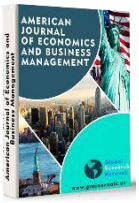

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Article

Assessment and Management of Foreign Exchange Risks in Commercial Banks

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Abstract: Foreign exchange (FOREX) risk has become a critical challenge for commercial banks due to the increasing volatility in global currency markets. Since the collapse of the Bretton Woods system, banks have faced fluctuating currency values that affect their financial stability, profitability, and international competitiveness. While extensive research exists on the relationship between currency volatility and banking performance, findings remain inconclusive and context-dependent, especially regarding how banks psychologically assess and manage these risks. This study aims to evaluate the impact of foreign exchange risk on commercial bank profitability using Prospect Theory to explain behavioral responses in decision-making. The findings show that exchange rate fluctuations can significantly affect banks' profitability, particularly when risk is not mitigated through adequate hedging, open position controls, or diversification strategies. Empirical analysis based on data from the Central Bank of Uzbekistan and international sources confirms that banks with proactive FX risk frameworks maintain better capital adequacy and operational stability. This study uniquely applies Prospect Theory to analyze how psychological attitudes toward losses influence bank strategies in managing currency exposure, enriching the behavioral finance discourse in the context of international banking. Effective currency risk management—through instruments such as forward contracts, options, and swaps—enhances financial planning, profit margins, and capital market confidence. The research underscores the importance of aligning FX risk strategies with bank size, regulatory frameworks, and global exposure levels to ensure sustainable profitability in an increasingly volatile financial environment.

Keywords: Foreign Exchange Risk, Bank Profitability, Currency Volatility, Prospect Theory, Risk Management, Financial Stability, International Finance, Banking System

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1. Introduction

Foreign exchange (FOREX or FX) risk pertains to the susceptibility of a firm's financial stability to fluctuations in currency exchange rates. This concern has been prominent among investors, analysts, managers, and shareholders since the dissolution of the Bretton Woods fixed exchange rate system in 1971 [1]. Such volatility can result in either increased or decreased profits, reflecting corresponding improvements or deteriorations in a company's financial performance [2]. Exposure, in this context, refers to contracted, projected, or contingent cash flows whose exact magnitude is presently uncertain and depends on the value of foreign exchange rates [3]. Risks are defined as factors that can impede the attainment of specific objectives, encompassing both internal and external elements, as well as unexpected variability in returns.Banks are particularly susceptible to risks stemming from economic uncertainties [4]. Determining the

appropriate level of capital is crucial to mitigate risks and adequately compensate for the risks undertaken.

Foreign exchange involves the conversion of one nation's currency into another's through financial institutions such as banks, investors, and governments [5]. This process introduces additional uncertainty or variability in a firm's cash flows attributable to currency exchange rate fluctuations. As economies become more open and international trade expands, companies' exposure to exchange rate fluctuations increases [6]. Foreign exchange risk arises when unforeseen fluctuations in exchange rates alter the amount of domestic currency required to repay FOREX-denominated debt [7].

Measuring foreign exchange risk involves calculating the ratio of net foreign currency exposure (assets minus liabilities) to total assets [8]. Individuals and businesses engaged in international transactions should be cognizant of the risks associated with currency fluctuations. If commercial contracts are not denominated in domestic currency or fixed at an agreed exchange rate, there is exposure to exchange risk. While it is impossible to eliminate all risks, individuals and companies can effectively anticipate and manage adverse exchange rate outcomes by understanding typical foreign exchange risks, demanding transactions in hard currency, diversifying appropriately, and employing hedging strategies [9].

Literature Review

Prospect theory, a cornerstone of behavioral economics, posits that individuals and institutions evaluate potential outcomes based on perceived gains and losses relative to a reference point, rather than solely on final outcomes. This framework suggests that decision-makers exhibit loss aversion, meaning losses often have a more substantial psychological impact than equivalent gains. In the context of foreign exchange (FOREX) risk and banking performance, prospect theory provides valuable insights into how banks perceive and respond to currency fluctuations.

Banks' reactions to exchange rate movements are influenced by their subjective assessments of potential gains or losses. Almaqtari et al [10] highlighted the significance of exchange rates as predictors of bank profitability, aligning with prospect theory's assertion that entities respond differently based on their gain-loss perceptions. Gabaix and Maggiori [11] further examined how currency fluctuations impact balance sheets, affecting the compensation financiers require for bearing currency risk. This dynamic underscores the concept of gains and losses central to prospect theory, as banks adjust their risk exposure in response to perceived outcomes.

Additionally, Zhang and Li [12] demonstrated that the interplay between expectation formation and risk attitudes concerning exchange rates is significantly influenced by changing risk-profit elasticity. This relationship is shaped by psychological factors emphasized in prospect theory, highlighting how banks' perceptions of potential gains or losses drive their responses to exchange rate fluctuations, subsequently impacting their performance. Understanding these risk-benefit assessments offers insights into banking decision-making processes influenced by prospect theory.

