TECHNICAL ASSISTANCE REPORT

COLOMBIA

Foreign Exchange Market Development and Regulatory Framework Review

February 2025

Prepared By

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Authoring Department

Monetary and Capital Markets Department

The analysis and policy considerations expressed in this publication are those of the IMF's Monetary and Capital Markets Department.

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Contents

Glossary

BIS	Bank for International Settlements
BR	Banco de la República (the Central Bank of Colombia)
COP	Colombian Peso
EME	Emerging Market Economy
FDI	Foreign Direct Investment
FSAP	Financial Sector Assessment Program
FX	Foreign Exchange
FXI	Foreign Exchange Intermediary
GDP	Gross Domestic Product
NDF	Non-deliverable Forward
SFC	Superintendencia Financiera de Colombia (the Financial Superintendency of Colombia)
USD	United States Dollar
DIAN	Dirección de Impuestos y Aduanas Nacionales (the National Tax and Customs Directorate)

Preface

At the request of Banco de la República (BR) and Superintendencia Financiera de Colombia (SFC), a Monetary and Capital Markets (MCM) Department mission visited Bogota from April 22 to May 3, 2024, to assist the authorities in the regulatory framework and development strategies for the foreign exchange market.

The mission met with Leonardo Villar (Governor, BR), Hernando Vargas (Deputy Technical Governor, BR), and Cesar Ferrari (Superintendent, SFC). The mission wishes to thank Alberto Boada, Tatiana Venegas, Wilmar Cabrera, Carlos Varela, Carlos Quicazán, Andrés Murcia, Dionisio Valdivieso, María Manuela Barrera, Martha Lucía Jiménez, Claudia Acosta, Juan Camilo Guerrero, Philip Symington, Lina Quiroga, Laura León, Sara Ariza, Diego Alejandro Martínez, Diego Alejandro Rojas, Oscar David Botero, Gloria Sarmiento, Enrique Montes, Adrián Martínez, Diego Alberto Sandoval, Miguel Felipe Vanegas, John Sebastián Tobar, Mateo Hernández, Juan Camilo Santos, Álvaro David Carmona, Nancy Zamudio, Alejandra Rosado, Luis Carlos Ramirez, and Maria Paula Rueda for their cooperation, productive discussions, and their hospitality. The mission team owes a great debt of gratitude to the interpreters, Beatriz Canal, Maria Claudia Moreno, and Federico Segura.

Executive Summary

The Colombian foreign exchange market has exhibited remarkable development over the last few years. While the exchange rate has responded flexibly to shocks, several components of the FX market have room for deeper development. Several mainly administrative challenges hinder market efficiency and inhibits the internationalization of the Colombian peso (COP).

The convertibility of the COP is incomplete, and its level of internationalization is moderate. A currency is considered fully convertible when it meets the following criteria: unrestricted usability for all financial purposes, freedom to be exchanged for other currencies without financial constraints, and the ability to be traded at an established exchange rate. Colombia's position aligns closely with other EME countries, indicating a comparable level of integration in international financial markets: (i) FX trading is slowly increasing relative to foreign trade; and (ii) the proportion of offshore trading remains comparatively low. However, non-financial corporates in Colombia engage in a moderate level of hedging activities using non-deliverable forwards (NDFs) and FX swaps compared to spot transactions to manage foreign exchange risk.

Despite the growing use of its currency internationally, Colombia's low level of FX trading compared to its economic size and international trade indicates a limited integration with the global financial system. Offshore trading has experienced rapid growth, mainly due to NDFs, contrasting with the slower increase observed in onshore and cross-border trading. Colombia's FX trading activity aligns with its peers in the Latin American region. However, FX trading volumes relative to economic activity are low in Colombia compared to the rest of the world. This suggests a limited degree of currency internationalization. FX turnover is gradually increasing relative to foreign trade in most countries, indicating a potential for further integration. Compared to similar countries, there is potential for Colombia to adopt additional financial instruments and expand its market.

In Colombia, the FX market operates under specific regulations that vary by transaction type. Domestic use of foreign exchange among residents is generally prohibited, with notable exceptions for certain transactions. Colombia authorizes 47 entities as foreign exchange intermediaries (FXIs), with their activities in the FX market varying by type and size. While resident FX accounts within Colombia face restrictions, those held abroad do not, although they are subject to differing regulatory procedures based on account usage. Nonresident FX and COP accounts in Colombia are similarly restricted, without provisions for international correspondent banking relationships.

The authorities should reduce the information required as a condition for executing the FX trades. They should revise the purpose, scope, overlaps (e.g. with DIAN) and respective usability of information collected on the FX transactions. The BR has evolved to offer flexibility in information requirements by including provisions of information ex-post. Looking ahead, the BR should consider extending the six-month repatriation deadline for channeling export revenues, aiming for its elimination in the next two years, and broaden the "positive list" of allowed current account and financial operations with an ultimate objective of a "negative list" approach in the future. The latter, also called "top-down approach," refers to the regulatory model that focuses mainly on listing restrictions rather than permitted operations. The sanction structure should also be rationalized, and provisions should be made clearer.

Distinguishing between reporting requirements and approval requirements, including in the framework of technology systems to collect data, reinforces the optimization of data collection. The optimal provision of data and access to a reliable and efficient source of relevant information underpin the regulatory preconditions for currency convertibility. Comparative case studies suggest that the reliance on adequate exchange rate regimes, macroeconomic stabilization with an adequate external

position, institutional development (e.g., regulatory and supervisory policies, central bank autonomy, market development), and optimization on the collection of data, among other factors, are essential for a successful FX liberalization.

Authorities should coordinate a comprehensive revision of the FX regulatory framework and transfer provisions that do not enhance FX market efficiency to the respective AML/CFT and tax regulatory and operational frameworks. These provisions still exist in current norms and operational procedures involving FXIs and clients as remnants of the capital control framework. The BR should maintain the practice of not collecting underlying documentation for FX operations for compliance purposes at the transaction level, focusing solely on ex-post data collection, in line with its institutional mission. Documentation assessment should be the responsibility of supervisory authorities and FXIs. The central bank should also evaluate whether the regulatory framework for a risk-based approach to FX operations requires improvements or clarifications for regulated entities or clients.

The spot FX market is liquid, competitive and efficient by international standards, while the hedging market is dominated by NDFs with limited activity in FX swaps, cross-currency swaps, deliverable forwards, and options. The user base of the hedging market comprises market participants with diverse risk profiles. Hedging dynamics are driven by changes in the exchange rate level anticipating a mean reversion pattern of the exchange rate. It is detrimental to the effectiveness and fairness of the market that the onshore and offshore NDF markets are segregated with respect to settlement currencies and risk mitigation mechanisms.

To facilitate the entry of non-resident banks into the domestic FX market, several regulatory constraints should be eased. First, the relevant authorities should consider harmonizing domestic ISDA agreements with global standards. This alignment would make the market more attractive to domestic NFCs. Second, the central bank should consider allowing the full use of non-resident COP accounts held in Colombia for proprietary transactions. This would necessitate revising the current definitions of external credit and foreign investments in Colombia within international treaties and domestic regulations (i.e., FX-denominated assets and liabilities of non-residents), to ensure that the classification of investments and external credit is indifferent to denomination. Third, the central bank should enable international correspondent banking relationships to operate fully using non-resident COP accounts within FXI Group 1. This measure is crucial for integrating the local FX market into the global financial system. Finally, the central bank should evaluate the possibility of licensing non-resident banks to conduct certain FX operations onshore without the need to establish a legal entity. All these changes must be implemented while ensuring alignment with FX regulations and effective coordination with other regulatory and supervisory bodies to maintain appropriate oversight.

Table 1. Key Recommendations

Recommendations and Authority Responsible for Implementation	Priority	Timeframe[1]
Easing the Administrative Burden on FX Transactions		
1. The authorities should determine or revise a transaction size threshold for ex-post data provision balancing the number and total amount of small value transactions. (¶42)	High	Near-term
2. The authorities should revise the purpose, scope, and respective usability of information collected from the public and the financial sector on the FX transactions, external credit, and investments—including through clearing accounts to simplify data collection and eliminate overlaps and multiple reporting forms. (¶42)	High	Medium-term
3. The BR should uphold the procedure of not collecting any underlying documentation for FX operations for compliance purposes at a transaction level, just data, in adherence to its institutional mission. Documentation assessment must be focused on the competencies of supervisory authorities and FXIs. (¶43)	High	Medium-term
4. The BR should assess if the regulatory possibility of risk-based approach for the FX operations requires improvement or clarifications for regulated entities or clients. (¶43)	Medium	Medium-term
5. The BR should consider extending the six-month repatriation deadline for channeling export goods revenues, aiming for its elimination within the next two years. (¶44)	Medium	Medium- term
6. The BR should keep enhancing capacity building to implement technology upgrades and IT solutions to streamline data collection and to improve communication, clarification of regulation. (¶45)	High	Medium-term
7. Authorities should coordinate a conjoint revision of FX regulatory and operational framework and move to the respective AML/CFT and tax regulatory and operational frameworks those provisions not fully adherent to the institutional mission of the BR and that do not serve the purposes of FX market efficiency, but that may be still present in the current norms and in the operational procedures involving FXI and clients, as a legacy from the capital control framework. (¶46)	Medium	Medium-term
8. The authorities should rationalize the sanction structure (progressive fines for late/incomplete submission) and provisions should be made clearer. (¶47)	Medium	Medium-term
9. The BR should consider broadening the “positive list” of allowed current account and financial operations and later consider a “negative list” approach. (¶48)	Medium	Medium-term
FX Market Development		
10. The BR should improve market transparency by increasing regular provision of public reports on FX market liquidity. (¶63)	Medium	Near-term

[1] Near-term: < 12 months; Medium-term: 12 to 36 months.

Recommendations and Authority Responsible for Implementation	Priority	Timeframe[1]
11. The BR should establish a standing FX committee possibly involving all relevant stakeholders to conduct proactive and open discussion on the key issues for the fair and effective functioning of the FX market. (¶63)	High	Near-term
12. The BR should review domestic banks' FX net open position (NOP) limits regularly taking into account the BR's capacity to provide emergency liquidity assistance (ELA) in FX. (¶65)	High	Medium-term
13. The authorities should explore the possibility of harmonizing the domestic ISDA with the global standards. (¶66)	High	Medium-term
14. The BR should allow full use of nonresident COP accounts held in Colombia on proprietary transactions. (¶66)	Medium	Medium-term
15. The BR should allow international correspondent banking relationship to be fully operational using nonresident COP accounts to be held in a FXI Group 1 with appropriate oversight and integration with FX regulation. (¶66)	Medium	Medium-term
16. The authorities should assess the robustness of FX trading systems to high-frequency trading, and upgrade it with safeguards, if needed. (¶64)	High	Near-term
17. Authorities should assess the possibility of licensing non-resident banks to perform certain FX operations onshore without having to establish a legal entity. It must be implemented while ensuring integration with FX regulation and effective coordination with other regulatory and supervisory bodies to enforce appropriate oversight. (¶66)	Medium	Medium-term

I. Introduction

1. **Colombia's economy is well managed but remains vulnerable to shocks.** With commodity exports amounting to about half of total exports, the economy is highly exposed to terms of trade shocks. Colombia is also vulnerable to changing external financial conditions given its persistent current account deficit and external financing needs. Therefore, exchange rate flexibility is a cornerstone of the country's economic policy framework and a critical precondition for the BR's inflation targeting monetary policy strategy. FX lending by banks is low, and the rise in corporate FX debt relative to GDP in recent years is mostly due to the COP's depreciation. This has contributed to the increasing leverage of large corporates. FX-denominated debt is about 35 percent of the private sector corporate debt, creating vulnerabilities to a potential tightening of global financial conditions and to exchange rate risks. Banks' exposure to exchange rate risks is limited.

