

Foreign Exchange Gains and Losses of Multinational Enterprises Based on BMW

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Abstract. The exchange gains and losses of multinational corporations are among the issues that should be attention in financial management. This essay will research and offer suggestions on the exchange gains and losses in the 2023 annual report of BMW Group. It is a large public company with a relatively mature exchange rate management system. Whereas, financial problems remain due to exchange rate effects, such as suppressed income and balance sheets. Among them, BMW flexibly uses financial derivatives suitable for the company's situation, which is worth learning from for small and medium-sized enterprises. This essay will discuss some new technologies and management methods in novel directions, such as dynamic currency hedging exchange rate risk, improving the independence of the board of directors, and linking equity and salary, to prevent and reduce exchange rate risk. The combination of traditional hedging methods with new technology and management will improve the management system of exchange rate risk.

1 Introduction

Multinational enterprises operate all over the world trading with multiple currencies. Using different national currencies to exchange commodities or access revenue is a financial problem that multinational enterprises must face. Whereas, exchange rate fluctuations due to factors such as regional frictions, political policies, or force majeure often result in unnecessary losses or risks to multinational enterprises. Although current multinational companies have taken certain methods to deal with exchange gains and losses, such as using financial derivatives, still face the risk of loss due to exchange rate fluctuations. Exploring the foreign exchange gains and losses of multinational enterprises and their countermeasures could assist enterprises in examining the shortcomings of their countermeasures and timely adjusting countermeasures to avoid unnecessary losses. This is also one of the financial management issues that multinational enterprises need to continuously improve and adjust.

The reason why multinational enterprises have exchange gains and losses is that exchange rates are linked to international trade. According to the heterogeneity results of the existing literature, Lal et al. draw on the complexity of the relationship between exchange rate volatility and international trade. It reveals that exchange rate fluctuations have different impacts on different multinational enterprises and regions, and recommends that enterprises

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must formulate sound risk management strategies to mitigate the impact of exchange rate fluctuations [1]. Bahmani-Oskooee et al. use of linear and nonlinear methods also revealed that exchange rate fluctuations have a short-run impact on trade flows [2].

Therefore, the management of exchange gains and losses is a compulsory course for multinational enterprises. Through the records of non-financial companies listed on the Indonesian exchange from 2015 to 2018, Almas et al. research concluded that hedging exchange rates using derivatives has a positive and significant impact on company value [3]. Yudha et al. used purposive sampling and logistic regression analysis to study that the growth opportunities generated by the company's expansion of business activities are an important factor in the use of hedging to hedge exchange rates. If the company's growth opportunities increase, it is recommended to actively make hedging decisions to minimize exchange rate risk [4].

Alvarez & Hansen found that the company's foreign assets and export activities are effective hedges against foreign exchange risks [5]. This is essentially a natural hedging strategy. Whereas, natural hedging strategies do not apply to all firms. Saharan & Rajendran analyzed 54 major studies with 2034 effect sizes. The study concludes that the decision to choose natural hedging mainly depends on the risk exposure of the firm. The underlying profitability and liquidity of the firm play an important role in determining the firm's use of natural hedges against exchange rate effects [6].

In addition to natural hedging, traditional financial derivatives are the usual choice for multinational enterprises. It is worth thinking about how to choose a suitable financial derivative. Lorient et al. analyze the relationship between equity-linked compensation and the use of financial derivatives to hedge the risk of exchange rate movements in a sample of 268 Australian firms. Conclude is that the use of equity-linked compensation has an incentive effect and can be more motivated to ensure that effective foreign exchange hedging is undertaken [7]. Opie & Riddiough exploit the time-series predictability of currency returns and find that high-risk adjusted returns are provided through independent currency portfolios [8]. Based on an analysis of 250 bank reports, Prymostka et al. found that three types of financial risk hedging (operational, market, and contractual) should be distinguished to ensure operational flexibility when hedging risks [9]. In addition, management issues deserve attention. Sikarwar analyzed a sample of firms in ten emerging markets between 2011 and 2019. Found that firms with larger and independent boards face lower exchange rate risk. Better monitoring would make hedging more effective, reducing exchange rate risk [10].

Based on the above literature, this paper investigates the reasons and methods for managing exchange gains and losses in multinational corporations. In particular, the 2023 annual report of BMW, a large listed company that already has a mature system, was selected for analysis. Selecting public companies with cutting-edge methods can not only find the advantages of current exchange profit and loss management but also find common problems. Therefore, this essay objectively analyzes the advantages and problems existing in BMW's exchange management, and also puts forward new management methods. This can be used as a reference for small and medium-sized enterprises and also has reference value for some of the same public companies.

2 Current situation of BMW Group's exchange gains and losses

The global presence of BMW operates in multiple currencies, likely to face high exposure to foreign exchange risk. A significant portion of BMW Group earnings, production, and financing are mostly outside the euro area. Among the districts, particularly important currencies to BMW are the Chinese renminbi, the dollar, the British pound, and the Japanese yen.

2.1 Current situation of currency

2.1.1 Euro

BMW, whose main settlement currency is the Euro, is a brand originating in Germany (an important member of the eurozone). The fluctuation of the exchange rate directly affects BMW's production cost, product pricing, and profit since the Euro is widely circulated and traded in European countries.