The impact of foreign exchange risk on bank profitability has been a subject of extensive research, yielding diverse and sometimes inconclusive findings. Some studies have identified a negative correlation between foreign exchange risk and bank performance. For instance, research focusing on banks in the Middle East and North Africa (MENA) region revealed that higher exposure to foreign exchange risk is associated with lower performance metrics, suggesting that increased risk leads to diminished profitability.

Conversely, other studies have found that foreign exchange volatility does not significantly impact bank performance. For example, Ding observed that currency fluctuations did not have a substantial effect on the performance of certain financial

models, indicating that the relationship between exchange rate volatility and bank profitability may vary depending on specific contexts and mitigating factors.

Chen et al. analyzed the types of currency risks that affect banks' profitability and their management strategies in their study. They believe that banks are more sensitive to short-term currency fluctuations, which negatively affects their capital adequacy and profitability. They recommended the active use of derivatives (forwards, futures) to reduce currency risk. This approach is especially important for banks that conduct extensive international operations, since sharp changes in exchange rates can undermine their financial stability [13].

Kurihara analyzed the impact of global foreign exchange market fluctuations on the profitability and profitability of Japanese banks. He found that sharp fluctuations in the exchange rate directly affected banks' lending decisions and interest rate policies. At the same time, the study also noted that banks with high diversification were more effective in managing foreign exchange risk [14].

A study by Choi & Elyasiani examined the foreign exchange risk positions of large commercial banks in the United States. Using Prospect Theory, they analyzed how psychological factors in banks' decision-making—particularly fear of loss—influenced their risk management strategies. They concluded that in times of high foreign exchange risk, banks tend to choose safer investments and adopt risk-reducing strategies [15], [16].

Furthermore, the influence of exchange rates on banks can be indirect, affecting factors such as foreign competition, loan demand, and overall banking conditions. Fluctuations in exchange rates can impact the collateral value for loans, thereby influencing banks' lending decisions and profitability.

In summary, while prospect theory provides a framework for understanding banks' behavioral responses to foreign exchange risk, empirical evidence on the direct impact of exchange rate volatility on bank profitability remains mixed. This suggests that banks' performance in the face of foreign exchange risk is contingent upon various factors, including their risk management strategies, market conditions, and individual risk perceptions.

2. Materials and Methods

This research aims to assess the impact of foreign exchange risk on bank profitability. The theoretical basis of the study is Prospect Theory, as this theory more accurately explains the attitude towards risk in decision-making. This theory served as a useful conceptual framework for analyzing how banks respond to currency risk.

In the study, bank profitability was determined as the main dependent variable. The rate of change in the foreign exchange rate was selected as the independent variable. Capital adequacy, loan portfolio size, and bank liquidity were taken into account as control variables.

The data were collected from the official statistical data of the Central Bank of the Republic of Uzbekistan, annual reports of banks, and open databases of international financial organizations as the main sources. The results of the analysis showed the need to take into account currency risks in ensuring the financial stability of banks [17].

3. Results and Discussion

It is acknowledged that specific foreign exchange risk practices may differ among banks depending upon factors such as bank's size, and the nature and complexity of its activities. However, a comprehensive foreign exchange risk program should deal with good management information systems, contingency planning and other managerial and analytical techniques. With this view in mind, this document sets out the guidance for managing risks with regard to foreign exchange which the banks follow in determining their risk acceptance criterion then for setting out various internal risk limits that should

be subject to periodic reviews. The compliance of these guidelines is subject to periodic regulatory audit.

Foreign exchange risk is the potential for a business engaged in international trade to face financial losses due to currency rate fluctuations. When the value of involved currencies shifts, it can alter the actual cost of imported goods, affect revenues from exports, or raise expenses for overseas expansion projects. Additionally, investments in foreign companies may decline in value solely because of changes in exchange rates.

Foreign exchange risk occurs when a business conducts financial transactions in a currency different from its domestic currency. Fluctuations—either a rise or fall—in the value of the home or foreign currency can impact the resulting cash flows from those transactions.

Types of Foreign Exchange Risk

There are three main categories of foreign exchange (FX) risk:

a. Transaction Risk: This arises when a business purchases goods or services from a foreign supplier, with the price set in the supplier's currency. If the foreign currency strengthens against the buyer's home currency before payment is made, the buyer will need to pay more in their own currency to settle the agreed amount.
b. Translation Risk: A company with foreign subsidiaries may incur losses when converting the subsidiary's financial statements, prepared in the local currency, into the parent company's reporting currency. Changes in exchange rates during this process can distort the financial results.
c. Economic Risk: Also known as forecast risk, this refers to the longer-term impact of currency fluctuations on a company's market value and future cash flows. This type of risk affects the company's competitive position and financial performance over time.

To manage foreign exchange risk, companies often use hedging techniques such as forward contracts, currency options, and other complex financial instruments. When applied effectively, these tools can help shield a business from negative currency movements.

