

**A STUDY ON FOREIGN EXCHANGE RISK MANAGEMENT WITH REFERENCE TO
INFOSYS LTD**

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Abstract

This study aims to address the challenges faced by Infosys Limited in managing foreign exchange risk and propose solutions to mitigate these risks. The objectives include assessing the company's current foreign currency risk exposure, evaluating the effectiveness of its strategy using derivatives as cash flow hedges, and analysing the impact of exchange rate fluctuations on its financial performance and position. The need for this study arises from the increasing global business environment where businesses and individuals are exposed to currency risks. Understanding and effectively managing these risks are crucial to avoid significant losses. Fluctuations in exchange rates can impact international trade, economic growth, and financial stability, necessitating appropriate policies and risk management practices. Investors with assets in multiple currencies also face foreign exchange risk and need to make informed decisions to manage their portfolios effectively. Additionally, studying foreign exchange and risk management helps regulators identify and address potential systemic risks. As globalization progresses, businesses engaging in international trade must navigate the complexities of foreign exchange. Infosys Limited, specifically, needs to maintain a stable financial position by effectively managing its financial liabilities and generating sufficient cash. It should focus on managing debt and financial obligations while implementing effective currency risk management strategies to mitigate the impact of exchange rate fluctuations. Monitoring and adjusting the usage of forward contracts based on changing economic conditions and business needs is crucial. By addressing these aspects, Infosys can ensure long-term sustainability and success in managing foreign exchange risks.

Introduction

Foreign exchange risk management is a critical aspect of financial management for multinational corporations operating in a global business environment. With increasing globalization and cross-border transactions, companies like Infosys Ltd. face exposure to foreign exchange risks that can significantly impact their financial performance and position. Infosys Ltd., a leading global provider of technology and consulting services, operates in multiple countries and deals with various currencies, making it susceptible to fluctuations in exchange rates.

Infosys Ltd. has recognized the importance of managing foreign exchange risks and has implemented a comprehensive foreign exchange risk management framework to mitigate potential vulnerabilities and capitalize on opportunities. This framework includes policies, strategies, and financial instruments aimed at minimizing the adverse effects of currency fluctuations on the company's financial assets and liabilities.

One of the primary objectives of Infosys Ltd.'s foreign exchange risk management strategy is to assess its current exposure to foreign currency risks. This involves identifying the financial assets and liabilities denominated in different currencies and evaluating the potential areas of vulnerability or opportunity for risk mitigation. By understanding the extent of their foreign currency risk exposure, Infosys Ltd. can devise appropriate risk management strategies to protect its financial position and ensure stability.

To effectively manage foreign exchange risks, Infosys Ltd. has employed various financial instruments, including derivatives designated as cash flow hedges with forward contracts. These instruments are used to hedge against adverse movements in exchange rates and reduce the potential negative impact on the company's financial performance. By designating these derivatives as cash flow hedges, Infosys Ltd. aims to match the timing of cash flows from its financial assets and

liabilities with the settlement of the derivative contracts, thereby minimizing the risk of exchange rate fluctuations.

The effectiveness of Infosys Ltd.'s current strategy of using derivatives as cash flow hedges with forward contracts is a crucial aspect of their foreign exchange risk management. It is essential to evaluate the success of these hedging instruments in mitigating currency risks associated with financial assets and liabilities. By assessing the outcomes and performance of these hedging strategies, Infosys Ltd. can determine whether adjustments or improvements are needed to enhance their risk mitigation efforts.

Fluctuations in exchange rates can significantly impact Infosys Ltd.'s financial performance and financial position. The company operates in a global marketplace, where changes in exchange rates can influence revenues, expenses, and overall profitability. Through the analysis of exchange rate fluctuations, Infosys Ltd. can gain insights into the potential risks and opportunities that arise from currency movements. This analysis also helps in assessing the effectiveness of the company's hedging strategies and determining the extent to which these strategies have helped mitigate foreign exchange risks.

The study of foreign exchange risk management with reference to Infosys Ltd. is crucial for several reasons. Firstly, it provides insights into the challenges and opportunities faced by businesses operating in a global business environment, particularly those exposed to foreign currency risks. Understanding the specific challenges Infosys Ltd. encounters in managing foreign exchange risks can contribute to the development of best practices and strategies for risk mitigation in the industry.

Secondly, the study of foreign exchange risk management in the context of Infosys Ltd. can offer valuable lessons and insights to other multinational corporations facing similar challenges. By examining Infosys Ltd.'s risk management framework and strategies, other companies can learn from their experiences and apply relevant techniques to enhance their own foreign exchange risk management practices.

Lastly, studying foreign exchange risk management in the case of Infosys Ltd. contributes to the overall understanding of the importance of managing currency risks in a global market. As the global economy becomes increasingly interconnected, currency fluctuations can have far-reaching effects on international trade, economic stability, and financial markets. By studying the strategies and approaches employed by Infosys Ltd., regulators and policymakers can develop appropriate measures to promote effective risk management practices and ensure financial stability in the face of currency volatility.

Literature Review

Fred R. Glahe's (1967), examines the behaviour of foreign exchange markets using empirical data. The study tests a theoretical model of exchange rate determination that emphasizes the role of expectations and risk. The author finds that the data supports the theoretical model and highlights the importance of forward exchange rates in predicting future spot exchange rates. The study also explores the impact of interest rate differentials, inflation, and balance of payments on exchange rates. Overall, the study contributes to our understanding of the behaviour of foreign exchange markets.

