FOREIGN EXCHANGE DERIVATIVE MARKET IN NEPAL

Nepal Rastra Bank
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CONTENTS

TABLES

FIGURES

FOREWORD

Foreign exchange derivative is a specialized contract dealing with foreign exchange risk. It has been introduced long ago in Nepal but limited practice has been seen in the market due to a lack of awareness, capacity, and adequate legal provisions. Nepal Rastra Bank has allowed commercial banks and development banks (national level) to use foreign exchange derivative instruments such as forwards, options, swaps, and futures. With liberalization and opening up of foreign trade, increase in remittance and FDI inflow, foreign currency exposure risks are inevitable and growing.

The trading volume of foreign exchange derivative products among commercial banks amounted to Rs.228.94 billion as in mid-July 2020. The non-deliverable forwards are the most dominant foreign exchange derivative instrument used, volume-wise, followed by deliverable forwards and swaps. However, the use of other derivative instruments is limited.

The study aims to assess the current use of derivative instruments and seeks to look into a way forward to develop a foreign exchange derivative market in Nepal. This study is the first of its kind to analyze the foreign exchange derivative market. I hope this report will provide valuable information and insights to the stakeholders.

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ABBREVIATIONS

BIS	Bank for International Settlements
BSE	Bombay Stock Exchange
CME	Chicago Mercantile Exchange
FEDAN	Foreign Exchange Dealers' Association of Nepal
FEMD	Foreign Exchange Management Department
FERA	Foreign Exchange (Regulation) Act
FII	Foreign Institutional Investor
FX	Foreign Exchange
FY	Fiscal Year
GBP	Great Britain Pound
GDP	Gross Domestic Product
INR	Indian Rupee
JPY	Japanese Yen
MCX	Multi-Commodity Exchange
MMA	Maldives Monetary Authority
MoF	Ministry of Finance
NDF	Non-Deliverable Forwards
NEPSE	Nepal Stock Exchange
NPR	Nepalese Rupee
NSE	National Stock Exchange
NRB	Nepal Rastra Bank
OTC	Over the Counter
R&D	Research and Development
RBI	Reserve Bank of India
RMA	Royal Monetary Authority
SAARC	South Asian Association for Regional Co-operation
SBAN	Stock Brokers' Association of Nepal
SEBI	Securities and Exchange Board of India
SEBON	Securities Board of Nepal
USD	United States Dollar

EXECUTIVE SUMMARY

A derivative is a contract whose price is derived from an underlying item to guard economic agents against uncertainties of fluctuations in the price of the asset. Foreign exchange derivative can be used as an instrument to hedge the risk arising out of exchange rate fluctuations. The study aims to look after the current use of derivative products, review the legal and regulatory framework and analyze the prospects of the foreign exchange derivative market in Nepal using literature review, questionnaire survey and focus group discussion among stakeholders.

The study reviews foreign exchange (FX) derivatives markets of the SAARC region and draws important insights for Nepal. The study finds that FX derivative market is operational in the emerging economies of Bangladesh, India, Pakistan, and Sri Lanka. However, other South Asian economies are yet to develop the FX derivative market. It turns out the more FX exposure and developed financial market, the better is the scope for FX derivative market.

The survey finds that the use of derivative products from commercial banks has increased by about 60 percent with a trading volume of Rs. 143.12 billion in the week ending mid-July 2018 to Rs. 228.94 billion in the same period of 2020. The study also finds that the derivative instruments used in Nepal are limited to forward and swaps, with non-deliverable forwards dominating the volume of trade. Though the market is increasing, it is uni-dimensional on the sell side.

A survey result of this study finds that all commercial banks operate in the forwards market while half of them deal in swaps. Among national-level development banks, none of them use derivative instruments. Among 81 responding non-financial firms out of 115 samples, only 12, mostly steel and metal manufacturing firms, hedge their foreign exchange exposure using forwards. Most firms (30) do not have FX risk and 27 firms who are exposed to FX risks do not use them due to lack of knowledge about the market.

Given liquidity, market participation, legal provisions, understanding of the matter, and market infrastructure, the FX derivative market is still developing phase in Nepal. Separate legislation on FX derivative trading is required. It is important to strengthen the current OTC market. Long-term forwards, swaps and options can be promoted in Nepal for hedging at present. These will not only facilitate hedging but also will attract the prospective Foreign Direct Investment (FDI). Once the OTC market is developed enough, prospects of the exchange market could be explored further.

1 INTRODUCTION

1.1 Background

Derivative is a contract whose price is derived from an underlying item such as a commodity, security, rate, index, or event originating out of the desire of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in the price of an asset (Bose, 2006). Parties can enter into a derivative contract to buy or sell the asset or the right to buy or sell the asset on a future date. A derivative contract can take many forms based on the need of the parties, financial engineering, market etc; however, forwards, futures, options, and swaps are the most common derivative products.

Derivative contracts could be traded on exchanges or Over the Counter (OTC) markets. Exchange-traded derivatives such as futures and options are standardized contracts traded on an exchange which guarantees their settlement. OTC traded derivatives such as forwards and swaps are more tailor-made and do not involve any formal exchange.

The popularity of derivative products has been increasing in modern times. Derivatives are used for hedging risks and enhancing returns from international portfolios (Thapa, Neupane, & Marshall, 2016). Foreign Exchange derivatives are widely used by firms to hedge foreign exchange and interest rate risks. Apart from being used for risk management, they are also used for short-term investment and speculation purposes.

The use of derivatives is influenced by size, growth opportunities, foreign purchases, cash flow volatility, foreign exchange risks, and interest rate exposure of firms (Chaudhry, et.al., 2014). While the size of the firms and external debt are positively associated with hedging, revenue from exports positively influences speculation (De Oliveira & Novaes, 2007). The use of derivatives is also influenced by financial distress (Khan, et.al., 2017). Moreover, the uses have a positive relation with economic variables such as international trade, financial activity, and per capita income (Mihaljek & Packer, 2010). The size of the local derivative market also plays an important part in the usage of derivative products (Bartram, Brown, & Fehle, 2009).

Major currencies became floating since the early 1970s which led to the creation of currency futures at the Chicago Mercantile Exchange (CME) in 1972 (Kotze, 2011). Since then the volume of derivative trades has been increasing. In 2020, the average daily turnover of exchange-traded futures and options reached USD 5,421 billion and USD 1,414 billion respectively. With regards to the OTC market, at the second half of 2019,

USD 92,177 billion worth of foreign exchange contracts remained outstanding (Bank for International Settlement, 2020).

In Nepal, non-financial firms such as importers, exporters, manufacturing companies etc. can hedge their foreign exchange exposures through 'A' class Commercial Banks and 'B' class Development Banks (national level). Banks can perform transactions on popular foreign exchange derivative instruments such as Forward, Futures, Options, and Swaps etc. More than half of the volume is done in the form of outstanding Non-deliverable Forwards (NDF) as proprietary transactions.

With the rise in transactions, the development of the foreign exchange market, either exchange or OTC, is required. The development of foreign exchange derivative market will facilitate the use of derivative products and mitigate settlement risk. Moreover, markets will reduce the costs associated with making contracts. It will provide greater accessibility, alternatives, and flexibility among non-financial firms to manage risks using derivative products.