2. **While the exchange rate has responded flexibly to shocks, the FX market has room for development.** To support the strategic objective of greater internationalization of the COP, and to help economic agents better manage their exchange rate risks, the BR and the SFC requested technical assistance (TA) to identify the regulatory and other hurdles to market development and propose measures to overcome them without increasing financial stability risks. The mission evaluated the potential for greater COP internationalization, reviewed the FX market and capital flow regulations, performed an assessment of market functioning, and put forward options for the authorities' consideration to help ease the mainly administrative burdens to efficient market functioning.

3. **This report is structured as follows:** First, it provides the assessment of the COP's level of internationalization and evaluates its economic drivers. Second, it reviews the regulatory preconditions for complete currency convertibility. Third, it identifies the gaps in Colombian framework and puts forward measures to address them. Fourth, an assessment of FX market functioning is provided, and potential development measures are proposed.

II. Internationalization and Convertibility

4. **Currency internationalization refers to the use of a currency outside its country of issuance.** There are gradations of use, starting with the exchange of one currency against another for trade in goods and services and extending to the denomination of financial contracts in a currency foreign to the contracting parties (Kenen 2012).

5. **The international use of a currency brings several benefits to both the currency issuer and global markets.** First, increased internationalization prevents excessive exchange rate volatility, enhances monetary policy flexibility, and boosts economic resilience by absorbing external economic shocks. This flexibility facilitates smoother adjustments to economic imbalances. Second, settling payments in domestic currency reduces transaction costs[2] and mitigate exchange rate risk. This is particularly advantageous for exporters facing delayed payments, as exchange rate fluctuations can impact profitability. Additionally, as internationalization grows, domestic firms can invoice exports in their own currency, thus passing exchange rate risk to their

[2] I.e., cutting off costs of international payments in commercial and financial operations, such as bid-ask spreads, commissions, hedging, fees, and taxes.

foreign customers.[3] Third, seigniorage gains[4] resulting from increased internationalization play a vital role in financing government expenditures, debt reduction, and lowering borrowing costs, thereby strengthening fiscal sustainability, and supporting investments in economic development projects. Moreover, it attracts foreign investors and enhances the country's position in international finance.

6. **The international use of a currency entails several potential risks.** First, while increased currency internationalization can improve exchange rate stability, it may also amplify exchange rate volatility, particularly due to speculative trading and sudden market sentiment shifts. This volatility, driven by increased capital flows, may pose challenges for businesses, investors, and policymakers in maintaining stability and competitiveness. Second, while a flexible exchange rate regime provides flexibility and autonomy in monetary policy, currency internationalization may still limit the central bank's effectiveness in influencing domestic financial conditions, as foreign investors gain greater access to local currency instruments such as government bonds or securities. Finally, increased capital inflows, if not managed prudently, can contribute to financial fragility. While they can provide liquidity and support economic growth, they also pose risks such as risk-taking and asset price bubbles. Additionally, these inflows can lead to currency mismatches, where liabilities exceed assets in a different currency. This exposes businesses and financial institutions to exchange rate risk, potentially exacerbating financial vulnerabilities. Maintaining robust risk management frameworks and monitoring capital flows are essential to mitigate these risks and safeguard financial stability.

7. **A key precondition for internationalization is convertibility, which broadly refers to the ability to freely exchange currencies without restrictions.** The most familiar form, current account convertibility, encompasses the freedom to convert currency into foreign exchange for the purpose of settling payments for goods and services or other current transactions. Capital account convertibility, on the other hand, permits the conversion of currency for capital transactions and transfers, facilitating unrestricted international investment flows. External convertibility refers to extending to foreign holders of currency the right to convert their balances into foreign exchange. Internal convertibility relates to the right given to domestic (resident) holders of currency to convert their balances into foreign exchange. (Guitián 1996).

8. **The convertibility of a currency can be evaluated from three perspectives.** A currency is considered fully convertible when it meets the following criteria: unrestricted usability for all financial purposes, freedom to be exchanged for other currencies without financial constraints, and the ability to be traded at an established exchange rate. As these standards can be fulfilled to varying degrees, the level of convertibility of a currency can range significantly. Partial convertibility might restrict the currency's usability to specific transactions or limit its exchangeability, thus affecting its classification on the convertibility spectrum (Guitián 1996).

9. **The introduction of currency convertibility offers distinct benefits and introduces certain risks.** External convertibility typically incentivizes foreign economic participation by providing more freedom in currency transactions. Conversely, internal convertibility can expose domestic economic policies to global market forces, posing risks to national economic stability but also potentially enhancing the competitiveness of domestic policies on the international stage (Guitián 1996).

[3] Gopinath (2015) shows that countries with more trade invoiced in their local currency generally have lower pass-through to import prices.

[4] Seigniorage gains refer to the profit earned by the issuer of a currency, typically a central bank, from the difference between the cost of producing money and its face value.

A. Assessing the Colombian Peso's Level of Internationalization

10. **We assess the degree of internationalization using several metrics.** First, FX market turnover involves tracking the volume of FX trading associated with a currency in global FX markets. A higher turnover indicates greater liquidity and attractiveness for investors and traders. Second, we examine the two forms of international FX trading: transactions conducted in foreign markets without the involvement of the issuing country's residents and transactions between non-residents and residents of the issuing country.

11. **The juxtaposition of low currency internationalization and FX trading relative to economic activity (relative to GDP and to international trade) highlights the lesser degree of overall international financial integration in Colombia and selected EMEs.**

12. **Foreign exchange (FX) trading is mostly with non-residents outside the currency-issuing country (Figure 1).** Among emerging market economies (EMEs), the trend towards internationalization has accelerated notably since the 2000s. In Colombia, FX turnover has seen a substantial increase, rising from 0.05 percent of the total FX turnover in 2007 to 0.18 percent in 2022. However, this figure remains significantly lower than the average FX turnover among EMEs, which stood at 6.26 percent in 2022. This surge has been primarily driven by offshore trading mainly in NDFs. Notably, offshore trading averaged around USD 7 billion between 2016 and 2022, surpassing the combined total of onshore and cross-border trading, which stood at approximately USD 4 billion. Moreover, offshore trading has experienced rapid growth, contrasting with the slower increase observed in onshore and cross-border trading.

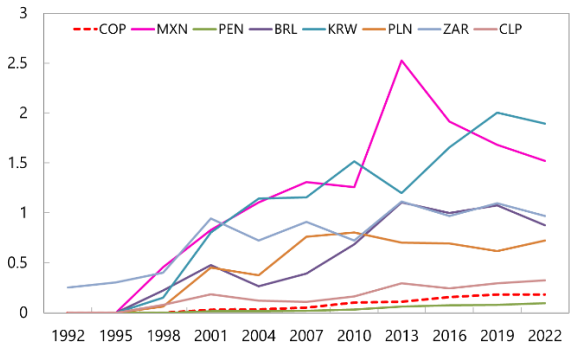
13. **However, FX trading volumes relative to economic activity remain low.** This reflects the modest size of financial markets in EMEs**.** Figure 2 presents a comparison of FX turnover across seven countries (Colombia, Brazil, Mexico, Chile, Peru, Poland, South Korea, and South Africa) relative to their GDP and international trade. The left-hand panel illustrates the ratio of daily FX market turnover to each country's GDP. Notably, the FX turnover/GDP ratio appears comparatively low in Colombia relative to the other economies examined, especially South Africa. The right-hand chart of Figure 2 depicts the ratio of daily FX turnover to international trade, where foreign trade encompasses the total sum of imports and exports of goods and services.

14. **Compared to a broader set of peers, there is potential for the adoption of additional financial instruments and the expansion of deep markets around them.** These instruments include FX swaps and options as illustrated at the bottom of Figure 2. Colombia, Brazil, Chile, and Peru have adopted NDFs as their primary derivative instruments, while Mexico, South Korea, Poland, and South Africa have embraced FX swaps and deliverable forwards.

Figure 1. Trend Towards Currency Internationalization

Daily average FX market turnover - trend

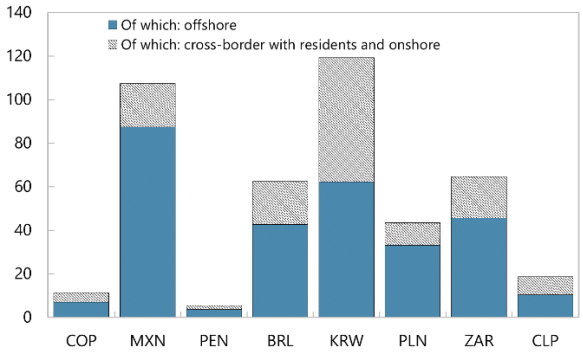
(Net-net basis, daily averages in April, as a percentage of total turnover)



Sources: BIS Triennial Central Bank Survey

FX trading is mostly with non-residents outside the currency-issuing country, 2016-22

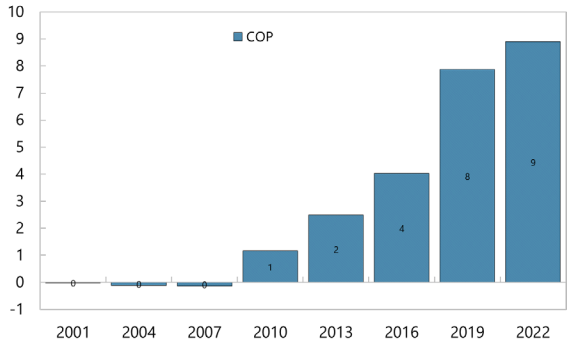
(Net-gross basis, daily averages in April, in billions of US dollars)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Offshore trading in Colombia

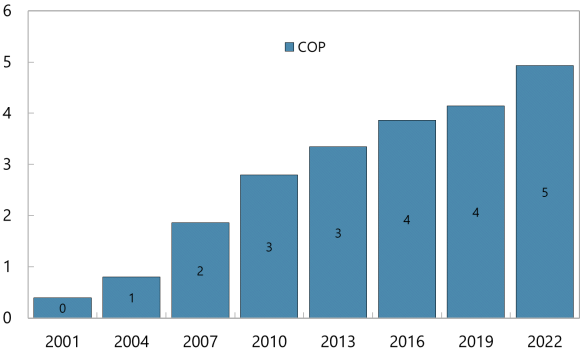
(Net-gross basis, daily averages in April, in billions of US dollars)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Onshore and cross-border trading in Colombia

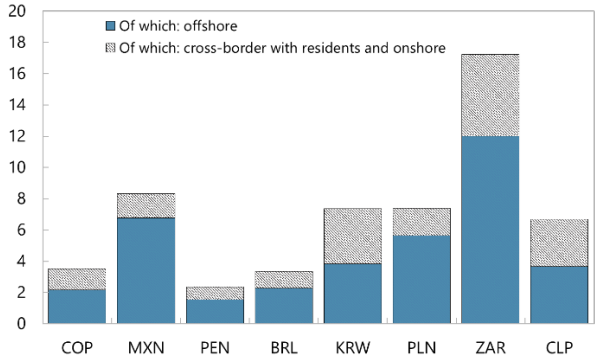
(Net-gross basis, daily averages in April, in billions of US dollars)



Sources: BIS Triennial Central Bank Survey

FX trading turnover/GDP, 2016-22

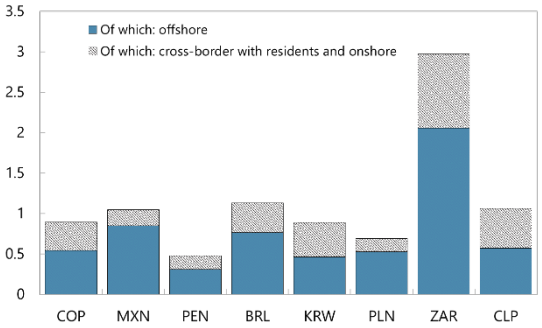
(Net-gross basis, daily averages in April, in percentage)



Sources: BIS Triennial Central Bank Survey and IMF calculations

FX trading turnover/X+M, 2016-22

(Net-gross basis, daily averages in April, in percentage)



Sources: BIS Triennial Central Bank Survey and IMF calculations

The BIS provides data for FX trading as follows:

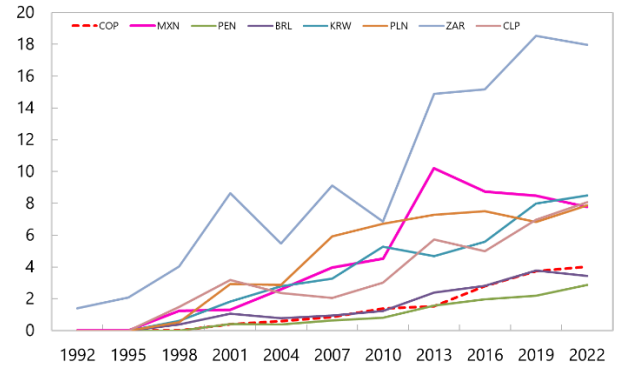
- *The sum of onshore and cross-border trading (Table 19.01 from the BIS).*
- *The total, which includes the sum of onshore, cross-border, and offshore trading (Tables 25_01 and 25.02 from the BIS).*

To obtain the offshore trading volume, we calculate it by subtracting the sum of onshore and cross-border trading from the total.