Laurent L. Jacque (1981) examines the literature on foreign exchange risk management from the perspectives of finance, accounting, and international business. The article surveys various techniques used for managing foreign exchange risk, including forward contracts, options, swaps, and other hedging strategies. The author also discusses the challenges and limitations of these techniques and highlights the importance of developing a comprehensive risk management strategy that takes into account the unique characteristics of a firm's business and industry. The article provides a valuable resource for academics, practitioners, and students interested in foreign exchange risk management.

Richard K. Lyons (2002), argues that the global foreign exchange market is constantly evolving due to various technological and economic factors. He predicts that the FX market will continue to shift towards electronic trading and algorithmic trading strategies, which will increase market efficiency

and transparency. Lyons also discusses the implications of central bank policies, such as quantitative easing and exchange rate intervention, on the FX market. Finally, he notes that the future of the FX market will depend on how market participants, policymakers, and regulators respond to these changes and challenges.

MP Austin and RG Bates (2003), propose a novel approach for forex trading that uses an adaptive system based on genetic algorithms. The authors analyze the limitations of traditional trading strategies and highlight the potential of adaptive systems for identifying profitable trades in the highly dynamic forex market. The article provides a detailed description of the proposed system, which uses genetic algorithms to adapt to changing market conditions and optimize trading decisions. The authors present empirical results that demonstrate the effectiveness of the adaptive system in generating consistent profits in both simulated and real-world trading scenarios. The article concludes that the adaptive system can provide valuable insights for traders and investors looking to enhance their forex trading strategies.

Christopher J. Neely (2005), provides a comprehensive review of recent research on the impact of foreign exchange interventions on exchange rates. The author examines different types of interventions, including spot market intervention, foreign exchange swaps, and forward market intervention, and analyzes their effectiveness in influencing exchange rates. The article also discusses the challenges of evaluating the effectiveness of interventions due to the complexity of the forex market and the potential for endogeneity. Neely concludes that while there is evidence of some effectiveness in certain types of interventions, more research is needed to fully understand the impact of interventions on exchange rates.

Chris Becker and Daniel Fabbro (2006), discuss how Australian firms have used currency hedging to reduce their exposure to foreign exchange risk. The authors analyze the effectiveness of different hedging strategies and find that using options to hedge against currency fluctuations is the most effective method. The article also highlights the importance of understanding the underlying economic fundamentals of the countries involved in foreign exchange transactions when making hedging decisions. The authors conclude that currency hedging can be a valuable tool for managing foreign exchange risk and recommend that firms use a combination of different hedging strategies to achieve optimal results.

Michael Papaioannou (2006), discusses various issues and approaches related to the measurement and management of exchange rate risk by firms. The author highlights the importance of accurately measuring the risk exposure and proposes various quantitative techniques to do so. He also explores different risk management strategies including natural hedging, financial hedging, and operational hedging. The article emphasizes the need for firms to adopt a comprehensive approach to manage exchange rate risk, taking into account their specific circumstances and risk appetite. The author suggests that firms need to continuously monitor and evaluate their risk management strategies to ensure their effectiveness.

Riad Al-Momani and Mohammad R. Gharaibe (2008), investigate the foreign exchange risk management practices of nonfinancial firms in Jordan. The study utilizes a survey of 88 firms and finds that most firms are exposed to foreign exchange risk due to their international operations, but only a small percentage of them have implemented formal foreign exchange risk management practices. The paper identifies several factors that may hinder firms from implementing these practices, including lack of awareness, cost considerations, and the perception that foreign exchange risk is not a significant threat. The authors recommend that firms increase their awareness of foreign exchange risk and develop formal risk management strategies to better manage this risk.

Sathya Swaroop Debasish (2008), talks about his study conducted on the foreign exchange risk management practices of large non-banking Indian-based firms. The study focused on understanding the risk appetite and foreign exchange risk management practices of Indian corporate enterprises. The study found that there was a wide usage of derivative products for risk management, with the prime reason being a reduction in volatility of cash flows. The preferred method of risk evaluation was found to be the Value-at-Risk (VAR) technique. The study also found that the preference for external techniques for risk hedging was mostly in favor of forward contracts, followed by swaps and

cross-currency options. The article discusses various concerns of Indian firms regarding derivative usage and reasons for non-usage, apart from techniques of risk hedging, risk evaluation methods adopted, risk management policy, and types of derivatives used. The study is significant in the context of the liberalization of the Indian economy and the increasing awareness of the need for the introduction of various risk management products to enable hedging against market risk in a cost-effective way.

Xiaofeng Liu and Hua Cao (2011), proposes an improvement to the Value at Risk (VaR) method for foreign exchange (FX) risk measurement by incorporating macroeconomic information. The authors argue that the traditional VaR method does not consider macroeconomic factors that can affect the FX market and lead to inaccuracies in risk measurement. The proposed approach uses macroeconomic information to adjust the VaR estimates, resulting in more accurate risk measurement. The authors test their approach using data from the Chinese FX market and find that it outperforms traditional VaR methods in terms of accuracy and reliability.

Abhay Kumar Gupta (2016), an assistant professor at Sri Aurobindo College in Delhi, India, discusses various tools and techniques that can be used to manage foreign exchange exposure in India. These include financial hedges such as forward contracts, options, and swaps, as well as operational techniques such as invoice currency and netting. Gupta also notes the importance of keeping track of foreign exchange rates and conducting regular risk assessments to effectively manage foreign exchange exposure.