However, risks are also associated with the markets. Markets could invite instability during time of financial distress. The markets could also become one-sided with domination from the buy or sell side. Liquidity risk and high trading costs could also limit the use of derivatives (Thapa, Neupane, & Marshall, 2016). Regulatory and supervisory frameworks and practices also need to be updated and regulators need to be proactive in their approach. It could also add a burden to the central bank as it has to be ready to intervene in the spot market during times of high volatility.

In this context, the study has reviewed the existing FX derivative market for the development of the market further in Nepal. The study report is organized into four broad chapters 1) Introduction, 2) Foreign Exchange Derivative Market in South Asian Countries, 3) Foreign Exchange Derivative Market in Nepal, and 4) Summary, Conclusion, and Way Forward.

1.2 Objectives of the study

With the growing volume of derivative transactions, it has been deemed appropriate to study the feasibility of the development of the foreign exchange derivative market, both OTC and Exchange Market, in Nepal. Moreover, according to the Foreign Exchange (Regulation) Act, 1962, it is the responsibility of NRB to develop a well-functioning foreign exchange market. Therefore, the study has been conducted with the following objectives:

i. to assess the existing practices of the FX derivative market
ii. to review the legal/regulatory framework for FX derivative instruments of Nepal
iii. to analyze the prospects of the FX derivative market.

1.3 Methodology

FX derivative market is nascent in Nepal and has not yet received significant attention from the stakeholders. However, the feasibility of other derivative markets such as commodities has been analyzed by some authors such as Kharel,(2018) and Adhikari, (2011). The study conducts the assessment of both the OTC and exchange market in Nepal based on the analysis of current market volume, use of instruments, market participants, and legal/regulatory framework. The study also delves into the prospects of the development of the FX derivative market in the future. The research is exploratory in nature and uses both qualitative and quantitative data for inference purposes.

The analysis has been conducted in three segments. First, country-wise FX derivative markets and practices of South Asian countries have been analyzed. The analysis is based on a literature review and secondary data. Second, focus group discussion among stakeholders has been conducted in May 2021to discuss and deliberate on the current practices, issues, and way forward. The stakeholders include representatives from NRB Foreign Exchange Management Department (FEMD), Foreign Exchange Dealers' Association of Nepal (FEDAN), Securities and Exchange Board of Nepal (SEBON), Nepal Stock Exchange (NEPSE), Stock Brokers' Association of Nepal (SBAN), CDS and Clearing Limited, Commercial Banks, Merchant Banks, and Market Experts.

Lastly, a questionnaire survey among various stakeholders such as 27 commercial banks, 8 development banks (national level), 115 non-financial firms, and other stakeholders including SEBON, Nepal Stock Exchange, CDS and Clearing Limited, SBAN, merchant banks, and market experts have been conducted in June 2021. Moreover, data on the volume of derivative transactions for last three fiscal years have been collected from

commercial banks and development banks (national level). The questionnaire and data request forms have been sent through emails to the participants due to the COVID-19 pandemic who are required to fill and send the questionnaire by the participants themselves. However, several email follow-ups and telephonic calls with the participants have been made by the research team for accurate and timely responses. Moreover, some of the late responders have been surveyed via telephonic calls.

1.4 Limitations

The exploratory study is based on a literature review and inputs from stakeholders. Therefore, the study is characterized by the following limitations:

i. limited availability of literature to analyze various aspect of derivative market in Nepal,
ii. low number of respondents due to limited practice in Nepal,
iii. limited understanding of the topic to get wider feedback.

2 FX DERIVATIVE MARKET IN SOUTH ASIAN COUNTRIES

Derivative products are popular means to hedge risk and earn additional income among firms. Internationally, about 60 percent of the firms use derivatives and among all countries, 43.6 percent of firms use FX derivatives while 32.5 percent use interest rate derivatives, and 10 percent commodity price derivatives (Bartram, Brown, & Fehle, 2009). The use of derivatives is much pronounced in developed markets. Derivative products are also getting popular in developing and emerging nations with average daily turnover expanding to four times in the last decade which is 6 percent of emerging market GDP (Mihaljek & Packer, 2010). This section reviews FX derivative markets in SAARC nations other than Nepal.

2.1 Afghanistan

Da Afghanistan Bank Law gives the responsibilities of formulation, adoption, and execution of exchange rate policy to Da Afghanistan Bank, the central bank of Afghanistan. The country has adopted Managed Floating Exchange Rate regime under which the exchange rate is determined by the demand and supply factors in the market. The FX related matters are looked after by the Market Operation Department of the bank which is responsible for the preparation of the official exchange rates. The FX transactions are spot deals at the exchange rate specified by the bank. The bank has not looked into any aspect related to the derivative market yet. Afghanistan is among the few countries which do not have a secondary stock market (Da Afghanistan Bank, 2019).

2.2 Bangladesh

Bangladesh Bank, the central bank of Bangladesh, is the regulatory authority on FX transactions according to Foreign Exchange Regulation Act, 1947. Bangladesh has adopted a Floating Exchange Rate regime since 31 May 2003. However, the central bank intervenes in the foreign exchange market to minimize extreme swings in the exchange rate to avoid adverse repercussions on the domestic economy. OTC derivative market exists among banks (Bangladesh Bank, 2021). Banks can perform forward transactions as authorized dealers with other banks and non-bank customers like exporters, foreign currency account holders, exchange houses abroad, etc. covering their own risk. Banks are also allowed to undertake swap transactions. The central bank facilitates two-way quotation for both sale and purchase rates while quoting/asking for any spot/forward (Bangladesh Bank, 2017).

At present, the exchange market for FX derivatives lacks in Bangladesh. Several authors have advocated for the derivative market in Bangladesh. Volatile capital market, insecure export, and import sector, and demand for alternative sources of investments justify the need for a derivatives market in the country (Rahman & Hassan, 2011; Islam, et.al., 2020). It could be done by establishing an advisory committee, increasing public awareness, implementing stringent trading and licensing mechanism, developing infrastructure, and establishing a central counterparty (Rahman & Hassan, 2011). Bangladesh Capital Market Development Plan (2012-2020) formulated by the Securities and Exchange Commission, Bangladesh has promoted the derivative market in Bangladesh (Islam,et.al., 2020)

2.3 Bhutan

Bhutan has its currency pegged with Indian Rupee. FX related matters are looked upon by Royal Monetary Authority (RMA) through the power vested from Royal Monetary Authority Act, 2010. As per the act, the authority has the power to make regulations, develop rules and procedures, issue notification, and provide guidelines and clarification on FX transactions and related matters. As per this provision, Foreign Exchange Operational Guidelines 2020, Foreign Exchange Rules and Regulations 2020, Inward Remittance Rules and Regulations 2016, and Regulations Relating to the Possession of Asset and Properties outside Bhutan by Bhutanese Citizens 1993 are the four major regulations and guidelines issued by RMA. However, these regulations and guidelines have not envisioned the use of FX derivatives. Hence, the derivative markets, both OTC and exchange, are not present in Bhutan (Royal Monetary Authority of Bhutan, 2018).