In figure on the right-hand side, offshore trading is derived by subtracting the sum of onshore and cross-border trading from the total. Then, we calculate the average for the period 2016-2022.

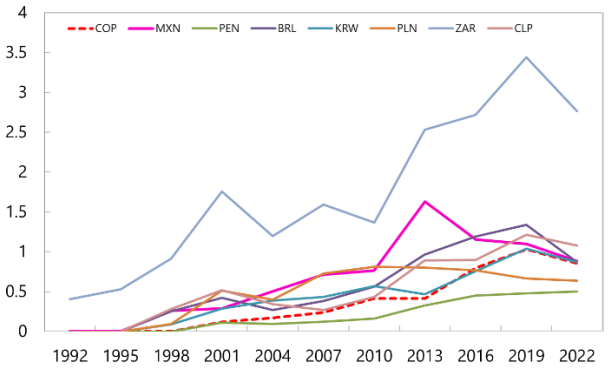
Figure 2. FX Market Turnover Relative to Economic Activity

Daily average FX market turnover / GDP
(Net-net basis, daily averages in April, in percentage)



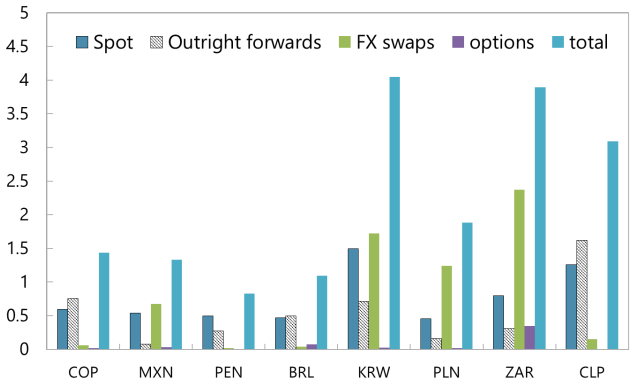
Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average FX market turnover / imports + exports
(Net-net basis, daily averages in April, in percentage)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average market turnover by instruments/GDP
(in percentage)



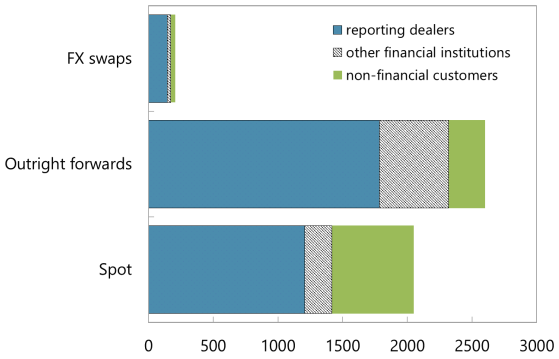
Sources: BIS Triennial Central Bank Survey and IMF calculations

15. **Foreign Exchange Intermediaries (FXI) use the FX market actively to manage their FX positions.** Figure 3 displays the share of trading volume of FX bank-dealers (the "reporting" dealers) with three broad counterparty categories covered by BIS survey: other bank-dealers, other financial institutions, and non-financial customers. Turnover growth was primarily driven by trading in outright forwards and with reporting dealers in Colombia, Peru, and Chile, and with other financial institutions in Brazil. Conversely, turnover growth was led by trading in FX swaps in Mexico, South Korea, Poland, and South Africa with reporting dealers.

Figure 3. FX Market in Selected Countries

Daily average FX market turnover in Colombia

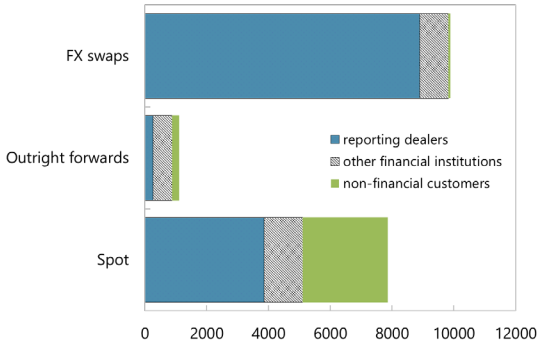
(April 2022, USD millions)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average FX market turnover in Mexico

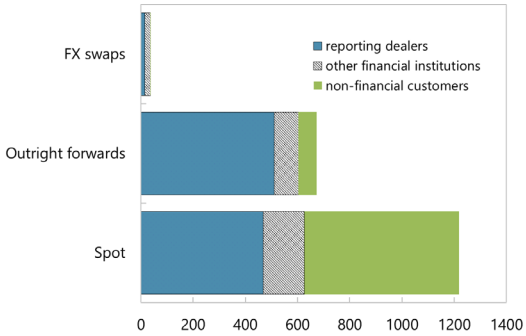
(April 2022, USD millions)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average FX market turnover in Peru

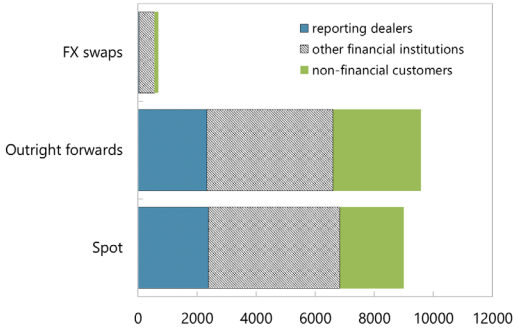
(April 2022, USD millions)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average FX market turnover in Brazil

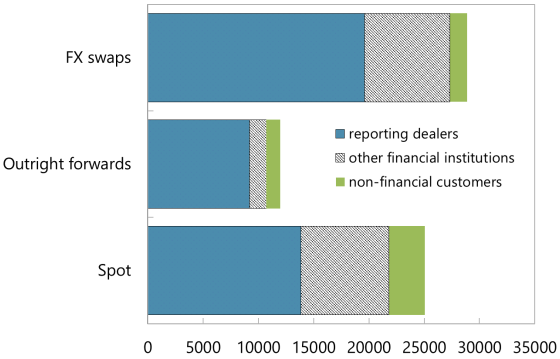
(April 2022, USD millions)



Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average FX market turnover in South Korea

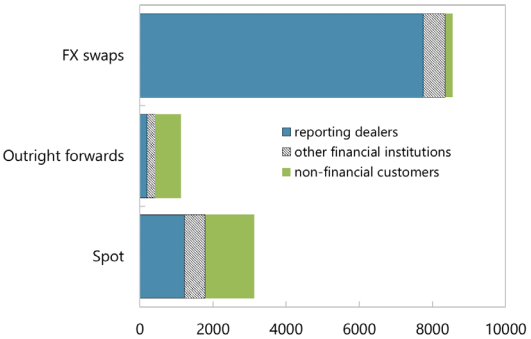
(April 2022, USD millions)



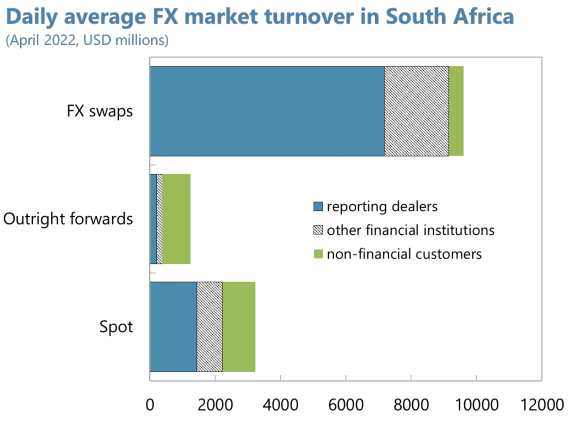
Sources: BIS Triennial Central Bank Survey and IMF calculations

Daily average FX market turnover in Poland

(April 2022, USD millions)



Sources: BIS Triennial Central Bank Survey and IMF calculations



Sources: BIS Triennial Central Bank Survey and IMF calculations

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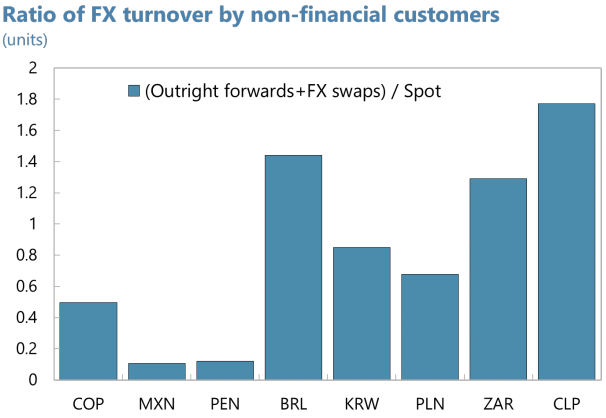


Sources: BIS Triennial Central Bank Survey and IMF calculations

16. **In Colombia, businesses primarily use forward contracts and natural hedging to manage financial risks associated with exchange rate fluctuations and commodity price volatility, with the objective of achieving stability amid currency volatility (Annex I, right and left-hand figures).** This implies that businesses are actively taking steps to mitigate the impact of currency fluctuations on their financial operations. This highlights the importance of mitigating the risk posed by excessive exchange rate volatility for economic stability and growth. Colombian corporates' preference for forward contracts and natural hedging could be linked to the observation that most businesses in Colombia cannot open a foreign currency account with a domestic bank. Instead, they hold such accounts outside their country, enabling them to access a broader range of financial instruments and markets for managing their currency and commodity price risks. This highlights the importance of international financial connectivity and access to diverse financial services for businesses to effectively navigate currency and commodity price volatility.

B. Economic Drivers of Currency Internationalization

17. **Enabling conditions for currency internationalization encompass three fundamental building blocks: the Balance of Payments (BoP), International Investment Position (IIP), and FX risk management.** A crucial aspect of FX Risk Management involves identifying the party assuming the risk, whether residents or non-residents. Despite its limited integration with the global economy, as reflected in its external position, Colombia still possesses significant

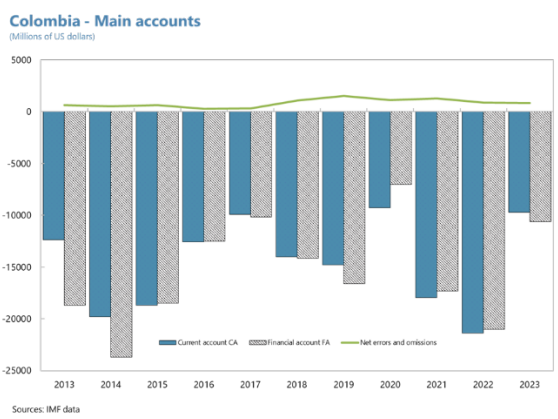
potential to attract foreign investment. Therefore, despite its current position, Colombia has attributes that make it appealing to foreign investors and has the potential to further integrate with the global economy through increased foreign investment. Moreover, FX risk management practices shed light on the level of confidence in the currency's stability and reliability.