Paul Ainsworth (2019), has written a guide to managing foreign exchange risk. The guide outlines the options companies have for dealing with foreign exchange exposure and managing risk effectively. Ainsworth emphasizes the importance of forex risk management for everyone, from holidaymakers to multinational organizations, as the impact of getting it wrong can be substantial. Exchange rate fluctuations are an everyday occurrence, and it is crucial to have a plan in place to mitigate the risks associated with them.

Madhuchandrika N (2019), conducted a study on foreign exchange risk management (FERM) practices in Indian commercial banks from the perspective of both bankers and customers. The study found that banks in India use a combination of internal and external FERM techniques such as forwards, options, and swaps, but the use of derivatives is limited due to regulatory constraints. Customers also employ a variety of FERM techniques, but there is a lack of awareness and knowledge about these techniques among small and medium-sized enterprises. The study suggests that banks need to provide more education and guidance to customers on FERM to mitigate foreign exchange risk effectively.

Prakash Basanna and K. R. Pundareeka Vittala (2019), analyzes foreign exchange risk management (FERM) techniques used in the Indian pharmaceutical industry and their impact on exchange gain/losses. The study focuses on 10 sample companies from the industry, using foreign exchange cash flows arising from imports and exports during 2010-2017. The article notes that only USD and EUR are dominant in the forex market and that forward contracts are considered an effective hedging tool. The Indian pharmaceutical industry is the third largest in terms of size and likely to grow to \$55 billion by 2020, according to the authors.

Frances Coppola (2019), explains how foreign exchange risk is inherent in international business due to fluctuating currency values. The simplest strategy for reducing this risk is to make and receive payments only in one's own currency, but this can lead to cash flow risk and loss of customers. Hedging with currency forward contracts is a common risk management strategy, while options and swaps allow businesses to profit from exchange rate movements. Careful management of foreign currency cash positions and timing payments and receipts can also reduce foreign exchange risk.

Md. Saiful Islam, Emam Hossain, Abdur Rahman, Mohammad Shahadat Hossain, and Karl Andersson (2020), review the current state of research on using machine learning techniques for predicting foreign exchange currency rates. The authors analyze various machine learning algorithms and feature selection methods used in currency prediction, and also discuss the challenges and limitations of these methods. The article highlights the potential of machine learning for accurate and timely currency rate predictions, but notes that further research is needed to overcome the challenges

of data scarcity and volatility in the forex market. The authors conclude that these advancements in currency prediction can provide valuable insights for investors and traders in making informed forex trading decisions.

Megan O'Brien (2020), discussed the importance of foreign exchange risk management. The COVID-19 pandemic has caused significant economic uncertainty and volatility in currency markets, making it essential for companies to mitigate currency risks. The article outlines various strategies that companies can use to manage these risks, including forward contracts, options, and natural hedging. It also emphasizes the importance of having a robust foreign exchange risk management policy in place, as well as staying informed about global events and economic indicators that can affect currency markets.

Avani Ghangurde (2021), explores various currency hedging techniques that can be used by exporters to manage foreign exchange risk. The article provides a detailed explanation of the different types of hedging instruments such as forwards, options, and swaps, and discusses their advantages and disadvantages. Ghangurde also highlights the importance of understanding the specific needs and circumstances of the exporter when choosing a hedging strategy. The article concludes that by using effective currency hedging techniques, exporters can mitigate the impact of exchange rate fluctuations on their business and enhance their competitiveness in the global market.

Seema Jaiswal (2022), uses a non-parametric causality-in-quantiles approach to analyze the relationship between various economic indicators and the exchange rate in India. The author investigates the impact of different factors such as inflation, interest rates, and trade balance on the exchange rate, and employs a non-linear framework to capture the potential asymmetric effects of these factors on the exchange rate in different quantiles. The article demonstrates the usefulness of the proposed approach in predicting the direction and magnitude of exchange rate changes, and provides valuable insights for policymakers and investors in managing currency risk in India.

Akhilesh Ganti (2022), provides an overview of the foreign exchange market, including its history, how it works, and its pros and cons. The author explains how foreign exchange rates are determined and how the market is used for international trade and investment. The article also discusses the benefits and risks of participating in the foreign exchange market for individuals and businesses. Finally, the author explores the future of the foreign exchange market, including emerging technologies and potential challenges.

David Hudson (2023), provides a brief overview of the foreign exchange market (forex or FX market) as an institution for exchanging one country's currency with another's. The FX market is composed of various individual currency markets, such as the euro and the U.S. dollar. These markets are the oldest financial markets and provide international liquidity with relative stability, serving as the foundation for the rest of the financial structure.

Research Methodology

Research Design

The research design for this study will employ a descriptive research design, which aims to describe the foreign exchange risk management practices of Infosys Limited over the past seven years. This design is appropriate as it allows for a comprehensive analysis of the company's risk management strategies, policies, and financial instruments used to mitigate foreign exchange risks. By describing these practices, the study can provide insights into the effectiveness and potential areas for improvement in Infosys Limited's foreign exchange risk management.

Sources of Data

The source of the secondary data for this study will be the annual reports of Infosys Limited for the past seven years. These reports provide detailed information about the company's financial performance, including its exposure to foreign exchange risks and its risk management strategies. The annual reports will be carefully analyzed to extract relevant data pertaining to foreign currency hedging, financial risk management, and the usage of derivatives such as forward and option contracts.