2.4 India

Reserve Bank of India (RBI) regulates the matters related to FX in accordance with the Foreign Exchange Management Act, 1999. Bose (2006) gives the historical account of the role of RBI in the development of the derivative market in India. In 1978, RBI allowed banks to undertake intra-day trading in FX while maintaining square or near square position at the close of each business day. Later, RBI allowed the use of derivative products like cross-currency options, interest rate and currency swaps, caps/collars, and forward rate agreements in the international FX market. It facilitated the development of a rupee-foreign currency swap market; and the introduction of additional hedging instruments such as foreign currency-rupee options. RBI allowed banks to use cross-currency derivatives with the rupee as one leg, which was introduced with some restrictions in April 1997. Rupee OTC interest rate derivatives were permitted in 1999

using pure rupee benchmark, while Rupee-foreign exchange options was allowed in July 2003.

While RBI has played a crucial role in the development of the OTC market in India, the Securities and Exchange Board of India (SEBI) worked for the development of the exchange market for derivatives trading. A committee formed by SEBI in 1996 under the chairmanship of Dr. L.C. Gupta with the objective of creating an appropriate regulatory framework for derivative trading in India conducted a wide market survey with stakeholders. The committee concluded that there has been a lack of comprehensive understanding of derivative products in the Indian market and recommended phase-wise introduction of various derivative products (Securities and Exchange Board of India, 1998). Similarly, another committee has been formed under the chairmanship of Prof. J.R. Varma which recommended regulatory measures for containing risk in the derivatives market and outlined technical requirements for derivatives trading (Securities and Exchange Board of India, 2002).

At present, India has thriving FX derivative markets with both OTC and Exchange markets functioning well with impressive volume. While the OTC market is regulated by the central bank, exchange markets are regulated by SEBI keeping in view the RBI directives on FX transactions. The average daily turnover in the OTC FX derivative market stands more than USD 21 billion (Bank for International Settlements, 2019). In the context of exchange-traded derivative, four pairs of currency derivatives i.e. USD-INR, EUR-INR, GBP-INR and JPY-INR are traded in the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) as well as Multi-Commodity Exchange (MCX) in India. The average daily turnover of FX derivatives in NSE, the largest exchange in India on the basis of turnover, has been more than INR 50 billion in FY 2020/21 (National Stock Exchange, 2021).

2.5 Maldives

The exchange rate system of Maldives is a conventional fixed peg against the U.S. dollar. Maldives Monetary Authority (MMA), under the Maldives Banking Act, 2010, is responsible for FX management. MMA through the auction system performs FX swap transactions with commercial banks. FX Swap is used as a monetary policy instrument to manage foreign currency liquidity in the banking system. "Regulation on Foreign Currency Exposure Limits", a regulatory framework for all authorized dealers, has not made any provision on the use of derivative products. Therefore, the FX Swap provided

by MMA to the commercial banks is the only derivative instrument available in Maldives (Maldives Monetary Authority, 2001-2021).

2.6 Pakistan

State Bank of Pakistan regulates the FX market in accordance with Foreign Exchange Regulation Act, 1947. Pakistan has adopted a flexible exchange rate regime since May 1999. The exchange rate is determined by the market forces in the domestic interbank FX market. Banks are allowed to make forward contracts to cover exports, imports, private sector borrowings from abroad, financial sector borrowings from abroad, and portfolio investment made by non-residents. Authorized dealers in FX may enter into forward transactions with each other (State Bank of Pakistan, 2020).

Despite the thriving OTC market, FX derivatives are not traded on exchanges in Pakistan. FX markets are not efficient in Pakistan and market players can benefit from speculation due to market inefficiency due to its small size compared to other emerging nations (Bashir, et al., 2014). Moreover, it has been found that financially distressed firms with high foreign sales, having lower managerial holdings, and lower interest coverage ratio use FX derivatives in Pakistan (Khan, et al., 2017; Afza & Alam, 2011). Therefore, the economy still needs expansion with substantial policy work for an efficient FX market (Bashir, et al, 2014).

2.7 Sri Lanka

Foreign Exchange Act, 2017 gives power to the Central Bank of Sri Lanka for the matters relating to the FX management under which it performs the regulatory and operational role. OTC FX derivative products are provided by the bank and financial institutions under the regulation of the Central Bank of Sri Lanka. The Central Bank through its Banking Act Directives issued through its Monetary Board timely revises the provisions of financial derivative transactions for licensed commercial banks and licensed specialized banks (Government of Sri Lanka, 2017).

Through the Banking Act Direction issued in 2017, derivative products such as Swaps, Options, Forward Rate Agreements, Forward Contract, Swaptions have been allowed to the concerned licensed entity. It has been done to allow importers and exporters to hedge their exposure including a contract based on estimated transaction value. In order to ensure the use of derivatives for hedging and not speculation, an option of exiting the contract is available to customers and they may unwind/sell back a derivative partially or fully if they consider such a derivative is no longer required. Long-term hedging is

facilitated with maximum maturity period of a derivative transaction up to ten (10) years (Central Bank of Sri Lanka, 2018).

However, an exchange market for trading in FX derivatives does not exist in Sri Lanka. Sri Lanka Capital Market Assessment 2016 stressed on a well-developed derivatives market as an essential component for a complete financial market structure in Sri Lanka (Asian Development Bank, 2016). The assessment report recommended on introducing derivative products in the existing regulation along with the development of trading, clearing, settlement technology, and mechanisms to facilitate the introduction of derivatives. Likewise, the phase-wise introduction of derivative products starting from equity futures and options and developing knowledge and building competencies in matters relating to derivatives products and markets have been recommended (Asian Development Bank, 2016).

Thilakerathne and Abeyratna (2015) have performed exploratory research on the use of derivatives as risk management technique by Sri Lankan listed companies through questionnaire survey. The study found that only 41 percent of selected listed companies have used derivatives as a risk management technique. The listed companies used forward exchange contracts, currency options, and currency swaps to manage FX risk. The study revealed 25 percent of companies using forward exchange contracts and 15percent using currency options to manage risk.

2.8 Sum Up

In South Asian economies other than Nepal, FX derivative market is operational in emerging economies of Bangladesh, India, Pakistan, and Sri Lanka. However, other economies are yet to develop the FX derivative market. India has both flourishing OTC and exchange markets for FX derivatives. The study finds literature in support for developing FX derivative markets in Bangladesh, Pakistan, and Sri Lanka. It turns out the more FX exposure and developed financial market, the more is the scope for FX derivative market. At first, the central banks across the nations have been trying to promote the OTC market for hedging through market instruments such as long-term swaps and options. Once the OTC market is developed, prospects of the exchange market could be explored.

3 FX DERIVATIVE MARKET IN NEPAL

3.1 Legal Provisions

Foreign Exchange (Regulation) Act, 1962 is the law guiding the regulation of foreign exchange in Nepal. The act hands over all rights related to Foreign Exchange to NRB. Chapter 7 (Section 62-68) of the Nepal Rastra Bank Act 2002 outlines the role of NRB in matters of the Foreign Exchange Policy, Regulation, and Reserve. Section 62 of the Act states "The Bank shall have full authority to formulate, implement and cause to implement foreign exchange policy of Nepal." In the same spirit, NRB formulates and implements the foreign exchange policy of Nepal through the issuance of policies, guidelines, directives, and circulars from time to time. Under these legal provisions, the bank has allowed Commercial Banks and Development Banks (national level) to perform transactions with popular FX market derivative instruments.