18. **A negative current account may lead to decreased demand for the domestic currency (Figure 4, left).** This contributes to the currency's limited internationalization. Similarly, the negative financial account, driven by liabilities exceeding assets, indicates net capital inflows, with foreign investment inflows outweighing outflows.

19. **Over the period of 2000-2023, Colombia recorded a negative net IIP.** The country's foreign liabilities surpass its foreign assets (Figure 4, right). This indicates that the country holds more financial obligations to non-residents than it possesses investments and assets abroad. Such a scenario exposes vulnerabilities in its external financial position and may impact the value and international utilization of the COP.

20. **The use of risk management strategies primarily within the domestic market exhibits a limited degree of internationalization.** Our survey results suggest that there is limited engagement with domestic financial institutions for currency-related transactions (Annex I). First, businesses rely on forwards contracts and natural hedging. Second, they hold foreign currency accounts outside the country. Third, businesses cannot open foreign currency accounts with domestic banks.

Figure 4. Enabling Conditions for Currency Internationalization



C. Regulatory Preconditions for Currency Convertibility

21. **The conditions governing currency convertibility arise from regulatory policies that must consider the country's specific circumstances, characteristics, and readiness to achieve safe convertibility.** The extent of liberalization in place will ultimately determine the level of currency convertibility. This relies on the ability to use the currency freely for all financial transactions, exchange it for other currencies without restrictions, and trade it at market-determined exchange rates.

22. **Safely transitioning to currency convertibility requires solid regulatory preconditions that ensure financial and macroeconomic stability, a sound and developed financial sector, and high standards of governance and disclosure.** On the macroeconomic side, a robust

policy framework must support financial stability through a credible exchange rate regime, an appropriate fiscal stance, a suitable level of international reserves, and low, stable inflation. Adequate regulatory and supervisory policies help build the soundness of the financial system, deepen FX and money markets, and enhance resilience. Strong standards of governance and disclosure increase transparency, reinforce best practices, mitigate risks, and ultimately pave the way for an attractive and sound business environment, which boosts public and investor confidence.

23. **Providing optimal data and ensuring access to reliable and efficient information sources are essential regulatory preconditions for currency convertibility.** Enhancing data quality and statistical capabilities is crucial for an adequate liberalization process and the resulting currency convertibility. Gathering information and data in a timely and efficient manner requires balancing benefits against burdens, including assessing the costs and frictions imposed. Achieving the optimal balance involves implementing strategies that include coordination among authorities, adherence to the institutional mission of the regulatory and supervisory authority requiring the data, intensive and adequate use of technology, and continuous evaluation of the current need for data regarding frequency, timing, and scope. This also includes considering the possibilities of ex-post data reporting, identifying potential overlaps with data required by other authorities, conducting international comparisons with peers, and adhering to standards set by international organizations.

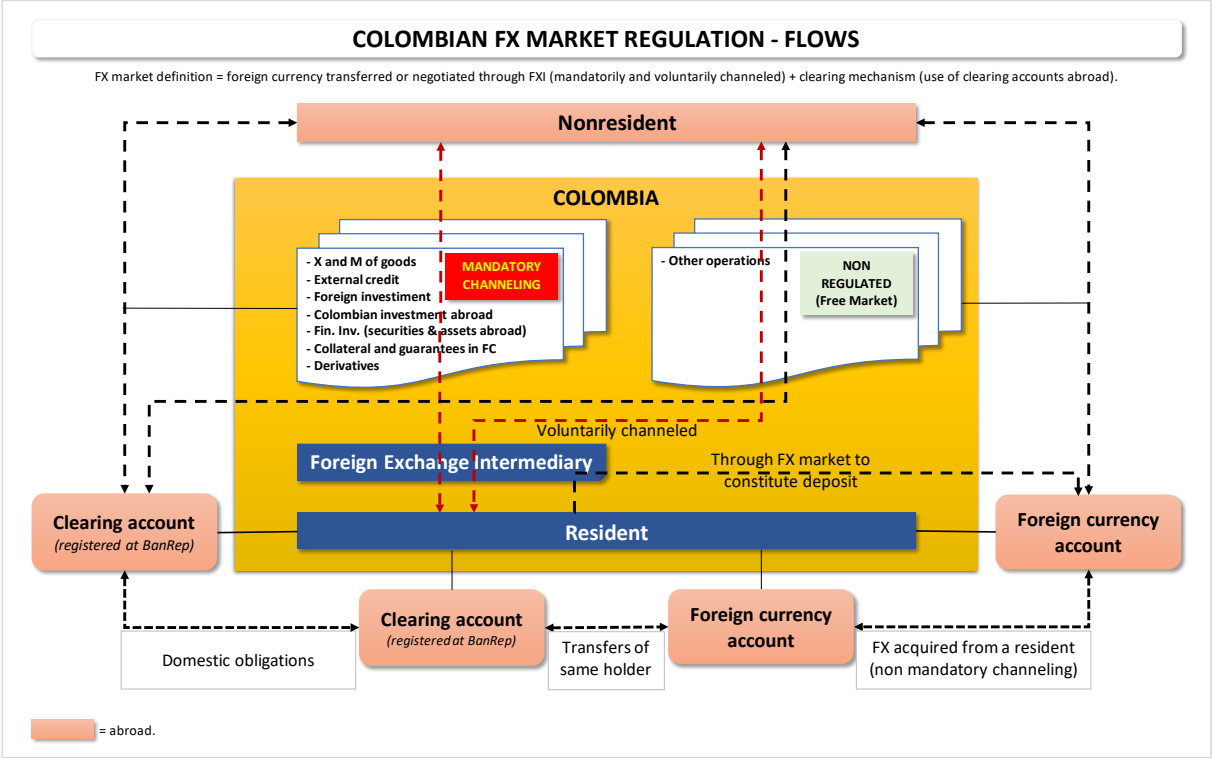
24. **Comparative case studies on liberalization across countries reveal that countries sharing common preconditions for regulatory changes experienced enhanced convertibility.** Key factors for successful liberalization included reliance on adequate exchange rate regimes, macroeconomic stabilization with a solid external position, institutional development (e.g., regulatory and supervisory policies, central bank autonomy, market development), and optimization of data collection. Conversely, in countries where liberalization was premature and outpaced the economy's capacity to manage capital flows, crises ensued. This often led to a reversal of liberalization efforts and the reimplementation of capital controls. The case studies are detailed in Annex III.

25. **Distinguishing between reporting requirements and approval requirements, particularly within the framework of technology systems for data collection, enhances the optimization of data collection.** Reporting requirements and approval requirements serve different regulatory purposes. Approval requirements typically involve providing information on an ex-ante basis. When approval requirements are lifted and replaced with regular reporting requirements, it should prompt a review of data collection practices concerning the current need for data in terms of frequency, scope, and timing.

26. **Colombia's FX market is defined by regulations that are tailored to different categories of operations: regulated and nonregulated FX operations.** The latter is also known as "free market". Regulated FX operations are those that are mandatorily channeled through foreign exchange intermediaries (FXI) or through clearing accounts held abroad, which must be registered at the BR. The mandatory channeling operations are (i) import and export of goods; (ii) external credit, and the related financial costs; (iii) foreign capital investments, and the related yields; (iv) Colombian investments abroad, and the related yields; (v) financial investments in issued securities and assets abroad, and the related yield, except for the investments made with foreign currencies from transactions that should not be channeled through the FX; (vi) collaterals and guarantees in foreign currency; and (vii) derivative transactions. Nonregulated FX operations are any other type of operations that are not mandatorily channeled through FXI or clearing accounts, such as those related to export and import of services, migrant's remittances, donations, etc. These FX operations can be settled through ordinary FX accounts abroad, which

are not registered at the BR, or, by decision of the client, voluntarily channeled through FXI or clearing accounts. Export goods revenues must be channeled through FXIs or clearing accounts within six months of receipt.

Figure 5. FX Channeling Rules in Colombia



Source: IMF staff construction.

27. **The BR has the mandate to regulate the FX market and the FXI.** Eligible entities to be FXI must be registered. They are entities under supervision of the Financial Superintendency of Colombia (*Superintendencia Financiera de Colombia*—SFC). The SFC and the National Tax and Customs Directorate (*Dirección de Impuestos y Aduanas Nacionales*—DIAN) are responsible for ensuring compliance with the exchange regime. The Superintendence for Commercial Societies (*Superintendencia de Sociedades—SSOC*) plays a role in the supervision of FX activities conducted by non-financial entities.

28. **There are 47 entities authorized by the BR to operate as FXIs, with their scope of activity in the FX market depending on the type and size of the institution.** These include credit institutions (24 banks, 2 financial corporations, 2 commercial financing companies, 1 financial cooperative), stockbrokers (10), foreign exchange intermediation and special financial services companies (formerly exchange bureaus), companies specialized in deposits and electronic payments (4), and special official institutions (3). Annex IV provides the full range of FXIs. Additionally, residents may buy and sell FX and traveler's checks professionally, provided they are registered in the trade register and in the register of professional FX dealers established by the DIAN, as stated in Article 84 of External Resolution 1, 2018. Residents may also purchase or sell on the unregulated market with other residents, provided it is not habitual or in a professional capacity.

29. **There is a ban on the domestic use of foreign exchange among residents in Colombia.** This applies to deposits, financial operations, contracts, and agreements, except for the following operations: (i) Sale to other residents; (ii) Purchase of goods in the country from free warehouses; (iii) Freight and international transportation tickets; (iv) International credit card personal expenses; (v) Insurance premiums denominated in foreign currency as referred to in Decree 2555, of July 15, 2010; (vi) Payment of obligations arising from reinsurance abroad; (vii) Payment abroad or in the country related to claims that insurance companies in Colombia must cover in foreign currency (according to Law 9 of January 17, 1991, Article 14); (viii) Purchases and sales of crude oil and natural gas produced nationally by Ecopetrol or by any other entity involved in industrial refining, carried out with other residents; (ix) Payments among domestic branches of companies headquartered abroad that are involved in oil, natural gas, coal, ferronickel, or uranium exploration and mining, and companies involved in the provision of technical services in the hydrocarbons sector; and (x) Financial and asset investments abroad. Additionally, residents may settle the payment of domestic operations among themselves by using FX balances in accounts abroad (clearing accounts only).

30. **Resident accounts in FX held domestically are restricted.** The current possibilities embraces (i) international transportation companies; (ii) travel and tourism agencies; (iii) bonded warehouses and free warehouses; (iv) port and airport services companies; (v) public or private entities conducting international technical cooperation programs with the national government for the deposit of amounts actually disbursed by foreign cooperation agencies; and (vi) trust companies under fiduciary mandates or acting as representatives, spokespersons, and managers of independent pools of foreign exchange assets generated by the activities indicated above. Balances from these accounts may not be used to pay for transactions that are mandatorily channeled.

31. **FX accounts held abroad by residents are unrestricted but are subject to different regulatory procedures based on the account's intended use.** The regulation distinguishes between two types of accounts: clearing accounts and ordinary accounts. Clearing accounts must be used for mandatory channeling operations and may also be used voluntarily for non-regulated operations. Domestic transactions among residents can be settled in FX using the balances in these accounts. These accounts require registration with the BR and monthly reporting. Ordinary accounts, or non-clearing accounts, are used for non-regulated operations and do not require registration with the BR or any reporting. Clients may choose to channel their FX balances through an FXI or a clearing account. In the latter case, FX regulations regarding reporting requirements will apply.

32. **Nonresident accounts in foreign exchange (FX) held in Colombia are restricted.** FXIs can hold nonresident accounts in FX for: (i) Nonresident individuals and legal entities; (ii) Accredited diplomatic and consular missions to the government of Colombia and their staff; (iii) Multilateral organizations and their staff; and (iv) Foreign agents acting as liquidity providers for foreign currency clearing and settlement systems. Balances from these accounts may not be used to pay for transactions that are mandatorily channeled.