In addition to the annual reports, secondary data will be collected from various sources such as books, scholarly articles, industry reports, and reputable financial websites. These sources will provide additional insights into foreign exchange risk management practices in general and help establish a theoretical framework for the study.

Data Collection

The data collection process will involve a thorough review and extraction of relevant information from the annual reports of Infosys Limited. Specific data points to be collected include the company's foreign assets and liabilities, the types of financial instruments utilized for hedging purposes (such as forward and option contracts), and any disclosures or discussions related to foreign exchange risk management strategies and policies and reputable sources such as Investopedia and Google Scholar, focusing on scholarly articles, books, and industry reports that discuss foreign exchange risk management practices and provide insights into best practices and challenges in the field.

Data Analysis

The collected data will be analyzed using both quantitative and qualitative methods. Quantitative analysis will involve examining trends and patterns in Infosys Limited's foreign exchange risk management practices over the seven-year period. This analysis will include assessing the company's exposure to foreign currency risks, the extent to which financial instruments such as forward and option contracts were used for hedging, and any changes or adjustments made to the risk management strategies over time. Qualitative analysis will involve a thematic analysis of the collected data to identify recurring themes and patterns in Infosys Limited's foreign exchange risk management practices. This analysis will help in understanding the company's approach to risk management, the challenges faced, and the effectiveness of their strategies in mitigating foreign exchange risks.

Conceptual Framework

The conceptual framework for this study will be developed based on a comprehensive literature review of foreign exchange risk management practices. The review will encompass academic journals, books, and industry reports that discuss theories, frameworks, and best practices in managing foreign exchange risks. The conceptual framework will provide a theoretical foundation for analyzing Infosys Limited's risk management practices and help in evaluating their alignment with established theories and best practices in the field.

By employing this research design, collecting and analyzing data from multiple sources, and developing a conceptual framework, this study aims to provide a comprehensive assessment of Infosys Limited's foreign exchange risk management practices, identify potential areas for improvement, and contribute to the existing body of knowledge on foreign exchange risk management.

Data Analysis

The research examines the Foreign Currency Risk from Financial Assets and Financial Liabilities and Derivative Financial Instruments of Infosys Ltd. from the past 7 years (2016-2022) which is an integral part of Foreign Exchange Risk Management.

4A. Analysis of the Foreign Currency Risk from Financial Assets and Financial Liabilities

4A.1 Foreign Currency Risk from Financial Assets and Financial Liabilities (US Dollars)

Table 1. Representing Data Analysis of Foreign Currency risk (US Dollars)

	US Dollars						
	in ₹ Crore						
Year	2016	2017	2018	2019	2020	2021	2022
Net Financial Assets	9,550	11,146	12,240	13,639	13,217	13,782	18,224
Net Financial Liabilities	1,992	1,992	2,562	4,191	5,337	5,959	9,205

Net Foreign Exchange Position	7,558	9,154	9,678	9,448	7,880	7,823	9,019
Trend % (Net Foreign Exchange Position)	0%	21.12%	5.72%	-2.38%	-16.60%	-0.72%	15.29%

Graph 1. Foreign Currency Risk (US Dollar)

Data Interpretation

The table above represents the Net Financial Assets, Net Financial Liabilities, and Net Foreign Exchange Position of Infosys Limited from 2016 to 2022.

Net Financial Assets: This represents the total financial resources owned by Infosys Limited, including cash, investments, and other assets. The values in the table are in Indian rupees crore and show an increase over time. In 2016, the Net Financial Assets were INR 9,550.00 crore, which increased to INR 18,224.00 crore in 2022.

Net Financial Liabilities: This represents the total financial obligations of Infosys Limited, including loans, accounts payable, and other liabilities. The values in the table are in Indian rupees crore and show an increase over time. In 2016 and 2017, the Net Financial Liabilities were INR 1,992.00 crore and remained the same. It increased to INR 2,562.00 crore in 2018 and further increased to INR 9,205.00 crore in 2022.

Net Foreign Exchange Position: This represents the difference between the foreign currency assets and liabilities of Infosys Limited and determines its exposure to currency risk. The values in the table are in Indian rupees crore and show fluctuations over time. In 2016, the Net Foreign Exchange Position was INR 7,558.00 crore, which increased to INR 9,154.00 crore in 2017 and then to INR 9,678.00 crore in 2018. However, it decreased to INR 9,448.00 crore in 2019, INR 7,880.00 crore in 2020, and INR 7,823.00 crore in 2021, and then slightly increased to INR 9,019.00 crore in 2022.

4A.2 Foreign Currency Risk from Financial Assets and Financial Liabilities (Euros)

Table 2. Data Analysis representing foreign currency risk from Euros

	Euros						
	in ₹ Crore						
Year	2016	2017	2018	2019	2020	2021	2022
Net Financial Assets	1,420	1,520	2,632	2,605	2,523	2,855	4,976
Net Financial Liabilities	274	232	498	463	942	1,058	3,158
Net Foreign Exchange Position	1,146	1,288	2,134	2,142	1,581	1,797	1,818
Trend % (Net Foreign Exchange Position)	0.00%	12.39%	39.64%	0.37%	-26.19%	13.66%	1.17%

Graph 2. Foreign Currency Risk (Euros)

Data Interpretation

The data provided represents the financial position of Infosys Limited in Euros and Indian Rupees (INR crore) for the years 2016 to 2022. The key financial metrics included in the data are the company's net financial assets, net financial liabilities, and net foreign exchange position.