Financial derivatives give companies the ability to lock in exchange rates for future transactions, providing coverage and protection against market volatility. Some of the key financial derivatives for managing exchange rate risk include:

Forward contracts: these are customised agreements between two parties to buy or sell a specific amount of foreign currency at a predetermined price on a future date. They are not traded on an exchange and are completely customisable. They are ideal for companies with known future obligations in foreign currency, such as import payments or receipts from exports.

Currency options: these offer companies the right, but not the obligation, to buy or sell currency at a predetermined price. They are useful for companies and investors who want to hedge against exchange rate fluctuations while also taking advantage of favorable currency movements.

Currency swaps: these are contracts in which two parties agree to exchange two cash flows in different currencies over a specified period. They combine elements of forward contracts and loans in different currencies. This instrument is commonly used by multinational companies and investors to manage exposure to exchange rate risk, finance investments in foreign currencies, and improve liquidity management efficiency.

One of the tools is diversifying currency. Diversifying across different currencies can be an effective strategy to spread the risk. Holding assets and conducting transactions in multiple currencies allows businesses to offset potential losses in one currency with gains in another. Particularly Bank in Uzbekistan pay attention to open currency position to mitigate currency risk. Limit for single currency is 10% of regulatory Capital of bank while

15% of Regulatory capital for all currency position. A well as the Banks include currency risk come from open currency position to calculate RWA, in turn to assess capital adequacy ratio. Also banks should focus on to be the same currency between loans and their funding to avoid currency risk.

Table 1. We can from the table below about exchange rates of foreign currencies against UZS for 2024 [16].

Period	1 USD	Change, (+/-)	1 Euro	Change, (+/-)
January	12 398,38	62,49	13 549,45	80,21
February	12 475,21	76,83	13 461,09	-88,36
March	12 550,28	75,07	13 632,88	171,79
April	12 670,33	120,05	13 616,38	-16,50
May	12 686,96	16,63	13 701,76	85,37
June	12 619,93	-67,03	13 602,99	-98,77
July	12 606,40	-13,53	13 670,54	67,56
August	12 634,14	27,74	13 889,41	218,87
September	12 711,30	77,15	14 118,32	228,91
October	12 784,37	73,08	13 959,70	-158,62
November	12 815,19	30,82	13 639,20	-320,50

Effective currency risk management can provide essential help to multinational corporations for several reasons:

a. Protecting Profit Margins: Currency fluctuations can impact the competitiveness and profitability of multinational corporations by affecting the costs of imported goods and services, as well as the revenues generated from exports.
b. Maintaining Financial Stability: Currency risk can introduce volatility into financial statements, affecting investor confidence and the ability of multinational corporations to access capital markets at favorable terms.
c. Enhancing Predictability: By implementing currency risk management strategies, multinational corporations can enhance predictability and stability in cash flows, enabling better financial planning and budgeting.

The main roles and responsibilities of these two departments in term of controlling and managing currency risk given in the following:

Traders/Risk-Taking Units:

a. Adhere strictly to the approved market risk limit policies and operate within the designated independent market risk limits.
b. Prevent any breaches by securing prior approval for higher limit needs when necessary.
c. Notify the market risk management team about any strategic changes or product shifts that could impact the current market risk limit structure.

d. Obtain authorization from market risk management before initiating trades in new financial instruments.

Market Risk Management:

a. Conduct an annual review of the policy and make updates as needed.
b. Independently determine relevant market risk factors for each risk-taking function.
c. Collaborate with trading units to draft proposals for setting independent risk limits and triggers.
d. Ensure all limits and triggers are properly defined and justified.
e. Monitor adherence to the set market risk limits and triggers independently.
f. Validate that limits and triggers remain suitable over time; formally reassess the framework annually.
g. Approve limit frameworks and any proposed changes, when applicable.
h. Assess and approve any temporary limit increases.
i. Suggest corrective measures in the event of any limit violations.
j. Keep detailed records of all breaches, including steps taken and resolution timelines.
k. If applicable, review and approve limit frameworks, as well as limit change requirements.
l. Review and approve any temporary limit requirements.
m. Recommend corrective actions for any limit excesses .

Maintain documentation of limit breaches, including corrective action and resolution date.

4. Conclusion

Banks should align their FX settlement risk management procedures with the scale and complexity of their operations. Regardless of the settlement method, managing FX settlement risk must start at the top, with the board of directors establishing a clear policy.

Senior management is responsible for ensuring proper oversight of FX settlement exposures. While organizational structures differ, FX risk should be embedded within the broader risk management framework. Effective management requires coordination across multiple departments, such as trading, credit, legal, operations, risk, branches, and correspondent banking.

To manage FX exposures accurately, banks must know the exact cutoff time for unilaterally cancelling payment orders in each currency. While it may seem they can revoke orders right before final settlement, operational norms, payment systems, and legal agreements often render these orders irrevocable well before actual payment occurs.

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