations in this assignment include our inability to clarify the specifics of "derivative financial instruments which are not designated as hedges" mentioned in part 5. According to Canon's annual report, these instruments are distinct from other derivatives; however, we were unable to provide a detailed overview. Additionally, we did not account for the impact of taxes. The hedging of risks can be treated as a cost, which reduces gross profit and subsequently lowers the tax liability of a company.

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