Infosys Net Financial Assets steadily increased from 1,420.00 crores of Indian Rupees in 2016 to 4,976.00 crores in 2022. This is a significant increase over the years, which suggests that Infosys has been generating more cash and accumulating more financial assets while effectively managing its financial liabilities.

However, it's worth noting that the rate of growth has not been consistent, and there have been some fluctuations along the way. For example, from 2016 to 2017, there was an increase of 100.00 crores, which is a relatively modest gain compared to the following years, where the gains were much more substantial. Similarly, there was a slight dip in 2020, but the overall trend remained positive.

Net financial liabilities, on the other hand, represent the value of the company's financial obligations, such as debt and payables, minus its financial assets. From the data, we can see that Infosys' net financial liabilities have fluctuated over the years, with a peak in 2022 at 3,158.00 Euros. This suggests that the company has taken on more financial obligations in recent years, potentially to finance growth opportunities or investments.

Infosys' Net Foreign Exchange Position has been relatively stable over the years, with some fluctuations. In 2016, the Net Foreign Exchange Position was 1,146.00 crores, and it increased to 1,818.00 crores in 2022. This suggests that Infosys has been effectively managing its foreign currency exposure and maintaining a stable position in foreign markets.

However, it's worth noting that there have been some fluctuations along the way, and the rate of increase has not been consistent. For example, there was a substantial increase in 2018, with the Net Foreign Exchange Position increasing by 846.00 crores. Still, the gains in subsequent years were more modest.

4A.3 Foreign Currency Risk from Financial Assets and Financial Liabilities (GBP)

Table 3. Data analysis of foreign currency risk from GBP

Year	GBP						
	in ₹ Crore						
Year	2016	2017	2018	2019	2020	2021	2022
Net Financial Assets	1,052	1,191	1,322	1,308	1,205	1,153	1,510
Net Financial Liabilities	272	180	329	397	673	643	666
Net Foreign Exchange Position	780	1,011.00	993	911	532	510	844
Trend % (Net Foreign Exchange Position)	0%	28.46%	-7.72%	-9.00%	-41.60%	-4.14%	65.49%

Graph 3. Foreign Exchange Risk (GBP)

Data Interpretation

The table shows that the company's Net Financial Assets in Pounds have shown a fluctuating trend over the years. It started at 1,052 crore rupees in 2016 and increased to 1,322 crore rupees in 2018, but then dropped to 1,205 crore rupees in 2020. However, it increased again to 1,510 crore rupees in 2022. This trend indicates that Infosys has been able to manage its financial assets effectively, with some fluctuations due to changing economic conditions.

Net Financial Liabilities, on the other hand, refer to the total value of a company's liabilities minus its financial assets. In the case of Infosys, the company's Net Financial Liabilities in Pounds have been showing an increasing trend over the years. It started at 272 crore rupees in 2016 and increased to 329 crore rupees in 2018. Then, it further increased to 673 crore rupees in 2020, before decreasing slightly to 666 crore rupees in 2022. This trend indicates that Infosys has been taking on more debt or financial obligations, which can be a cause for concern if not managed properly.

Finally, the Net Foreign Exchange Position refers to the difference between a company's foreign currency assets and its foreign currency liabilities (GBP). In the case of Infosys, the company's Net Foreign Exchange Position has been fluctuating over the years. It started at 780 crore rupees in 2016 and increased to 993 crore rupees in 2018 before decreasing to 532 crore rupees in 2020. However, it has increased again to 844 crore rupees in 2022. This trend indicates the need for effective management of foreign currency exposure.

In conclusion, the presented data on Infosys Limited's financial performance in terms of Net Financial Assets, Net Financial Liabilities, and Net Foreign Exchange Position in GBP and Indian Rupees from 2016 to 2022 provides valuable insights into the company's financial health. Overall,

the data suggests that Infosys has been successful in managing its financial assets, with a consistent increase in Net Financial Assets in Pounds.

4A.4 Foreign Currency Risk from Financial Assets and Financial Liabilities (AUD)

Table 4. Foreign currency risk from Financial Instruments (AUD)

	AUD						
	in						
	₹ Crore						
Year	2016	2017	2018	2019	2020	2021	2022
Net Financial Assets	673	726	1,314.00	1,501.00	785	1,182.00	1,350.00
Net Financial Liabilities	232	198	303	367	310	717	975
Net Foreign Exchange Position	441	528	1,011.00	1,134.00	475	465	375
Trend % (Net Foreign Exchange Position)	0.00%	16.48%	47.77%	10.85%	-58.11%	-2.11%	-19.35%

Graph 4. Foreign Exchange Risk (AUD)

Data Interpretation

The data indicates that Infosys' Net Financial Assets in AUD have fluctuated over the years, with a notable increase from Rs 673 crores in 2016 to Rs 1,314 crores in 2018. However, there has been a decline in Net Financial Assets in AUD in 2020 and 2021, followed by a slight increase in 2022. Overall, Infosys has been able to maintain a positive Net Financial Asset position, indicating that the company has more financial assets than liabilities in AUD. The data suggests that Infosys has been able to manage its financial liabilities effectively, with Net Financial Liabilities in AUD being consistently lower than Net Financial Assets. However, the data shows an increase in Net Financial Liabilities from Rs 232 crores in 2016 to Rs 975 crores in 2022. This increase may be attributed to factors such as changes in global economic conditions, company investments, or borrowing.