Securities Act 2007 concerns with trading of securities on the exchange market. However, it does not delve into the matters of derivatives whatsoever. Commodities Exchange Market Act, 2017, however, covers trading of derivative contracts. But the act has narrowly defined derivatives as "a commodities options contract entered into for buying and selling of commodities between a buyer and seller stating therein price, quantity, and quality as well as handover date of such commodities to be executed at least in thirty days following the contract". Therefore, trading of financial derivative contracts such as FX derivative through an organized exchange is constrained by the lack of necessary laws.

3.2 Regulatory Provisions

Nepalese Rupee has been pegged with Indian Rupee but exchange rate with other currencies moves with the Indian Rupee. Commercial banks have been allowed to use derivative instruments such as forwards, options, swaps, and futures for risk management while dealing in FX transactions through the Monetary Policy since the Fiscal Year (FY) 2006/07. Commercial banks could trade derivative instruments under the criteria stipulated by the Board of Directors without having to take permission from the NRB. The policy of systematization of FX derivative trading has been taken through the Monetary Policy of FY 2012/13.

In 2019, the Ministry of Finance (MoF) published "Guidelines Related to Hedging 2075" which promoted the use of FX swaps in order to facilitate foreign loans for infrastructure

development projects such as hydropower, transmission line, railway, fast-track roads, and projects specified by Government of Nepal. Qualified infrastructure projects could use hedging facilities from NRB by depositing the foreign currency into the bank. However, this guideline is yet to come into practice.

Currently, NRB has allowed A Class Commercial Banks and B Class Development Bank (national level) to conduct derivative transactions. Foreign Exchange Management Department of the bank under its Unified Circular 2020 has issued a unified circular allowing the banks to perform transactions with popular FX market derivative instruments such as Forward, Futures, Options, and Swaps. More specifically, the bank has issued clear guidelines on the trading of Forwards and Interest Rate Swaps (Nepal Rastra Bank, 2020).

Some of the important regulatory provisions under the current guidelines are as follows:

- Licensed commercial banks and development banks (national level) can use derivative instruments in convertible foreign currency to manage risks arising out of holding foreign exchange under the criteria outlined by their Board of Directors.
- BFIs can perform need-based transactions on Forward Exchange Contract (Deliverable Forwards) with foreign agency banks with the pre-specified forward exchange rate.
- Commercial Banks can perform need-based forward transactions with customers covering their own risk.
- Commercial Banks have also been allowed trading in proprietary forwards contracts in convertible currencies. However, to discourage speculative trading, Outstanding Proprietary Forward should be completely squared up with no open position.
- Total outstanding position of proprietary transactions including buy and sell positions should not be more than 30 percent of core capital. Proprietary transactions cannot be performed on contracts with a maturity period of more than three months. In the case of FX outflow due to net settlement, BFIs are required to inform NRB.
- Forwards transactions have to be reported to the Foreign Exchange Management Department (FEMD) of NRB under a specified format.
- BFIs can also perform Interest Rate Swaps based on their stock of foreign exchange. Moreover, swaps should be covered by the investment of equivalent

amount. Interest Rate Swaps transactions are to be reported to the FEMD of the bank within seven days of such transaction.

- When BFIs perform swap transactions to hedge the interest rate of FX loans of customers, the details of such transactions have to be reported within fifteen days of such transactions.

3.3 Market Volume

A survey of the transaction volume of FX derivative trading has been conducted among commercial banks. The survey finds that the volume of the derivative market in Nepal is around a quarter trillion rupee. As of the week ending mid-July 2020, the total volume of FX derivative transactions stands NPR 228.94 billion. The volume stood NPR 228.71 billion and NPR 143.12 billion in the same period of 2019 and 2018 respectively. It signals enough liquidity in OTC derivative market.

Table 3.1: Volume of FX Derivative Transactions by Commercial Banks

(In Billion NPR)						
Week ending mid-July	**Deliverable FX Forwards**		**Non-Deliverable FX Forwards**		**Swaps**	**Total**
	Buy	**Sell**	**Buy**	**Sell**		
2018	12.56	17.42	2.71	90.99	19.44	143.12
2019	20.89	43.05	4.06	113.10	47.61	228.71
2020	5.34	39.22	3.31	134.90	46.17	228.94

Source: Survey

In terms of the use of individual derivative products, NDF is the most popular instrument accounting for more than half of the trade volume. NDF volume stands NPR 138.21 billion in the week ending mid-July 2020. Such volumes have been NPR 117.16 billion and NPR 93.7 billion in the same period of 2019 and 2018 respectively. The volume of deliverable forwards and swaps stood NPR 44.56 billion and NPR 46.17 billion in 2020. Deliverable forwards amounted NPR 63.94 billion and NPR 29.98 billion in the same period of 2019 and 2018 respectively. Swaps transactions worth NPR 47.61 billion and NPR 19.44 billion have been done in the week ending mid-July 2019 and 2018

respectively. In the case of both deliverable and non-deliverable forwards, sell-side dominates which signals the existence of the one-sided market.

3.4 Observations from Focus Group Discussion

A focus group discussion on virtual mode was been conducted on 30th May 2021 with the motive of exploring broad aspects on the derivative market from the major stakeholders of the current derivative market especially Commercial Banks, Development Banks, FEDAN, SEBON, NEPSE, CDS, and Clearing, Merchant Banks, Stock Brokers, and Experts.

The discussion highlights the current derivative market being limited to forward contracts. However, the uses of forward contracts are constrained by the rigidness of contract, short maturity, cost, and no exit policy. The proportionality differences seen in trade volume (buy and sell-side) shows the market is one-sided. The derivative products available are used mostly by the importers and have low demand for export-based hedging. Suggestions regarding standardization of forward contract on a month to month basis and developing a matured spot and forward market have been received as a prior necessity to develop the derivative market.

Importantly, the stakeholders also discussed the need of an organized exchange market in Nepal. The need for the organized exchange has been justified with the low cost, high flexibility, and easy availability of hedging instruments. However, the establishment of an exchange market is constrained by the lack of sufficient legal provisions. The legal along with the regulatory and supervisory dimensions should be strong enough to manage the risks associated with the FX derivative trading.

At present, the development of the OTC market along with building the necessary infrastructure for the exchange market have been suggested by stakeholders. Long-term Swaps in the OTC platform could be introduced sooner. It will not only act as an economic hedging tool for investors but also help to attract prospective FDI. Furthermore, attention to the establishment of an active secondary debt market has been highlighted to generate the yield curve- a major determinant factor to pricing OTC products with different maturities. Lack of yield curve, which gives a general vision on markets long-run interest rate, has affected the standardization of forward contract and premium prices among the banking institutions.