33. **Nonresident accounts in COP held in Colombia are also restricted, with no possibility of international correspondent banking relationships.** FXIs can hold nonresident accounts in COP, but restrictions apply to their use and destination: (i) General accounts: Proprietary operations only, related to any nonregulated transactions and to the export and import of goods, and derivatives (settled in COP); (ii) FDI accounts: FDI investments (funding from domestic operations); (iii) Portfolio investment accounts: Portfolio investments (funding from domestic operations); (iv) External credit accounts: Disbursement and payment of local loans; (v) Central depositories: Central depositories of foreign securities; (vi) Accounts to disperse payment of

Colombian export of services: Third-party transactions; (vii) Electronic deposits and simplified accounts (CATS): Nonregulated transactions, not allowed to provide credit; and (viii) Term deposits: Current regulation limits the participation of offshore investors in the term deposit certificates (CDTs) market, as investors have to buy through a local administrator in the secondary market, given that this is considered foreign[5] portfolio investment.

34. **The current regulatory framework ensures equal treatment for foreign investment.** Apart from specific conditions in the FX regulations adopted for special regimes, there is no discriminatory treatment against or in favor of foreign investors. Foreign investment is free to participate in any economic sector except those directly or indirectly related to national security and defense activities, and the processing, disposal, and elimination of toxic, hazardous, or radioactive wastes not produced in the country.

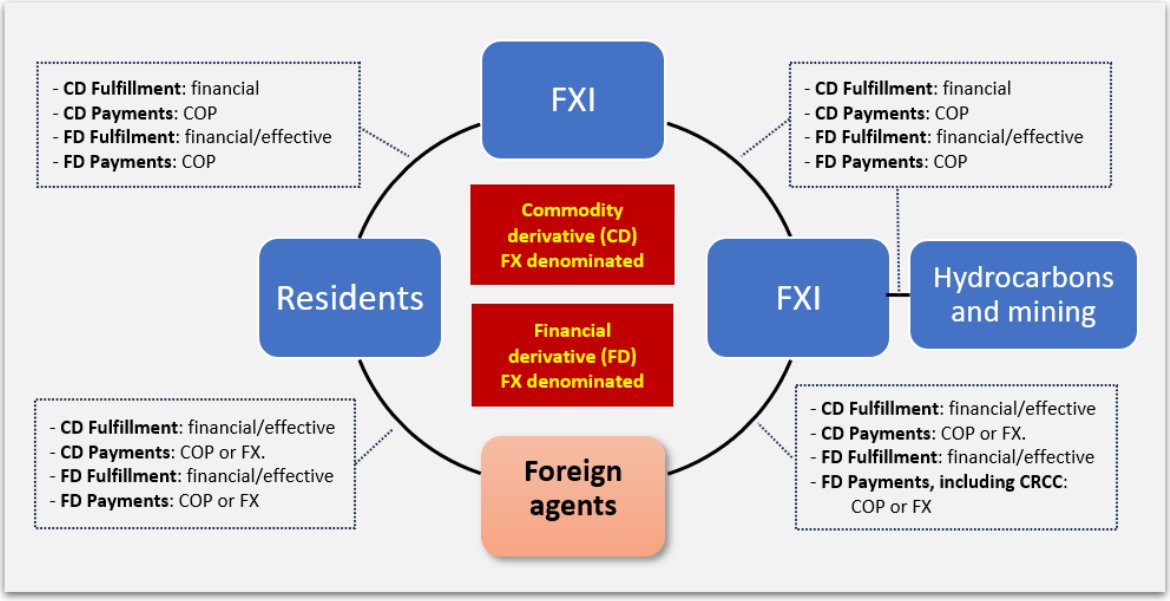
35. **There are specific FX regulations on international investments, primarily focusing on the collection of information.** The requirement to register the investment allows for the free movement of the related capital. Except for investments in the financial sector, which require prior authorization from the SFC, foreign investments in Colombia and Colombian investments abroad do not require prior authorization by the BR. However, both onshore and offshore investments must be registered with the BR, which shares the information with supervisory and tax authorities. Foreign investment in shares of a company, declared by the investor to be intended for an extended period, is considered foreign direct investment. The information declared by investors to the BR is their full and exclusive responsibility and will not undergo specific examination or qualification by the BR before the registration of the investment is processed.

36. **Loans by residents to nonresidents and from nonresidents to residents, whether commercial or financial, may be disbursed and repaid in any currency, regardless of the term.** Credits denominated in foreign currencies provided by FXIs to residents or to other FXIs are also considered external credits according to FX regulations. External credits, including those obtained through the placement of securities in the international market, must be channeled through FXIs, which provide all related information to the BR. FXIs are also responsible for providing information to the BR on credits provided by residents to nonresidents. The regulation is extensive and detailed regarding the provision of information.

37. **Regarding FX regulation on derivative operations, specific provisions apply to commodity derivatives, financial derivatives, and credit default swaps.** Both commodity and financial derivatives can be traded between residents and FXIs, as well as between these parties and eligible foreign agents, subject to certain conditions as illustrated in Figure 6. The hydrocarbon and mining sectors may trade commodity and financial derivatives only with FXIs. Credit default swaps may only be issued in COP or foreign currency by external issuers, covering either external or local assets. Related payments can be made in either COP or foreign currency, allowing for financial or effective fulfillment.

[5] Ideally, regulatory provisions involving nonresidents should not rely on nationality criteria, but on resident/nonresident criteria. This approach is also part of IMF jurisdiction.

Figure 6. Commodity and Financial Derivatives—Payments



Source: IMF staff construction.

Assessment of Colombia Against Peers

38. **Like many other EMEs, especially in Latin America, Colombia experienced external vulnerabilities in the wake of financial or debt crises, leading to episodes of FX market control.** This environment gave rise to dense and complex regulations governing the FX market, necessitating stringent control over the use of convertible currencies. These measures affected the balance of payments operations as a whole, ranging from the current account, particularly foreign trade, to the financial account, and including domestic transactions between residents.

39. **In addition, many economies relied on the development of FX trade repository systems to help monitor the FX market.** Many existing trade repositories originated from the historical need to monitor capital controls. Despite the easing or elimination of some restrictions over time, these reporting systems continued to operate and adopted new functions (FSB 2015). These functions might include use by other governmental agencies, notably tax authorities, financial intelligence units (AML/CFT), ministries of finance, and ministries of development, among others. Moreover, they also served as relevant auxiliary support for compiling the balance of payments and for more precise market monitoring. As liberalization progressed, some jurisdictions developed strategies to reduce costs and reporting burdens, particularly through the use of thresholds or by waiving the reporting of non-material operations, while still benefiting from the supportive trade repository infrastructure.

40. **The 2022 FSAP noted that Colombia has made significant progress in aligning its AML/CFT framework with the revised Financial Action Task Force standards, but efforts should continue to enhance the regime's effectiveness.** Colombian authorities have recently revised the national risk assessment for money laundering and terrorism financing and improved the legal and regulatory framework, including the creation of the beneficial ownership register to enhance entity transparency. The SFC has improved its risk-based approach to AML/CFT supervision in recent years, including consolidated supervision and cross-border activities for banks. Based on the 2022 FSAP recommendations, the authorities have been working on: (i)

Strengthening requirements for politically exposed persons; (ii) Bringing the remaining designated non-financial businesses and professions under the AML/CFT regime; (iii) Addressing the money laundering and terrorism financing risks associated with crypto assets; and (iv) Ensuring that virtual asset service providers are properly licensed and monitored/supervised for AML/CFT compliance.

41. **Strict regulations and inflexible information-gathering systems in the FX market may provide relevant support in a capital control environment, yet they can hinder the achievement of optimal liberalization.** The current regulatory and data provision infrastructure can, on one hand, provide accurate data for monitoring and planning across various governmental fields. It may also have contributed to the gradual removal of restrictions and an orderly transition to a more liberalized economy. However, Colombia has been progressing in the liberalization and internationalization of its economy, supported by adequate economic fundamentals, including a flexible exchange rate and effective financial regulatory and supervisory policies. In this context, additional steps in regulation and information provision are essential to support this path. Maintaining complex regulations and data-gathering in the FX market within an increasingly open economy reduces international competitiveness by enforcing high compliance costs, imposing frictions, and potentially hindering economic progress. Additionally, it may discourage foreign investments, create difficulties in responding to a more dynamic economy, and ultimately deter the process of currency convertibility.

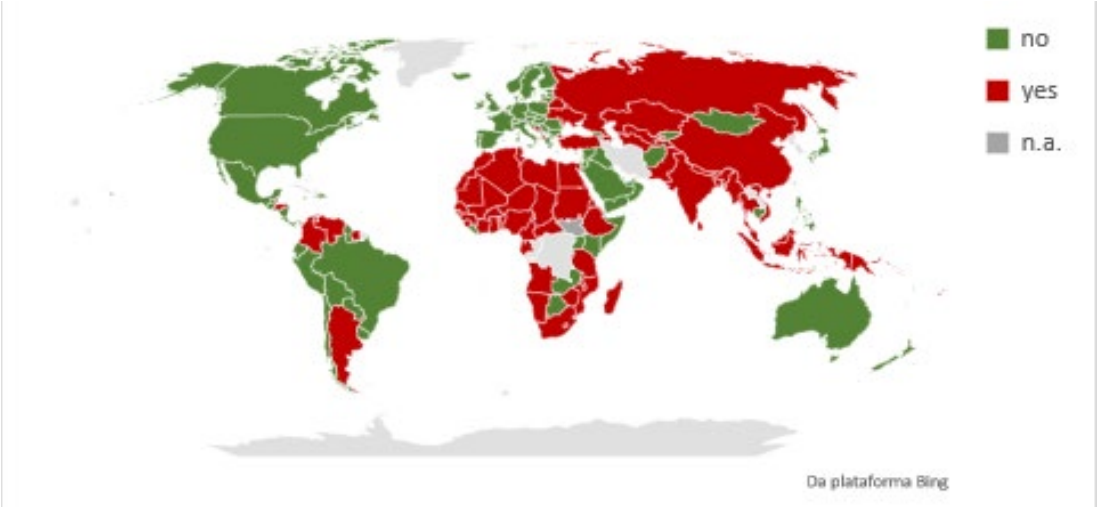
D. Easing the Administrative Burden and FX Market Liberalization

42. **Authorities should determine or revise a transaction size threshold for ex-post data provision, balancing the number and total amount of small-value transactions.** They should also revise the purpose, scope, and usability of information collected from the public and the financial sector on FX transactions, external credit, and investments—including through clearing accounts—to simplify data collection and eliminate overlaps and multiple reporting forms. This enhances regulatory preconditions for currency convertibility by reducing the burden on FX transactions and contributing to a more efficient and effective data-gathering process focused on material information. Additionally, it helps reduce costs, streamline operations, and ultimately contributes to effectively internalizing the benefits of foreign exchange market liberalization within its operational framework. This should be executed in a coordinated manner by all authorities reliant on FX operations data.

43. **The BR should uphold the procedure of not collecting any underlying documentation for FX operations for compliance purposes at a transaction level, focusing solely on data, in adherence to its institutional mission.** Documentation assessment should be the responsibility of supervisory authorities and FXIs. Additionally, the BR should evaluate whether the regulatory framework for a risk-based approach to FX operations requires improvement or clarification for regulated entities or clients. This measure enhances the streamlining of operations and prevents unnecessary burdens that are not directly related to the effective functioning of the FX market. It contributes to the effective incorporation of the benefits of FX market liberalization within its operational framework. Clients should still be required to present underlying documentation, but only as mandated by FXIs under their own risk assessment and business purposes. This documentation should remain with the FXIs for a prescribed period, typically 5 or 10 years, and be available to supervisory authorities under their respective competencies. Moreover, the implementation of a risk-based approach by FXIs in their client relationships in FX operations should be assessed to identify potential challenges, clarify needs, or address requirements not directly related to FX regulation. This measure requires coordinated efforts by all authorities reliant on FX operations data.