The Net Foreign Exchange Position of Infosys in AUD has fluctuated over the years, with a notable increase from Rs 441 crores in 2016 to Rs 1,011 crores in 2018. However, there has been a decline in the Net Foreign Exchange Position in AUD in 2019 and 2020, followed by a slight increase in 2021 and a further decrease in 2022. The fluctuation in the Net Foreign Exchange Position may be due to changes in global foreign exchange rates or fluctuations in Infosys' financial activities.

In conclusion, the data suggests that Infosys has been able to manage its financial assets effectively, with a positive Net Financial Asset position in AUD. However, the company needs to monitor the increase in Net Financial Liabilities and take necessary measures to maintain a sustainable financial position. The fluctuation in Net Foreign Exchange Position in AUD indicates the need for effective management of global foreign exchange risks.

4B. Comparison of Trend% of the Net Foreign Exchange Position.

Table 5 Trend% in Currencies 2016-22

Year	2016	2017	2018	2019	2020	2021	2022
Trend % USD	0%	21.12%	5.72%	-2.38%	-16.60%	-0.72%	15.29%
Trend % Euros	0.00%	12.39%	39.64%	0.37%	-26.19%	13.66%	1.17%
Trend % GBP	0%	28.46%	-7.72%	-9.00%	-41.60%	-4.14%	65.49%
Trend % AUD	0.00%	16.48%	47.77%	10.85%	-58.11%	-2.11%	-19.35%

resulting from changes in the value of the GBP. GBP is the currency of the United Kingdom and could be relevant for Infosys Ltd if it has operations or investments in the UK.

Graph 6. Representing the Cash Flow Hedge done with Option Contract

The above graph represents that Infosys Ltd has used derivative instruments such as option contracts to hedge its currency risk exposure against potential losses due to fluctuations in foreign exchange rates. The company has used cash flow hedges for three currencies - AUD, EURO, and GBP - which are relevant currencies for Infosys Ltd due to its operations or investments in Australia, Europe, and the UK. The data shows that the amount of option contracts designated as cash flow hedges has increased over the years for all three currencies, indicating that the company has taken proactive measures to manage its currency risk exposure. This shows that Infosys Ltd is taking a conservative approach to managing its finances and is taking steps to minimize any potential losses due to foreign currency fluctuations. It is important to note that while cash flow hedges can provide some protection against currency risks, there are risks associated with using derivative instruments such as option contracts. These risks include the potential for losses if the underlying asset moves in an unexpected direction, and the potential for increased transaction costs and complexity.

4C.2. Derivatives Designated as Cash Flow Hedge with Forward Contract

Table 7. Cash flow hedge with forward contract

	Amount in the Particular Year In ₹ Crores						
	2016	2017	2018	2019	2020	2021	2022
Derivatives Designated as Cash Flow Hedge							
Forward Contract							
AUD	0	0	0	0	0	0	0
EURO	0	277	0	0	0	0	67
GBP	0	0	0	0	0	0	0

Data Interpretation

In this table, the amounts for the forward contracts designated as cash flow hedge are reported. Cash flow hedging is a technique used to manage risk arising from cash flow mismatches. It involves using financial instruments to offset the cash flow risks associated with future transactions or investments. The aim is to mitigate the impact of changes in currency exchange rates on cash flows. For the year 2016, there were no amounts reported for any of the three currencies, indicating that no forward contracts were designated as cash flow hedges. Similarly, there were no amounts reported for any of the currencies in the subsequent years up to 2018.

In 2019, there were no amounts reported for any of the currencies, indicating that no forward contracts were designated as cash flow hedges. The same is true for 2020. In 2021, an amount of 277 Crores was reported for the EURO forward contract designated as a cash flow hedge. This indicates that the company used a EURO forward contract to manage cash flow risk arising from a transaction or investment denominated in EURO. No amounts were reported for the other two currencies.

In 2022, an amount of 67 Crores was reported for the EURO forward contract designated as a cash flow hedge. This indicates that the company continued to use a EURO forward contract to manage cash flow risk arising from a transaction or investment denominated in EURO. No amounts were reported for the other two currencies.

The company has used EURO forward contracts in 2021 and 2022 to manage cash flow risk arising from a transaction or investment denominated in EURO, with no reported amounts for AUD or GBP. No forward contracts were designated as cash flow hedges for any currency in 2016 to 2020.

Graph 7. Cash Flow Hedge done with Forward Contract

4C.3. Other Derivatives Designated with Forward Contract

Table 8. An Exhaustive Data Analysis of Other Derivatives Designated with Forward Contract

	Amount in the Particular Year In ₹ Crores						
	2016	2017	2018	2019	2020	2021	2022

Other Derivatives							
Forward Contract							
USD	3094	3113	4061	5910	6990	7390	8853
AUD	255	149	25	0	0	0	0
EURO	633	735	735	1289	1415	1295	2501
GBP	573	566	466	634	421	151	646
CAD	0	0	99	68	117	194	205

Data Interpretation

The information presented in the above table is that the usage of USD forward contracts has increased steadily over the years, starting from 3094 Crores in 2016 to 8853 Crores in 2022. The largest increase in usage was seen from 2018 to 2019, where the usage of USD forward contracts increased by 1839 Crores. The increase in usage of USD forward contracts may suggest that the company has increased its exposure to USD-denominated transactions or investments over the years. The usage of AUD forward contracts has been relatively low and has decreased significantly over the years, with only 255 Crores reported in 2016 and no reported amounts in 2021 and 2022. The largest decrease in usage was seen from 2017 to 2018, where the usage of AUD forward contracts decreased by 124 Crores. The decrease in usage of AUD forward contracts may suggest that the company has reduced its exposure to AUD-denominated transactions or investments over the years.