2.1.2 RMB

China is the largest single sales market of BMW, and also a huge sales business district of BMW, causing the essential of RMB to BMW to be self-evident. However, inflation in China led the country to adopt an expansionary monetary policy, resulting in the depreciation of the renminbi against the euro. Compared with the average exchange rate of € 1 ≈ ¥ 7.08 in 2022, the average exchange rate of RMB against the euro in 2023 is 7.66 yuan, a sharp depreciation of RMB.

2.1.3 USD

The United States is one of the most critical automotive markets in the world. Not only does BMW sell numerous cars in the USA, but using the dollar dominates a portion of parts procurement and international financial transactions. Whereas, there is a depreciation with an average dollar/euro exchange rate of \$1.08 in 2023, compared to an average exchange rate of € 1 ≈ \$1.05 in 2022.

2.2 Current situation of BMW

2.2.1 Revenue is depressed

As reflected in the annual report of BMW for 2023, compared with 2022, whilst the revenue of BMW increased due to favorable factors such as a higher volume of sales and getting rid of redundant departments, it was also counteracted by the negative exchange rate impact of RMB and US dollar, which restrain revenue of the group.

2.2.2 The total balance sheet is suppressed

Due to the exchange rate impact of RMB and USD, the balance sheet of the BMW Group was slightly higher than that of the previous years.

2.2.3 Cash and cash equivalents

Cash and cash equivalents showed negative growth from 2022 in adjusting for exchange rate effects.

2.2.4 Level of risk

The strengthening of the Euro in 2023 leads to an increased level of risk.

2.2.5 Accounting method

The financial statements of BMW company presented in foreign currencies are translated using the settlement exchange rate method ((spot buying price + spot selling price)/2). Assets and liabilities are translated at the exchange rate at the end of the period, while income and expenses are translated at the average exchange rate.

2.2.6 The flexible use of the hedging method

Firstly, the BMW Group is against risks through natural hedging. Due to the business of BMW Group being decentralized in many countries and regions around the world, intensively establishing production plants and sales networks, causes the balance to rely on the production and sales in different areas, which plays a natural hedge role. For instance, BMW has established production plants and a complete supply chain system in China, especially local procurement and local customization, meaning the establishment of long-term cooperative relations with Chinese suppliers. All mentioned above effectively reduce foreign exchange expenditure and income, resulting reduce the risk of RMB depreciation against the euro. Secondly, in order to reduce the remaining risk after netting, the BMW Group adopts derivative financial instruments that are hedged, which are in the form of forward currency contracts and currency swaps. To operate effectively, BMW regularly takes into account the degree of hedging of the risk exposure, usually based on a constant ratio of 1 to 1 between the hedging instrument and the risk exposure. Meanwhile, a credit risk management system is also established to avoid inefficiency, which effectively reduces the risk of counterparties.

3. Analysis of problems and causes

3.1 Revenue is depressed

The BMW Group delivered 2,554,200 vehicles worldwide in 2023, up 6.4% compared with 2022, with total revenue of 155,498 million euros, up 8.3% compared with 2022. BMW uses the settlement exchange rate method for translation. The following mainly analyzes the impact of RMB depreciation on income.

In the 2023 annual report, the external revenue of China was 40,833 million euros, down 2.6% from 2022. Suppose it is converted according to the average exchange rate of RMB against the Euro in 2022 € 1=¥7.08. Following this average exchange rate, the external income of China in 2023 should be 44,178 million euros, up 5.5% compared with 41,881 million euros in 2022. It can be seen that the loss from the exchange rate alone is 8.1%.

Whereas, 824,900 units were sold in China in 2023, up 4.2% year on year. Because of competition in the auto industry, BMW adopted the strategy of lowering prices to ensure sales volume. The annual discount rate (price reduction rate) in China reached 17.66% to improve the market competitiveness in China. Meanwhile, BMW cars the luxury goods, which means that the demand elasticity is relatively large. The price reduction will lead to an increase in sales volume, which could make up for the loss caused by the exchange rate. Although this will face higher costs and narrower gross profit, such a markdown adjustment can hedge the export pressure caused by the appreciation of the euro. Based on the above, assumed that the increase in sales volume caused by lower prices in BMW Group can effectively offset the exchange rate impact and maintain the revenue before exchange rate

fluctuations in 2022. It can ignore the factors of price and sales volume and consider the impact of exchange rate unilaterally. However, the depreciation of the RMB did depress the revenue of BMW Group, judging by an 8.1% loss on foreign exchange. Even though BMW Group used the strategy of lowering prices to ensure sales, it still did not offset the impact of the exchange rate.

3.2 The total balance sheet is suppressed

Due to the impact of the RMB and US dollar exchange rates, the total balance sheet of the BMW Group has been suppressed, which is reflected in the impairment of asset value and the increase of liabilities.

3.3 Asset account

Intangible assets decreased compared with 2022 after the exchange rate adjustment, mainly due to the amortization of the rights regained through the acquisition of BMW Brilliance in China and the amortization recognized by the dealer relationship. The depreciation of the RMB made the BMW Group, which uses the settlement exchange rate method, face partial impairment of assets in the reevaluation of intangible assets.