44. **The BR should consider extending the six-month repatriation deadline for channeling export goods revenues, aiming for its elimination within the next two years, provided the current favorable conditions in the Colombian FX market continue.** The local spot FX market is liquid, competitive, and efficient by international standards, with a robust interbank FX market. The BR's FX operations have been effective and contribute to the better functioning of the market. Currently, there is no repatriation or surrender requirement to the central bank or authorized dealers for all exports of services, nor is there a requirement for all exports of goods. Additionally, the repatriation of revenues from export goods can be carried out through clearing accounts held abroad, without necessarily bringing these revenues into the country. Therefore, under the current operational and regulatory framework, eliminating the repatriation requirement for channeling export goods revenues would be a natural, non-macro-critical step toward further liberalization, provided conditions remain favorable. This step will enable Colombian exporters to enhance their capabilities for managing revenues abroad. It also helps reduce the burden of controlling revenue flows that must comply with this requirement, which usually necessitates dedicated structures and additional operational costs for both companies and FXIs. Furthermore, it levels the playing field with exporters from other countries—potential competitors—who are not subject to similar obligations. According to AREAER (2022), none of the countries discussed in Annex III have repatriation requirements for export revenues. Figure 7 further expands the comparison to include other countries.

Figure 7. Repatriation Requirements—Country Comparison



45. **The BR should continue enhancing capacity building to implement technology upgrades and IT solutions to streamline data collection and improve communication and clarification of regulations.** Adequate regulatory compliance relies on optimized data collection, clear communication, and robust training capabilities. As liberalization progresses, the volume and sophistication of FX operations naturally increase, necessitating investments in capacity building to support a healthy regulatory environment. These solutions strengthen regulatory and supervisory effectiveness, foster innovation, ensure compliance with fewer frictions, and facilitate adaptation to a dynamic market.

46. **Authorities should coordinate a joint revision of the FX regulatory and operational framework and transfer to the respective AML/CFT and tax regulatory and operational frameworks those provisions not fully aligned with the institutional mission of the BR and**

that do not serve the purposes of FX market efficiency. These provisions may still be present in current norms and operational procedures involving FXIs and clients as a legacy from the capital control framework. Conflating regulations dedicated to the functioning of the FX market with provisions targeted exclusively at ensuring AML/CFT and taxation may blur efficiency in the FX market and lead to unintended outcomes. It may deter market development by imposing significant frictions, such as the requirement for granular data in a timely manner. This conflation may also convey inaccurate information about the level of economic liberalization, potentially negatively impacting the country's reputation among both domestic and foreign clients. A clear and adequate regulatory perimeter, according to each authority's competence, enhances coherence and provides clarity on the real level of development of the FX market.

47. **Authorities should rationalize the sanction structure (e.g., progressive fines for late or incomplete submissions) and clarify the provisions.** Excessively high and disproportionate fines may incentivize a "fear of failing" mindset and inhibit the development of more effective market functioning. FXIs and clients may become overly cautious, hindering the development of risk management policies. Conversely, proportionate sanctions improve the business environment and may encourage FXIs and clients to develop risk management policies, engage in proportionate and managed risks, and adhere to regulatory standards. As a positive side effect, this approach also streamlines operations, reduces costs, encourages competition and innovation, and effectively internalizes the benefits of foreign exchange market liberalization within its operational framework.

48. **The BR should consider broadening the "positive list" of allowed current account and financial operations and later transitioning to a "negative list" approach.** The existing conditions in Colombia suggest the possibility of liberalizing certain current account and financial operations within the current regulatory framework by expanding the "positive list." As a subsequent measure, transitioning to a "negative list" could introduce regulatory simplification and flexibility. This approach, also known as the "top-down approach," focuses on listing restrictions rather than permitted operations. It eliminates the need to continuously update a list of permitted operations, allowing authorities to concentrate on identifying and restricting activities considered harmful or high-risk. Such a shift has the potential to reduce bureaucratic hurdles, stimulate innovation, and streamline the regulatory process. This transition requires careful continuity of effective supervision and regulation, including robust prudential regulation, and the full capacity of regulated entities to manage risks.

III. FX Market Development Strategy

49. **A well-functioning FX market offers several key benefits to an EME with a flexible exchange rate like Colombia.** It promotes efficient price discovery and allows exchange rates to reflect the underlying economic fundamentals accurately. This contributes to efficient monetary policy implementation as policy makers can rely on effective exchange rate channel. A well-functioning market also facilitates hedging opportunities, enabling economic agents to manage exchange rate risk, which, in turn, can help attract foreign investment.

50. **We consider four building blocks of FX markets' development against which we assess the situation in Colombia.** This conceptual framework allows for designing a market development strategy.

- *An enabling regulatory environment* that facilitates effective market making in various market segments, eliminates administrative burdens and ensures legal certainty of the financial contracts, particularly derivatives.
- *A robust market infrastructure*, encompassing payment and settlement systems, trading platforms, market data providers, trade repositories, and the treasury and risk management systems of market participants.
- *A diverse range of financial instruments,* available to market participants to hedge their derivative positions if needed.
- *A broad user base with heterogenous risk profiles,* possessing incentives and potential gains from trade, as well as sufficient knowledge to manage financial risks.

A. Assessment of the Functioning of Colombia's FX Market

51. **The spot FX market is fairly liquid, competitive, and efficient by international standards.** Trading volumes in the onshore FX market are relatively high. Daily average market turnover in the inter-dealer segment has been around USD 750 million, and dealer-to-customer volume has been around USD 600 million, more than half of which is attributable to relatively small non-financial customers, while the largest clients are domestic pension funds and foreign institutional investors. The interbank FX market is competitive with the 10 most active intermediaries covering about two thirds of the spot turnover, the largest of which being responsible for 11 percent. The average interbank bid-ask spreads are close to 5 basis points, which is tighter the typical 5-15 basis point spreads in EMEs.

52. **The FX hedging market is dominated by NDFs while activity in FX swaps, cross-currency swaps, deliverable forwards, and options are small.** In Colombia, as in numerous EMEs, historical capital control measures have led to the predominance of the NDF market as the primary hedging instrument, rather than deliverable forwards or swaps. The local interbank NDF market moderately competitive with the two largest intermediaries covering half of the turnover. Most tenors are up to 6 months. The swap market and deliverable forward market has not developed as non-residents' COP settlement is inhibited by regulatory constraints. In addition, the financial transaction tax makes deliverable derivatives more expensive relative to non-deliverable ones.

53. **The BR's FX operations are sophisticated and conducive to preserving exchange rate flexibility and safeguarding market functioning.** The central bank abstains from intervening in the FX market barring episodes of extreme volatility. This practice incentivizes economic agents' use of market-based risk management instruments and techniques, contributing to the development of the FX hedging market. The BR accumulates FX reserves in transparent series of auctions of USD/COP options with a strike price linked to the moving average of the spot exchange rate. This way, FXIs will only sell the BR foreign currency when the COP appreciates faster than the average pace of the previous 20-days' trend, which results in lower cost and less risk of COP depreciation. In addition, as banks progressively delta-hedge their option positions, the impact on the spot market is dispersed over time, eliminating the risk of disorderly market conditions.

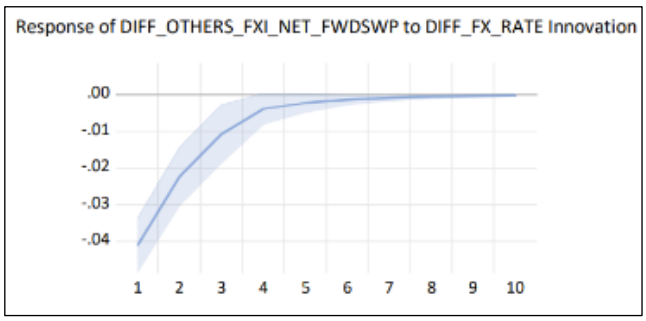
54. **The user base of the hedging market comprises market participants with diverse risk profiles.** Domestic pension funds have been accumulating foreign assets and hedging them with short USD (long COP) forward positions that reached USD 19 billion. Foreign investors, who hold about 30 percent of local currency government bonds, hedge their currency exposure by

maintaining short COP (long USD) forwards in the amount of USD 18 billion. The domestic non-financial corporate sector is net importer and hedge its currency exposure with short COP (long USD) forwards amounting to USD 3 billion against local FXIs. Some exporters maintain short USD (long COP) forwards against offshore banks, on which no quantitative data is available. Domestic banks maintain close to neutral FX position.

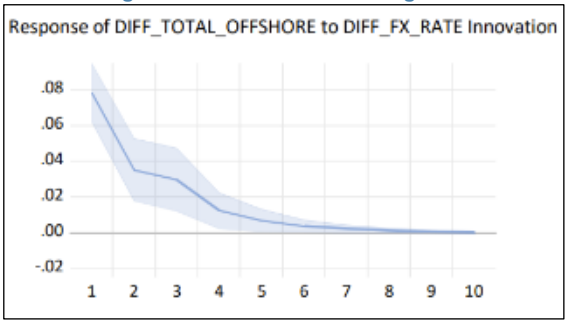
55. **Hedging dynamics are driven by changes in the exchange rate level anticipating a mean reversion pattern of the exchange rate.** To explore the hedging behavior foreign investors, domestic pension funds, and non-financial corporates, we estimated a VAR model (for details, see Annex VI). The results show that when COP depreciates against the USD, offshore investors take long USD forward position which is consistent with momentum trading strategy, while domestic NFCs and pension funds take short USD forward positions (Figure 8). The latter suggests that implicitly, relevant domestic sectors expect that the exchange rate will exhibit mean reversion. This is useful in the sense that their hedging activity has an automatic stabilizer effect on the exchange rate.

Figure 8. Measures of FX Market Efficiency and Resilience

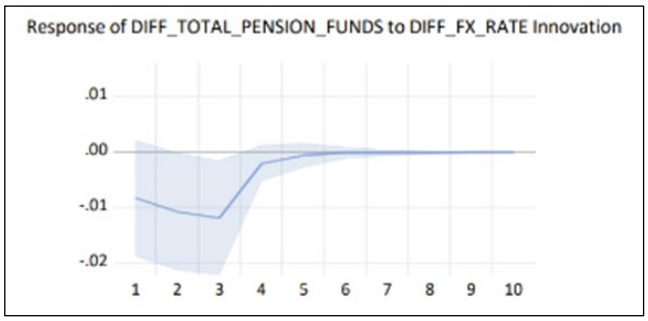
Impulse response of NFCs FX derivative exposure to changes in the USD/COP exchange rate.



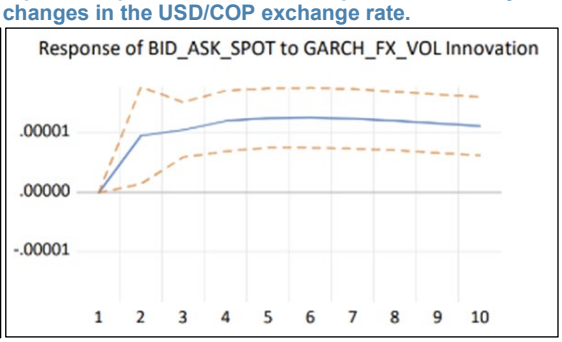
Impulse response of non-residents' FX derivative exposure to changes in the USD/COP exchange rate.



Impulse response of pension funds' FX derivative exposure.



Impulse response of the bid/ask spread to volatility- to changes in the USD/COP exchange rate.



Source: BR and IMF staff calculations.