A number of suggestions have been received from focal group discussions for further facilitation of the foreign exchange derivative market in Nepal. The suggestions include:

opening up the two-way quotes, ease on access to the derivative products based on the prospective exposure, cautiously opening investment opportunity to the Foreign Institutional Investors (FII) along with country's credit rating by external rating agencies, and addressing peg risk concerns with INR.

3.5 User Perspective Analysis

A questionnaire survey has been conducted among stakeholders. The participants' details are given in Table 3.2. The survey included Commercial Banks, Development Banks (national level), Non-Financial Firms, and other stakeholders' including- SEBON, NEPSE, CDS and Clearing, Merchant Banks, SBAN, and Experts in the field of derivative markets.

Table 3.2: Survey Participants Details

Participants	Questionnaire Sent	Response Received	Response Rate (in %)
Commercial Banks	27	27	100.0
Development Banks (national level)	8	8	100.0
Non-financial Firms	115	81	70.4
Other Stakeholders	8	8	100.0
Total	158	124	78.5

Source: Survey

While all financial firms responded to the questionnaire, non-financial firms have been hesitant to respond. The response rate among non-financial firms has been only 70.4 percent. The low response rate could be due to a lack of knowledge regarding the FX derivative instruments and the market as highlighted by many responding non-financial firms.

3.5.1 Responses from Commercial Banks

This section deals with the survey result of commercial banks. The survey results are interpreted based on three broad criteria: the current status on the use of derivative products, opinion on the existing derivative market, and the future prospects. The survey finds that all commercial banks have been using derivative products. Among the five popular FX derivative products i.e. forwards, options, futures, currency swaps, and interest rate swaps, it has been found that currency forwards and currency swaps dominate the OTC derivative market where all commercial banks use currency forwards while about half (14) of them use currency swaps. The survey finds that the average currency pairs traded is 4.4 among which USD-NPR and USD-INR are the most prominent currency pairs traded. The average annual volume of derivative transactions among commercial banks stands NPR 8.29 billion.

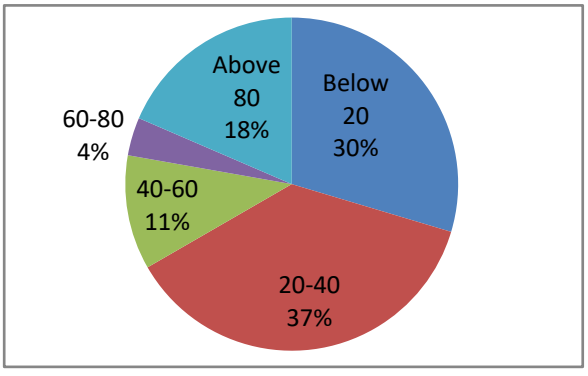
Table 3.3: Opinion of Commercial Banks on motive for using derivative products

Motive for Using Derivative Products	Median Response	Mode Response
Hedging Interest Rate Risk	Neutral	Neutral
Hedging FX Risk	Strongly Agree	Strongly Agree
Generating Additional Income	Agree	Agree

Source: Survey

When asked to rate their motive for using derivative products, it is seen that most of the commercial banks strongly agree on the use of derivative products for hedging FX risk. However, the majority of response is neutral for use of the derivative product for hedging interest rate risk while it is seen that most of them are using the derivative products as an alternative source of generating additional income.

Figure 3.1: Proportion of FX Exposure of Commercial Banks hedged using derivative products



Source: Survey

Most of the commercial banks, 37 percent, hedge foreign exchange exposure in the range of 20-40 percent followed by 30 percent of banks who hedge below 20 percent. It is found that the percentage of commercial banks hedging 40-60 percent, 60-80 percent, and above 80percent of their risk exposure through derivative products has been found to be11 percent, 4 percent, and 18 percent respectively. It can be inferred that the proportionate use of derivative products for hedging exposure is low and based on banks' internal policies.

Opinions on the existing derivative market have been taken about the derivative instruments and existing laws and regulations. It is revealed that most of the commercial banks agree that derivatives products are comfortable in their usage, the cost of the products is reasonable; the maturity period of the derivative products is favorable and current regulations on FX derivative limits hedging. The majority of them agree with the statement that there is no significant difference between the derivative products available in Nepal. However, the majority of them disagree that the derivative instruments are easily and sufficiently available in Nepal.

Table 3.4: Opinion of Commercial Banks on Existing Derivative Market

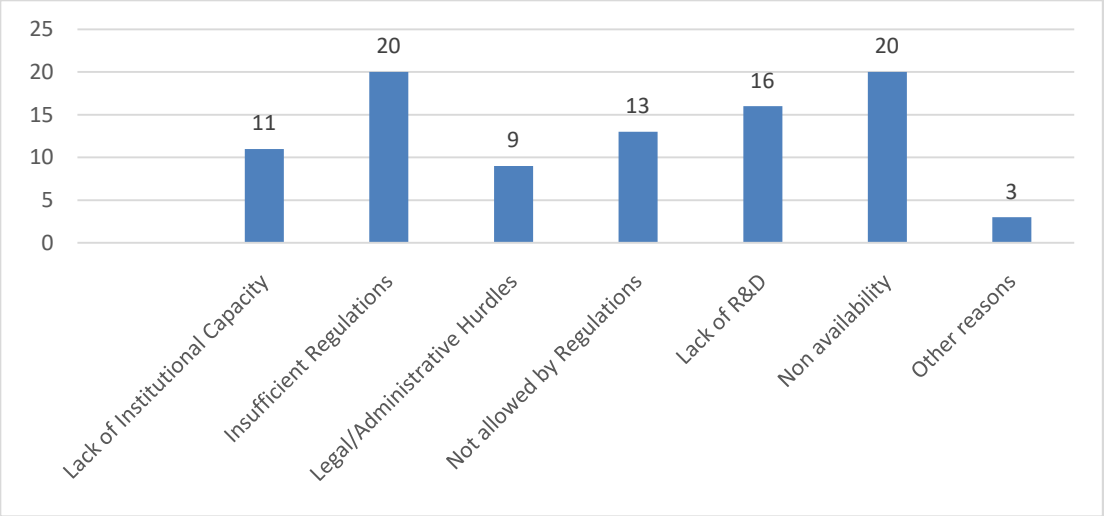
Opinion on Derivative Instruments	Median Response	Mode Response
Derivatives products are comfortable in their usage	Agree	Agree
They are easily and sufficiently available in Nepal	Disagree	Disagree
Cost of the derivative products is reasonable	Agree	Agree
No significant difference between the derivative products	Neutral	Neutral
Maturity period of the derivative products is favorable	Neutral	Agree
Current regulations on derivatives limits hedging	Agree	Agree

Source: Survey

It is found that numerous reasons restrict the usage of derivative instruments among which lack of institutional capacity, insufficient regulations, legal/administrative hurdles, non-allowed by current regulations, lack of research and development, and non-availability of the instruments have been included. About three-fourth (20) commercial banks believe insufficient regulations and the non-availability of derivative instruments

are the major reasons restricting the usage of derivative products. Lack of research and development also received a significant response from 16 commercial banks.