Sales receivables increased slightly. By exchange rate adjusted, BMW Auto Finance increased the average financing per car in Germany and the United States as a result of better availability of new models. This increase was offset by a decline in financing from Chinese clients due to competition from local banks. The depreciation of RMB against the euro weakens the advantage of loan interest rates of financial services provided by BMW Group. The loan interest rate of Chinese banks is not directly affected by the exchange rate fluctuation unless the exchange rate fluctuation leads to a change in the whole domestic market.

3.4 Liability account

Although the financing liability has increased compared with 2022, the subdivided items have negative growth due to the strong exchange rate of the euro.

3.5 Cash and cash equivalents

From the cash flow statement of BMW Group in 2023, the adjustment of cash and cash equivalents negatively grew by €705million due to exchange rate changes, compared with a positive increase of €104million in 2022. It can be seen that the depreciation of the RMB and US dollar against the euro hurts the change of cash and cash equivalents.

3.6 Level of risk

In key sales markets such as China and the United States, risks compressing gross profit for the BMW Group due to the strong euro. And because BMW has adopted the method of "price reduction to protect share", the risk of decreasing order volume and increasing competitive pressure will not be discussed. From the Income Statement, 2023 revenue is €107,874 million (including Automobiles, Motorcycles, and Other Revenues), up 9.2% year on year. Cost of sales was €90,865 million, up 11.3% year on year. Gross profit was €17,009 million, down 0.85% year on year. Thus, it can be seen that the BMW Group made effective decisions in terms of sales and product service, but cost growth was higher than revenue growth. Due to

a rise in research and development costs to € 75.38 billion, up 13.8% year on year. As a result, BMW's price reduction measures resulted in a narrowing of gross profit, the profit margin was compressed.

4. Solutions and vision

Managing exchange gains and losses, the BMW Group's current approach is to manage currency risk in the long term and short term (operational). In the medium and long term, BMW adopted measures to increase production or purchase volume as a natural hedge. The essence of this method is to keep foreign exchange receipts and expenditures in the same currency. The operation is that BMW establishes factories and sales networks in major sales places so that foreign exchange income can be directly converted into expenditure without exchange rate conversion. In the short and medium term, BMW manages risk hedging through financial derivatives. In the form of forward currency contracts and currency swaps. First, due to the BMW Group's use of a cash flow risk model to measure currency risk, forward currency contracts allow it to forecast its cash flows more accurately by locking in the exchange rate in advance. Secondly, because BMW Group has business development around the world, a currency swap is the exchange between different currencies, which is more beneficial for large multinational enterprises like BMW. As a large public company, BMW Group has mature plans and efforts in exchange for gains and losses. The problems shown in the 2023 annual report caused the rapid depreciation of the RMB and the US dollar, although the mature financial management system of the BMW Group has found a way to remedy them. In the future, there may be some new risk hedging methods that can be used to further improve the past exchange rate risk management.

4.1 Dynamic currency factor hedging

This method is to exploit the time-series predictability of currency returns by obtaining returns through independent currency portfolios. The BMW Group is free to deploy a pure currency portfolio so that the predictability of currency returns can be applied to the setting of this currency portfolio. It is equivalent to providing an alternative method of monetary management. Compared to a large number of alternative hedging methods, this new dynamic approach is a more diversified way to outperform currency spreads, value, and momentum [8].

4.2 Enhance the independence of the Board of Directors

Sikarwar indicated that companies with larger and independent boards face lower exchange rate risk. The compensation and performance of a firm's independent directors generally do not depend on the CEO. Their usual role is to monitor companies so that they can acquire more. In addition, increasing the gender diversity of the board, that is, increasing the proportion of women, can make the behavior of managers highly monitored. This method not only provides important lessons for emerging companies but also may be a chance for established companies such as BMW to breathe new life [10].

4.3 Equity and compensation should be linked

This approach is essentially an incentive mechanism that ameliorates the risk aversion of managers. A corporate CFO who holds some stocks and options can increase the likelihood

of effective foreign exchange hedging. The essence of this incentive is that the CFO's interests are aligned with those of the shareholders [9].

5. Conclusion

This essay studies the issues and reasons for the management of exchange gains and losses reflected in the 2023 annual report of BMW Group and offers novel methods that can be used within the mature management system of large public companies. Dynamic currency factor hedging is a forecasting model that BMW can build in financial management. It can be used not only to hedge exchange rate risk but also to cope with changes in the financial services it operates. The independence of the board of directors and the supervision of gender diversity are the key points for BMW to achieve higher efficiency in management. Linking equity and compensation is a direction that innovatively proposes that the CFO's interests are consistent with shareholders' interests to reduce the use of conservative methods. Many multinational enterprises have mature exchange management systems, which provide reference for small and medium-sized enterprises. However, mature systems cannot fully hedge against the financial problems posed by exchange rates. The application of new technologies and new management systems may be able to break through the ranks of conservative and traditional public companies so that exchange risk is no longer an inhibiting factor.

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