We estimated two VAR models and derived impulse response functions using a Cholesky decomposition. For model 1 (shown in the right-hand figure at the bottom), the ordering was [bid_ask_spot; fx_vol_sqr; fxi_fxi_spot; fxi_other_spot; garch_fx_vol; spot_depth_at_10]; for model 2 (shown in all figures except the last one), the ordering was [diff_fx_rate; diff_others_fxi_net_fwdswp; diff_total_offshore ;diff_total_pension_funds; fx_rate_daily_return].
The impulse response functions include a 95 percent Confidence Interval (CI) computed using Monte Carlo simulations *(For more details, see Annex VI).*

56. **The direct participation of non-residents in the FX market is constrained by regulations.** Non-resident banks cannot open corresponding COP or FX accounts with local banks and participate in the domestic FX clearing mechanism. As a result, foreign banks need to establish a local subsidiary or branches under the same regulatory requirements for subsidiaries (e.g., BBVA, J.P. Morgan, Santander, Scotiabank, etc.) to be able to participate in the local FX market.

57. **The onshore and offshore NDF markets are segmented and exhibit several key differences.** Only resident clients can trade onshore NDFs which are settled COP. In this segment, Colombian pension funds and domestic corporates take short USD positions against the COP to hedge exchange rate exposures on their foreign assets and net imports, respectively. Non-residents who invest in local government bonds typically take long USD positions in offshore NDFs that are settled in USD.

58. **In addition to the different settlement currencies, another key difference between onshore and offshore NDFs is the counterparty risk mitigation mechanism.** In the onshore segment, clients don't maintain margin accounts as they lack collateral. Banks compensate for this by applying a credit surcharge in the quoted price. In the offshore trading, the regular ISDA and CSA arrangements govern the margin maintenance. The local ISDA has different arrangements, and is only used by state-owned enterprises, as required by the government.

59. **Money market instruments are available to help price the NDF contracts.** The BR publishes term benchmarks (in arrears) that can be used to calculate the USD-COP interest rate differential to price forward exchange rates. The government securities market provides sufficient arbitrage opportunities to maintain market clearing price in the FX forward market. In addition, a liquid overnight indexed swap market exists on the CME to facilitate arbitrage for those without access to the domestic money market.

60. **An FX benchmark is available and widely used.** The BR and the SFC share responsibility for the benchmark calculation and publication. The SFC calculates and publishes the benchmark exchange rate (TRM), and the BR sets the methodology. The rates are calculated based on t+0 spot transactions traded on electronic trading platforms. and published with a one-day lag. Bank clients can submit benchmark orders typically three days in advance and use this possibility to mitigate exchange rate risk on payments to the government.

61. **The infrastructure of the domestic spot FX market has some unique characteristics which help maintain liquidity but creates operational challenges for some market participants.** The standard settlement is t+0, while t+1, t+2 and t+3 is also possible but used to a lesser extent. Only transactions executed by 1 p.m. are eligible for same-day settlement. In addition, interbank spot trading is centrally cleared, which improves liquidity as it allows banks to trade more without being concerned about counterparty limits. These arrangements, in combination with client transactions' documentation requirements prompt banks to concentrate their back-office activities to the afternoon hours. Client documentation errors can complicate this process.

B. Building Blocks of a Market Development Strategy

62. **Based on the above assessment, the fairness and effectiveness of the FX market can be improved by easing entry barriers and administrative burdens for market makers and costumers.** To prevent increasing the risks and costs to the whole economy, the sequencing and scaling of these easing measures is critical. In anticipation of the eventual opening of the local market to non-resident participants, the harmonization of the infrastructure and regulatory framework with the global standards will be inevitable.

63. **The BR should first improve communication with market participants and make the market more transparent.** Establishing a standing FX committee possibly with the participation of all relevant stakeholders would help conduct proactive and open discussions on the key issues for the fair and effective functioning of the FX market. Implementing this practice early on would put the BR in a favorable position in terms of market intelligence and agility. To make NFCs more informed about market liquidity conditions, the BR should consider publishing some aggregate market liquidity indicators of FX trading platforms on a daily basis.

64. **On the infrastructure front, it is critical to have a trading platform in place that is robust to the potential participation of international banks.** To this end, the authorities should assess the robustness of the foreign exchange trading and registering systems to high-frequency trading, and upgrade it with safeguards, if needed.

65. **The BR should review domestic banks' FX net open position (NOP) limits regularly taking into account the BR's capacity to provide emergency liquidity assistance in FX.** To keep the NOP limits close to their optimal levels, it may be warranted to adjust them time to time depending on banks' risk absorption capacity and the riskiness of the exchange rate exposure. This would improve local banks' competitiveness in the event of non-resident competitors' entry to the local FX market. One caveat for potentially increasing NOP limits is that the BR's capacity to deliver on its lender-of-last-resort function in foreign currency is constrained by its FX reserves. In any case, NOP adjustments should be done for prudential purposes and not to manage capital flows. The latter could be found to constitute a tightening of capital flow measures, which is only appropriate under the Fund's Institutional View under certain circumstances.

66. **To enable the entry of non-resident banks to the domestic FX market, several regulatory constraints should be eased.** First, the competent authorities should explore the possibility of harmonizing the domestic ISDA with the global standards. This would help provide more attractive derivatives to the domestic NFCs. Second, the BR should consider allowing the full use of nonresident COP accounts held in Colombia on proprietary transactions. This would require changing the current definition of foreign investments in Colombia in international treaties and domestic regulations (i.e., FX denominated assets of non-residents), to make the investments classification indifferent to the currency denomination. Third, the BR should allow international correspondent banking relationship to be fully operational using nonresident COP accounts to be held in a FXI Group 1. This measure is essential for the integration of the local FX market to the global financial system and would require Implementing appropriate oversight and integration with FX regulation. Finally, the BR should assess the possibility of licensing non-resident banks to perform certain FX operations onshore without having to establish a legal entity. All these changes must be implemented while ensuring integration with FX regulation and effective coordination with other regulatory and supervisory bodies to enforce appropriate oversight.

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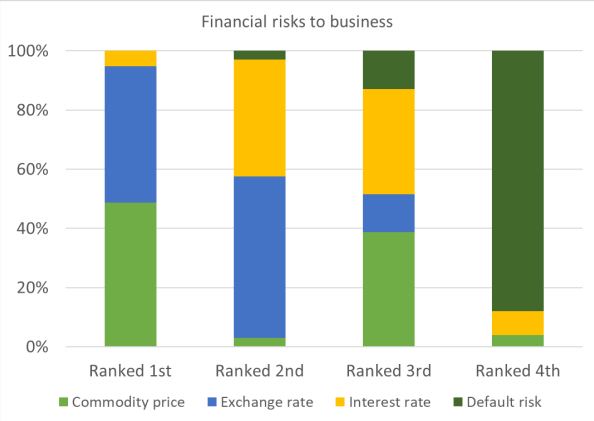
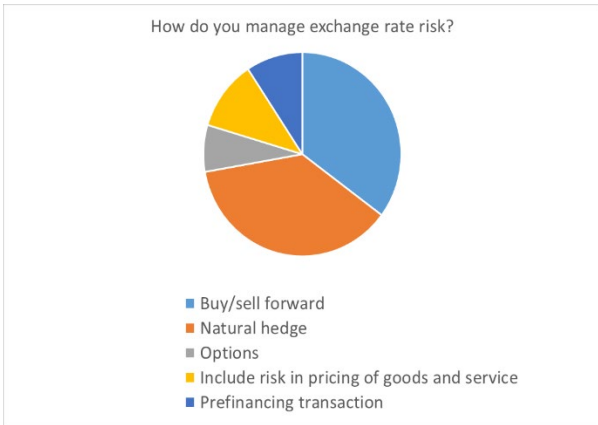
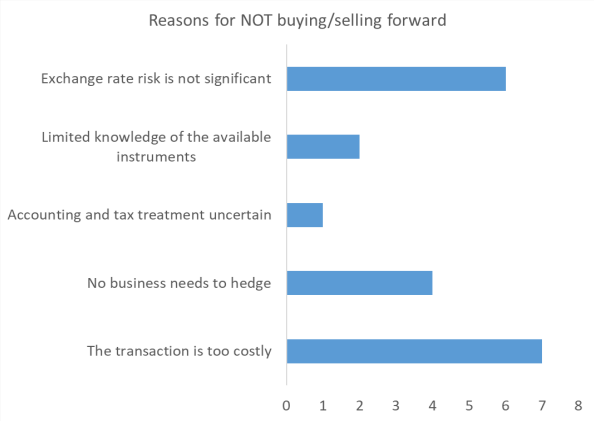
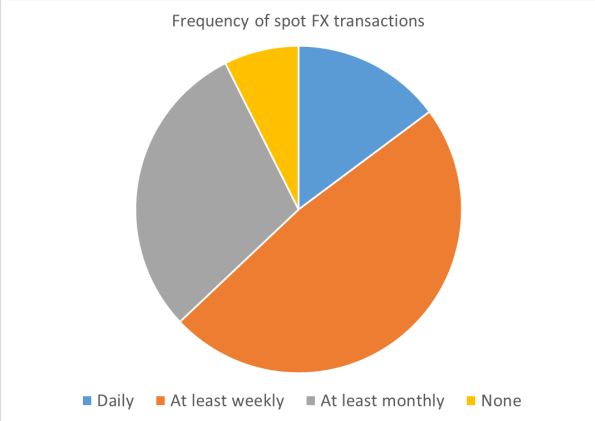
Annex I. Non-financial Corporate Survey Results

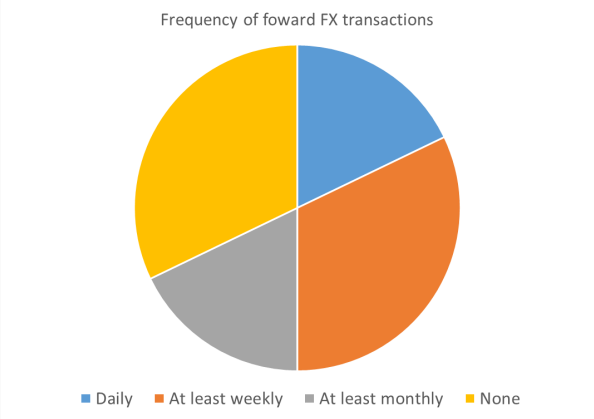
Sample size: 36 companies responded to the survey.