Figure 3.2: Reasons limiting Commercial Banks on using Derivative Instruments[1]



Source: Survey

Opinion on the need for different derivative instruments reveals that majority of commercial banks strongly agree on the need for deliverable forwards, non-deliverable forwards, and currency swaps and agree on the need for OTC options, exchange-traded futures, and exchange-traded options. It means that preference on OTC market instruments is more.

Table 3.5: Opinion of Commercial Banks on introduction of derivative instruments

Opinion on introduction of derivative instruments	Median Response[2]	Mode Response[3]
Deliverable Forwards	Strongly Agree	Strongly Agree
Non-Deliverable Forwards	Strongly Agree	Strongly Agree
OTC Options	Agree	Agree
Exchange Trade Futures	Agree	Agree
Exchange Traded Options	Agree	Agree
Currency Swaps	Strongly Agree	Strongly Agree

Source: Survey

[1] Multiple response question
[2] The midpoint of a frequency distribution of observed values
[3] The value that occurs most frequently in a given set of data

3.5.2 Responses from Development Banks

It is found that none of the respondent national level development banks use derivative instruments for the management of FX risk. However, the majority of them manage their exposures through asset-liability matching.

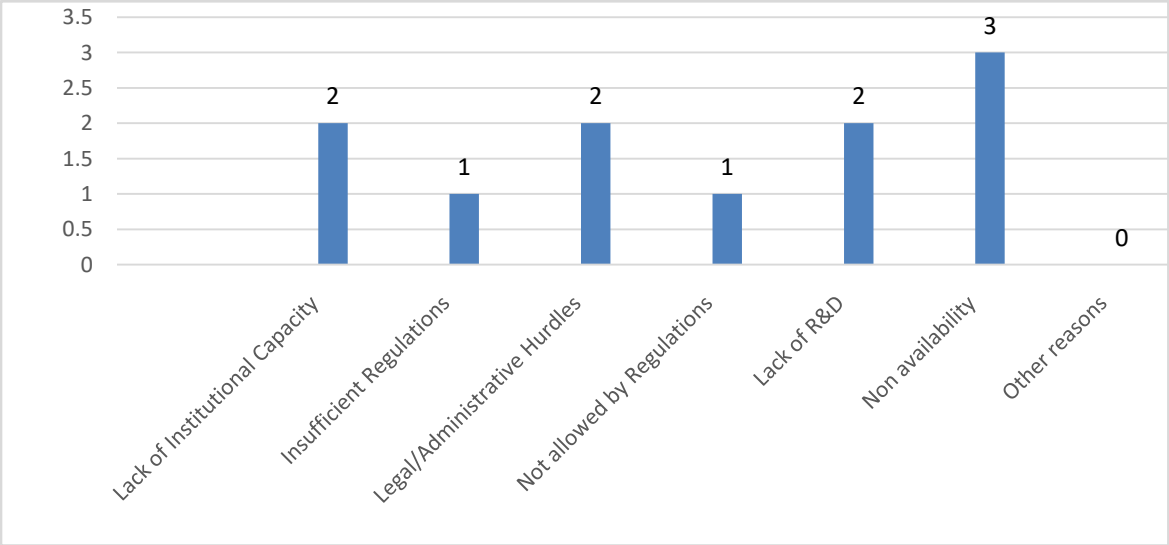
Table 3.6: Management of FX Risk by Development Banks

Management of FX Risk	Number of Development Banks
Through Asset Liability Matching	5
Use of Derivative Instruments	0
No Action Taken	3
Total	8

Source: Survey

The response on the reasons restricting usage of derivative instruments has been found to be lack of institutional capacity, insufficient regulations, legal/administrative hurdles, not allowed by regulations, lack of research and development, and non-availability of derivative instruments.

Figure 3.3: Reasons limiting Development Banks on using Derivative Instruments[4]



[4] Multiple response question

Source: Survey

3.5.3 Responses from Non-Financial Firms

This section deals with the survey result of 81 respondent firms out of 115non-financial firms surveyed. Like that of commercial banks, the survey results are interpreted based on three criteria: the current status on the use of derivative products, opinion on the existing derivative market, and the future prospects.

Among the non-financial firms surveyed, only 12 out of 81responding non-financial firms use derivative products. The usage is low at 14.8 percent. Most of the users are steel and metal manufacturing firms. It has been found that all of the derivative products using the firm engage in currency forwards transactions. This result matches with the result of supply-side from commercial banks. The average numbers of currency pairs traded have been found to be 1.2 with the average annual volume of derivative transactions of NPR 1.35 billion.

Table 3.7: Opinion of non-financial firms on motive for using derivative products

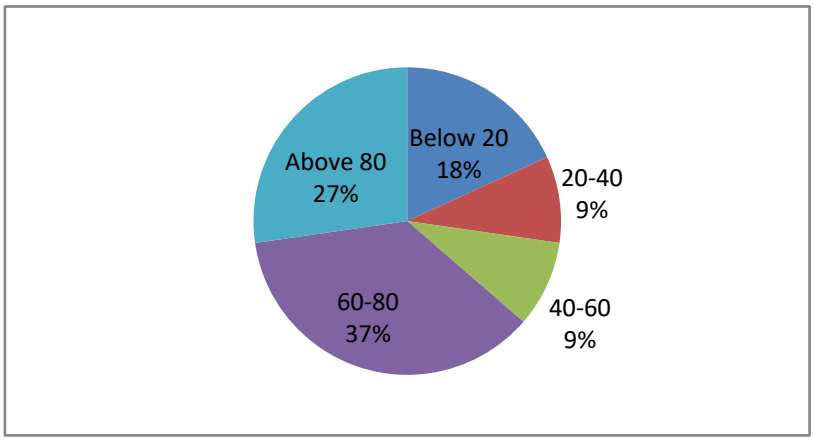
Motive for Using derivative Products	Median Response	Mode Response
Hedging Interest Rate Risk	Agree	Strongly Agree
Hedging FX Risk	Strongly Agree	Strongly Agree
Generating Additional Income	Neutral	Neutral

Source: Survey

Likewise, the motives for using derivative products for the majority of derivative using firms are to hedge foreign exchange and interest rate risks. The motive for generating additional income has not influenced the use of derivative instruments.

It is found that among 12 of the respondents using derivative products, 3 entities (27 percent) hedge above 80 percent of their total exposure. Likewise, 5 entities hedges 60-80 percent, 1 entity hedge 40-60 percent and 20-40 percent each, and 2 entities have been found to hedge below 20 percent of their total foreign exposure. These are 37 percent, 9 percent, 9 percent, and 19 percent respectively. It points to the fact that a large proportion of FX exposures is hedged.

Figure 3.4: Proportion of exposure of non-financial firms hedged using derivative products



Source: Survey

Opinions on the existing derivative market have been taken broadly about the derivative instruments and existing laws and regulations. This study reveals most of the non-financial firms agree that derivatives products are comfortable in their usage; there is no significant difference between the derivative products, and the maturity period of the derivative products is favorable. The majority of them have been neutral on the statement that current regulations on derivative limit hedging in Nepal. However, the majority of them disagree that derivative instruments are easily and sufficiently available in Nepal and the cost of derivative products is reasonable.