The usage of EURO forward contracts has been fluctuating over the years, with a high of 1415 Crores in 2020 and a low of 633 Crores in 2016. The largest increase in usage was seen from 2017 to 2018, where the usage of EURO forward contracts increased by 735 Crores. The largest decrease in usage was seen from 2021 to 2022, where the usage of EURO forward contracts decreased by 794 Crores. The fluctuations in usage of EURO forward contracts may suggest that the company has been actively managing its exposure to EURO-denominated transactions or investments

The usage of GBP forward contracts has been fluctuating over the years, with a high of 646 Crores in 2022 and a low of 151 Crores in 2021. The largest increase in usage was seen from 2017 to 2018, where the usage of GBP forward contracts increased by 100 Crores. The largest decrease in usage was seen from 2020 to 2021, where the usage of GBP forward contracts decreased by 270 Crores. The fluctuations in usage of GBP forward contracts may suggest that the company has been actively managing its exposure to GBP-denominated transactions or investments.

The usage of CAD forward contracts has been fluctuating over the years, with a high of 205 Crores in 2022 and a low of 0 Crores in 2016. The largest increase in usage was seen from 2019 to 2020, where the usage of CAD forward contracts increased by 77 Crores. The fluctuations in usage of CAD forward contracts may suggest that the company has been actively managing its exposure to CAD-denominated transactions or investments.

The usage of USD forward contracts has steadily increased over the years, while the usage of AUD forward contracts has decreased significantly. The usage of EURO and GBP forward contracts has been fluctuating over the years, with the company actively managing its exposure to each currency. The fluctuations in usage of CAD forward contracts also suggest that the company has been actively managing its exposure to CAD-denominated transactions or investments. Overall, the usage of other derivatives in the form of forward contracts for each currency reflects the company's risk management strategy in managing the impact of currency exchange rate fluctuations on its business.

Graph 8. Other Derivatives Hedge done with Forward Contract
4C.4. Other Derivatives Designated with Option Contract

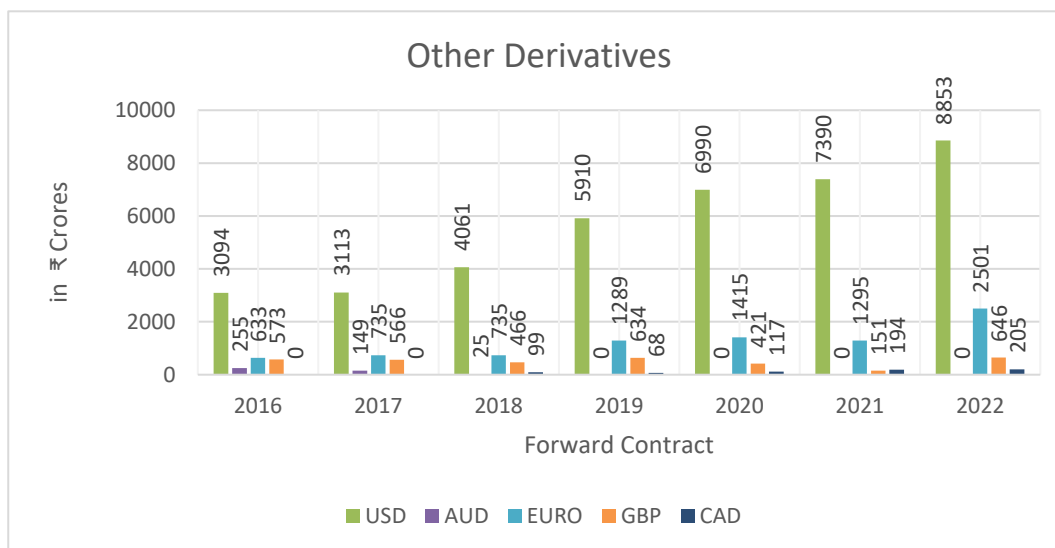


Table 9. Data Analysis of other derivatives with option contract

	Amount in the Particular Year							In ₹ Crores
	2016	2017	2018	2019	2020	2021	2022	
Other Derivatives								
Option Contract								
USD	828	1265	2086	2995	4196	2946	5131	
AUD	0	0	100	49	0	0	0	
EURO	0	173	363	466	0	0	0	
GBP	0	243	231	91	0	0	0	
CAD	0	173	363	466	0	557	682	

Data Interpretation

The table provided shows the amount in crores of other derivatives in the form of option contracts for five currencies (USD, AUD, EURO, GBP, CAD) in the years 2016 to 2022.

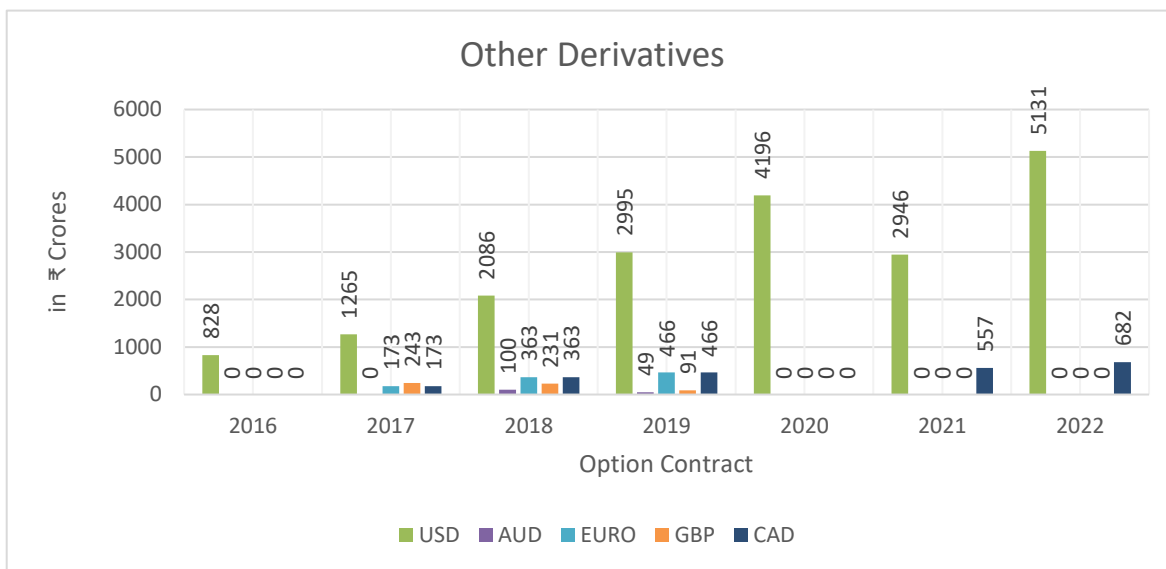
The usage of USD option contracts has steadily increased over the years, from 828 crores in 2016 to 4196 crores in 2020. This suggests that the company has been using USD option contracts as a part of its risk management strategy for managing the impact of currency exchange rate fluctuations on its business. However, there was a sharp decrease in usage in 2021, to 2946 crores, followed by an increase to 5131 crores in 2022. The reason for this fluctuation is not clear from the table alone, but it suggests that the company may have adjusted its risk management strategy or had different currency exposures in those years.

The usage of AUD option contracts was minimal in 2016 and 2017, with no reported usage. The usage increased to 100 crores in 2018 and then decreased to 49 crores in 2019, before being reported as zero from 2020 to 2022. This suggests that the company may have had exposure to AUD-denominated transactions or investments in the past, but has since reduced or eliminated such exposure. The usage of EURO option contracts increased from 2016 to 2019, with reported usage of 173 crores in 2017, 363 crores in 2018, and 466 crores in 2019. However, the usage was reported as zero from 2020 to 2022. This suggests that the company may have had exposure to EURO-denominated transactions or investments in the past, but has since reduced or eliminated such exposure. While the usage of GBP option contracts increased in 2017 and 2018, with reported usage of 243 crores in 2017 and 231 crores in 2018. However, the usage decreased to 91 crores in 2019 and was reported as zero from 2020 to 2022. This suggests that the company may have had exposure to

GBP-denominated transactions or investments in the past, but has since reduced or eliminated such exposure.

The usage of CAD option contracts increased from 173 crores in 2017 to 466 crores in 2019, before being reported as zero in 2020. However, the usage increased again to 557 crores in 2021 and 682 crores in 2022. This suggests that the company has been actively managing its exposure to CAD-denominated transactions or investments, and has used CAD option contracts as a part of its risk management strategy.

Graph 9. Other Derivatives Hedge done with Option Contract



Conclusion

Infosys has demonstrated effective financial management by maintaining a strong financial position. The company's financial statements, including balance sheets and income statements, provide insights into its financial health and performance. Through careful monitoring of key financial indicators such as liquidity ratios, leverage ratios, and profitability measures, Infosys ensures a stable financial position.

Fluctuations in currency exchange rates can impact the company's financial performance and profitability. To mitigate these risks, Infosys employs various financial instruments, with forward contracts being a prominent tool. Forward contracts are financial instruments that enable companies to lock in future exchange rates for a specific currency. Infosys utilizes forward contracts to hedge against potential adverse currency movements. By entering into forward contracts, the company secures a known exchange rate, providing stability and predictability in its financial transactions.

The usage of forward contracts helps Infosys in several ways. Firstly, it minimizes the uncertainty associated with currency fluctuations, ensuring accurate financial forecasting and budgeting. This enables Infosys to make informed decisions regarding pricing strategies, investments, and resource allocation. Secondly, forward contracts provide a degree of protection against volatile currency markets, reducing the risk of financial loss due to unfavourable exchange rate movements.

While Infosys has demonstrated effective financial management and currency risk mitigation, ongoing monitoring and management are crucial to maintain long-term sustainability and success. The global economic landscape is dynamic, with currency markets constantly evolving. Infosys must adapt its strategies to manage emerging risks effectively. Continuous monitoring of currency markets and economic indicators allows Infosys to anticipate potential currency movements. This proactive approach enables the company to make timely adjustments to its hedging strategies, ensuring optimal utilization of forward contracts. Effective management also involves periodically reassessing the company's exposure to different currencies and evaluating the appropriateness of the existing risk management framework. Infosys should also consider diversifying its risk management strategies beyond forward contracts and options contracts.

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