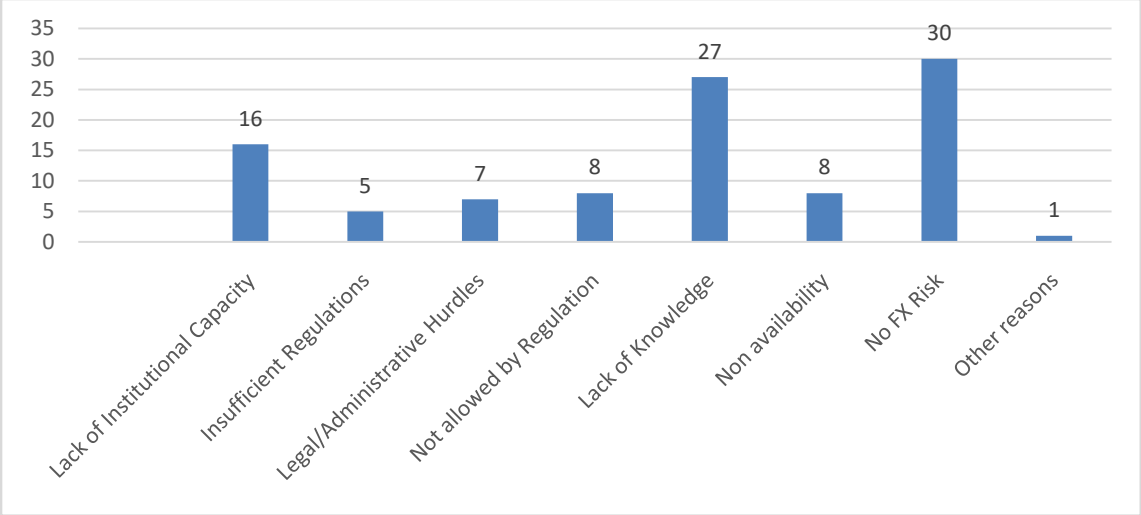
Table 3.8: Opinion of non-financial firms on existing derivative market

Opinion on Derivative Instruments	Median Response	Mode Response
Derivatives products are comfortable in their usage	Agree	Agree
They are easily and sufficiently available in Nepal	Disagree	Disagree
Cost of the derivative products is reasonable	Neutral	Disagree
No significant difference between the derivative products	Agree	Agree
Maturity period of the derivative products is favorable	Agree	Agree
Current regulations on derivative limit hedging	Neutral	Neutral

Source: Survey

The majority of non-financial firms (30) responded 'no foreign exchange risk' as the reason restricting the usage of a derivative instrument. For those who are exposed to foreign exchange risk, the lack of knowledge was cited by 27 firms as the reason for non-usage. Firms that do not use derivative products due to lack of institutional capacity is 16. Not-allowed by regulations, legal and administrative hurdles, non-availability, and insufficient regulations are also some reasons restricting the use of derivative instruments.

Figure 3.5: Reasons limiting non-financial firms on using derivative instruments[5]



Source: Survey

Table 3.9: Opinion of non-financial firms on introduction of derivative instruments

Opinion on introduction of derivative instruments	Median Response	Mode Response
Deliverable Forwards	Agree	Agree
Non-Deliverable Forwards	Neutral	Agree
OTC Options	Agree	Agree
Exchange Trade Futures	Agree	Agree
Exchange Traded Options	Agree	Agree
Currency Swaps	Agree	Agree

[5] Multiple response question

Source: Survey

Opinion on the need of different derivative instruments reveals that the majority of non-financial firms agree on the need for all types of derivative products. The results can be seen in Table 3.9.

3.5.4 Prospects of Exchange Market

Responses on prospects of the exchange market for FX derivatives have been taken from the survey participants. The questionnaire responses have highlighted the need for separate acts/law for FX derivative trading. Moreover, most of the respondents have opined that the current regulation is not as effective as it should be. Furthermore, the respondents affirmed the difficulty faced due to the lack of an exchange market for FX derivatives in Nepal.

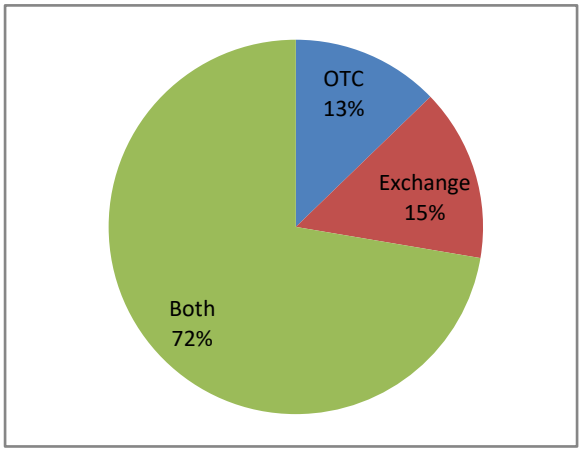
Opinion on legal provisions finds that 39 out of 47 respondents suggest the need of separate act/law whereas 19 out of 46 respondents have opined that present regulations are effective. 36 out of 47 respondents felt the need of an exchange market and hence responded affirmatively with the statement of facing difficulty due to lack of exchange.

Table 3.10: Opinion on legal and regulatory dimensions

Opinion on legal and regulatory dimension	Yes	No	Total
Need of separate act/ law	39	8	47
Effectiveness of present regulation	19	27	46
Difficulty due to lack of exchange	36	11	47

Source: Survey

Figure 3.6: Market Preference

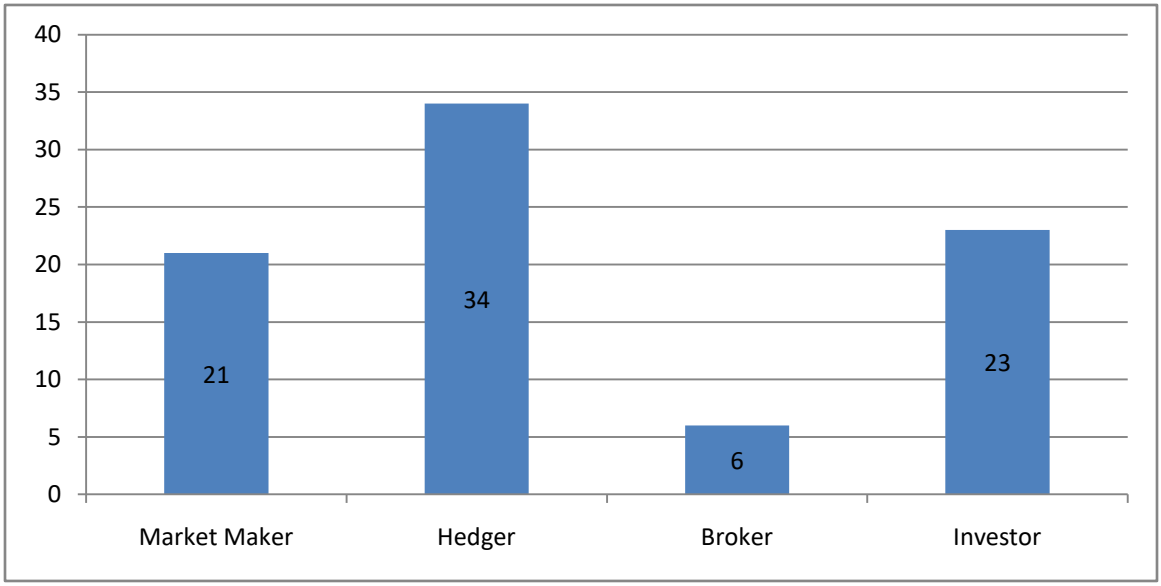


Source: Survey

On the question of preference of market, it has been found that 72 percent of respondents prefer both OTC and exchange market while 15 percent of respondents prefer exchange and 13 percent prefer OTC market. The participation motive for respondents has been found to be as a hedger, investor, and market maker. On the question of participation motive, 34 responded to

participate as a hedger. Moreover, 23 and 21 respondents responded to act as investors and market makers respectively. Only six respondents, all commercial banks, want to act as a broker.

Figure 3.7: Participation Motive[6]



Source: Survey

The most preferred maturities of exchange-traded contracts for both futures and options have been found to be 365 days, 182 days, and 91 days. It means the respondents prefer long-term maturity contracts.

Table 3.11: Preferred Maturities of Exchange Traded Contracts[7]

Preferred Maturities of Exchange Traded Contracts	Futures	Options
30 days	8	10
91 days	11	12
182 days	12	10
365 days	17	12

Source: Survey

[6] Multiple response question
[7] Multiple response question

Market facilitators such as CDS and Clearing, NEPSE, and SEBON have been asked questions to rank exchange derivative markets based on their feasibility to introduce in Nepal at present. The responses received can be seen in Table 3.12. The median rank has been calculated and the preference ranking reveals that the Index and Stock Derivatives market should be established first, followed by the Interest Rate Derivatives market. Feasibility of FX derivatives market is ranked on third place and Commodities Derivatives market comes last in the ranking.

Table 3.12: Feasibility of Derivative in Exchange Markets

Derivatives in Exchange Markets	Ranking by SEBON	Ranking by Nepal Stock Exchange	Ranking by CDS and Clearing	Median Rank
Index and Stock Derivatives	2	1	1	1
Interest Rate Derivatives	1	2	3	2
FX Derivatives	3	3	4	3
Commodities Derivatives	4	4	2	4

Source: Survey

Need for a separate clearing agency and exchange has been highlighted by stakeholders citing the complex nature of trading and settlement in derivatives. At present, the establishment of an exchange market could be marred by poor product knowledge, high risk, and low market participation as opined by the stakeholders. A low level of preparedness in terms of infrastructure and manpower restricts the introduction of the exchange market. Market facilitators and regulators have also opined that the exchange market for FX derivatives could be feasible in 3 to 5 years or later.

4 SUMMARY, CONCLUSION, AND WAY FORWARD

NRB formulates foreign exchange policies and regulations in accordance with Foreign Exchange (Regulation) Act, 1962 and Nepal Rasta Bank Act, 2002. Non-financial firms such as importers, exporters, manufacturing companies can hedge their foreign exchange exposures through 'A' class Commercial Banks and 'B' class Development Banks (national level). Commercial banks can also undertake proprietary forward trading. OTC FX derivative market in Nepal is dominated by commercial banks.

The study finds that the FX derivative market in India is well developed as compared to other SAARC nations. OTC market is operational in the emerging economies of Bangladesh, Pakistan, and Sri Lanka. However, other economies are yet to develop the FX derivative market. It turns out the more FX exposure and developed financial market, the more is the scope for the FX derivative market. The central banks across SAARC nations have been trying to promote the OTC market for hedging through market instruments such as long-term forwards and swaps.

The survey finds that the use of derivative products from commercial banks has increased by about 60 percent with a trading volume of Rs. 143.12 billion in the week ending mid-July 2018 to Rs. 228.94 billion in the same period of 2020. More than half of the volume is done in the form of outstanding NDF as proprietary transactions. The study also finds that the derivative instruments used in Nepal are limited to forward and swaps, with non-deliverable, forwards dominating the volume of trade. Though the market is increasing, it has large pressure on the sell-side.

Focus Group Discussion among stakeholders has revealed the current derivative market being dominated by forward contracts. While forwards are known for their flexibility, their uses are constrained by the rigidness of contract, short maturity, cost, and no exit policy. The derivative products available are used mostly by the importers and have low demand for export-based hedging. Stakeholders also pointed out the need for an organized derivative exchange market in Nepal. However, the establishment of an exchange market is constrained by legal provisions, product knowledge, and market infrastructure.

A survey conducted amongst commercial banks, development banks, non-financial firms, and other stakeholders finds that all commercial banks deal in forwards and about half of them deal in swaps. Commercial banks use them to hedge foreign exchange risk and generate additional income. Most commercial banks hedge up to 40 percent of their

exposure through the use of derivatives. However, the use of other derivative instruments among commercial banks is restricted by a lack of sufficient regulations and non-availability. Among national-level development banks, none of them use derivative instruments. They cite non-availability, weak institutional capacity, legal and administrative hurdles, and lack of research and development as reasons.

Among 81 responding non-financial firms out of 115 samples, few use the FX derivative instruments. The majority of responding non-financial firms (30) do not have FX risk and 27 firms are exposed to FX risks do not use derivative instruments due to lack of knowledge about the markets. Only 12 out of 81 (14.8 percent) responding firms, mostly steel and metal manufacturing firms, hedge their foreign exchange exposure using forwards. Among the non-financial firms using derivative instruments, most of them hedge more than 60 percent of their exposure. Further, non-allowance by regulations, legal and administrative hurdles, non-availability, and insufficient regulations are some strong reasons restricting the use of derivative instruments.

Given the context of current legal provisions, understanding of the subject matter, liquidity, infrastructure, and market participation, the FX derivative market in Nepal is still in the developing stage largely controlled by commercial banks. The OTC market has limited instruments in the form of forwards and swaps. While sufficient liquidity exists for forwards, liquidity is limited for swaps. Options are not traded in the OTC market.

Phase-wise reforms could be a model to develop the OTC market in Nepal. Swaps and Options could be promoted in Nepal for long-term hedging. Long-term forwards of maturity with one year could be introduced. These measures will not only facilitate hedging but also attract the prospective FDI.

Standardization of derivative instruments in the OTC market along with adding market participants will further support the development of the market. Transparent pricing of derivative instruments is likely to improve usage among non-financial firms.

The development of the FX derivative market also requires a predictable interest rate. For that, a well developed secondary bond market with government securities trading is required. Separate law is required to govern the FX derivative trading.

It is better to promote investor education to create awareness of the usage of derivative instruments. There is also a need for educated and trained human resources on the subject matter. It can be done through academic courses and certification programs.

Liquidity in the derivative market could be improved through the development of institutional capacity and market infrastructure. Opening up the two-way quotes for foreign currency trading and liquidity support by NRB in the spot market could flourish the market.

Market participation, product knowledge, risk, infrastructure and manpower are constraints in the establishment of exchange market for FX derivative trading. Once these operational preconditions are fulfilled, the idea of an organized exchange market could be explored.

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