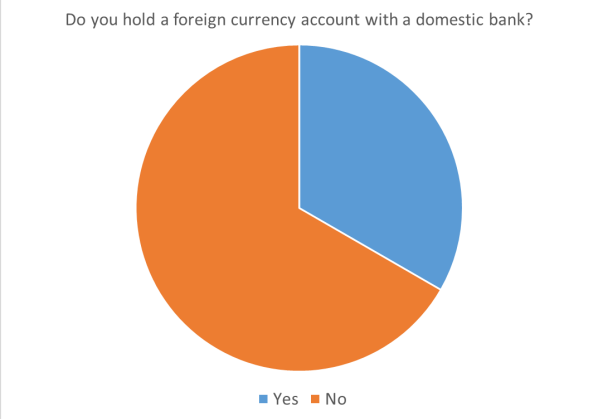


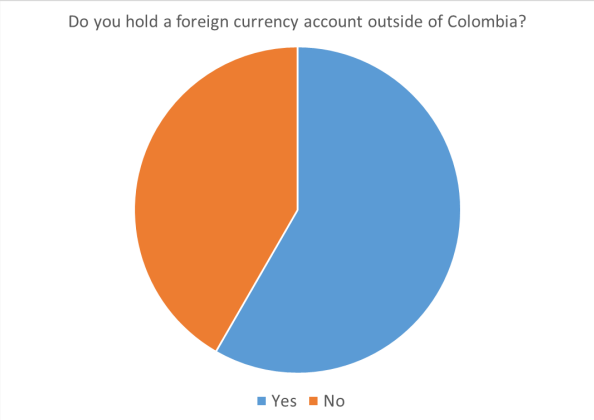


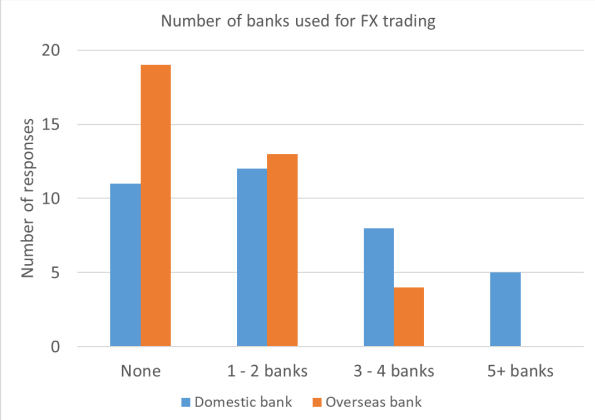


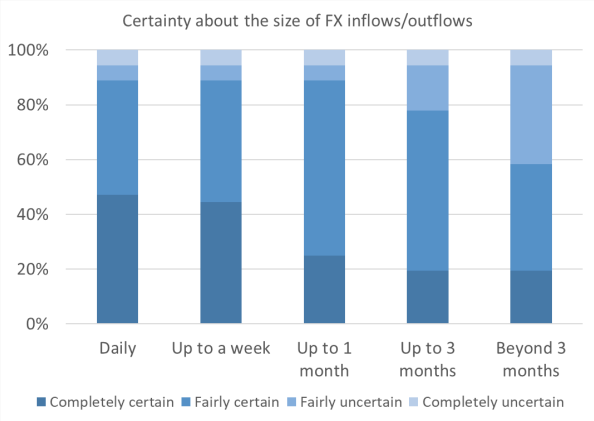


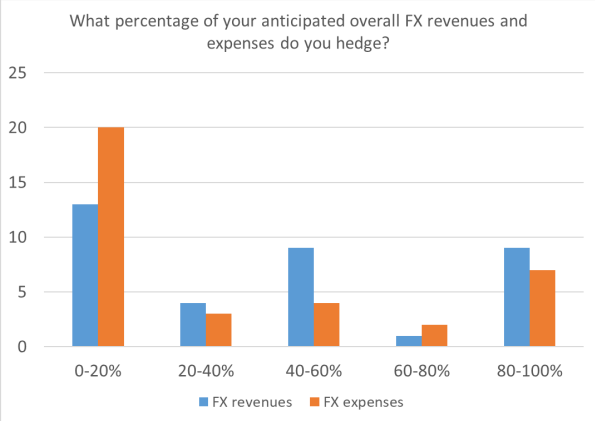


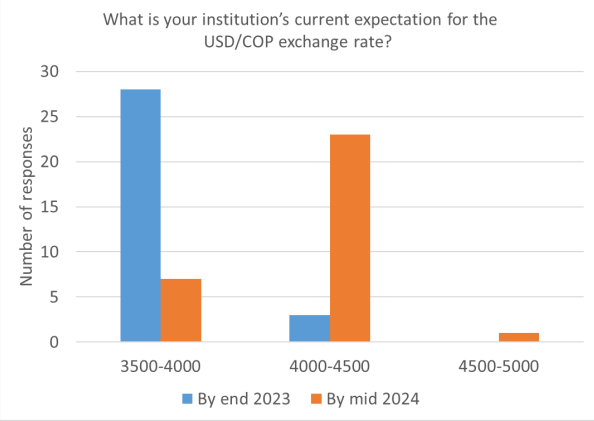



Do you hold a foreign currency account outside of Colombia?
Yes
No


Number of banks used for FX trading
Number of responses
20
15
10
5
0
None
1 - 2 banks
3 - 4 banks
5+ banks
Domestic bank
Overseas bank

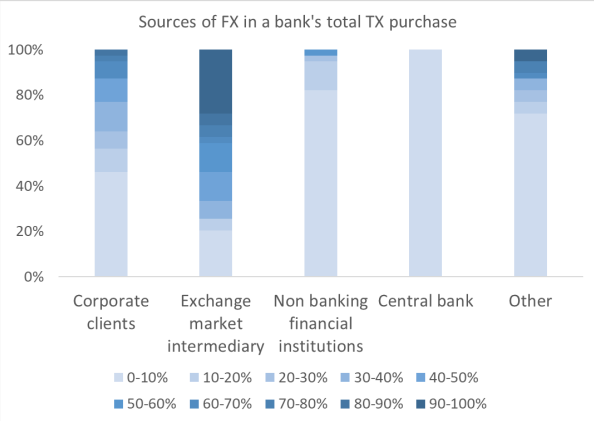

Certainty about the size of FX inflows/outflows
100%
80%
60%
40%
20%
0%
Daily
Up to a week
Up to 1 month
Up to 3 months
Beyond 3 months
Completely certain
Fairly certain
Fairly uncertain
Completely uncertain

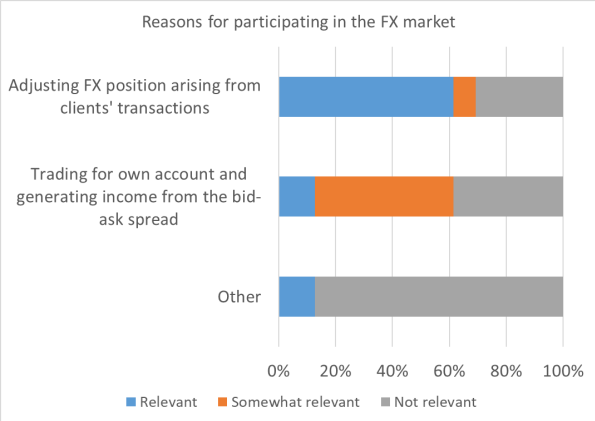

What percentage of your anticipated overall FX revenues and expenses do you hedge?
25
20
15
10
5
0
0-20%
20-40%
40-60%
60-80%
80-100%
FX revenues
FX expenses

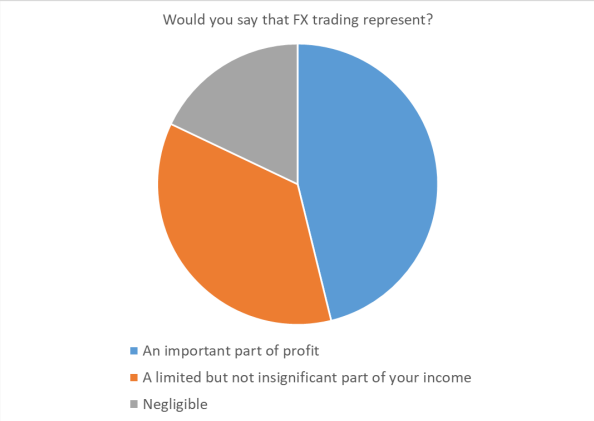

What is your institution's current expectation for the USD/COP exchange rate?
Number of responses
30
25
20
15
10
5
0
3500-4000
4000-4500
4500-5000
By end 2023
By mid 2024

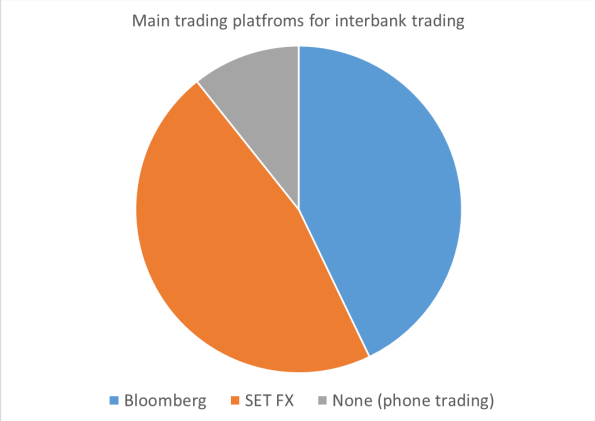
Annex II. Bank Survey Results

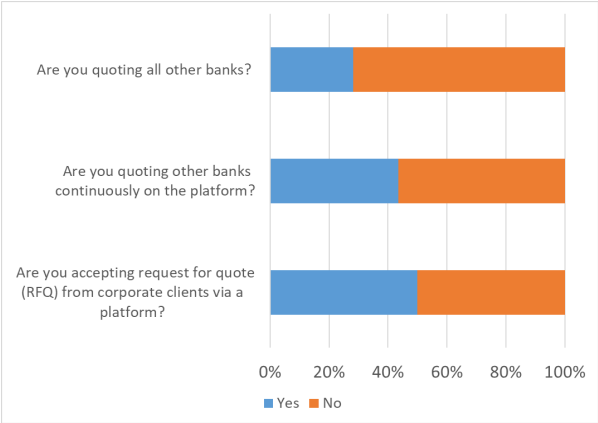
Sample size: 39 banks responded to the survey.

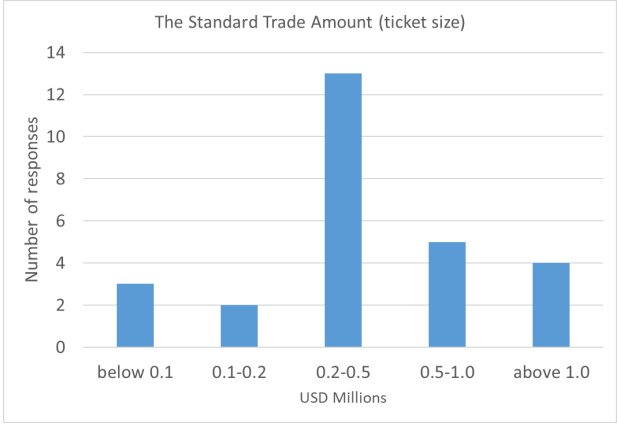


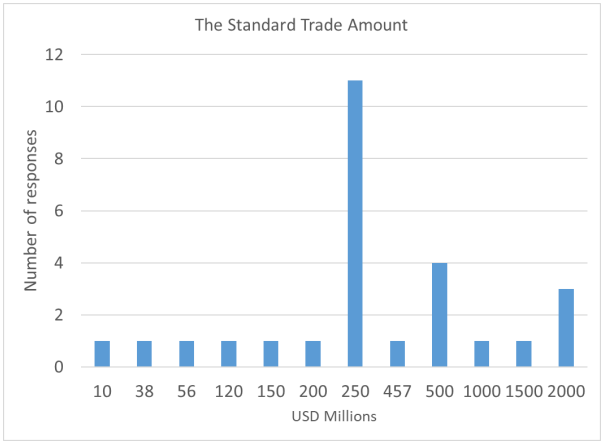


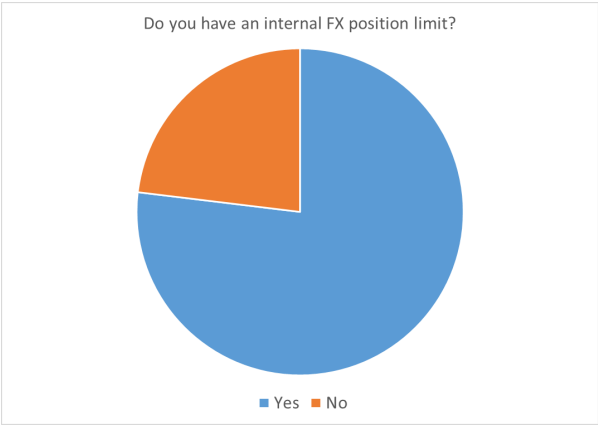


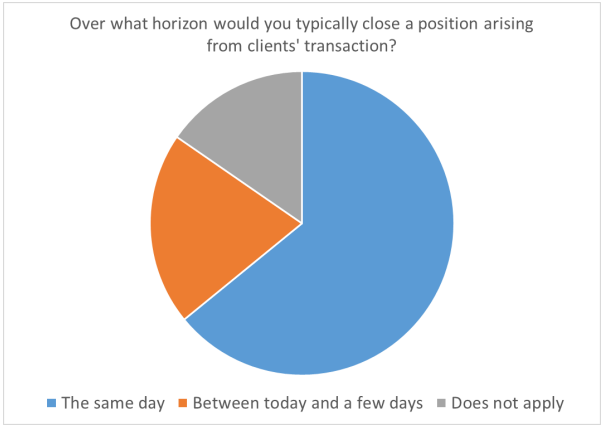


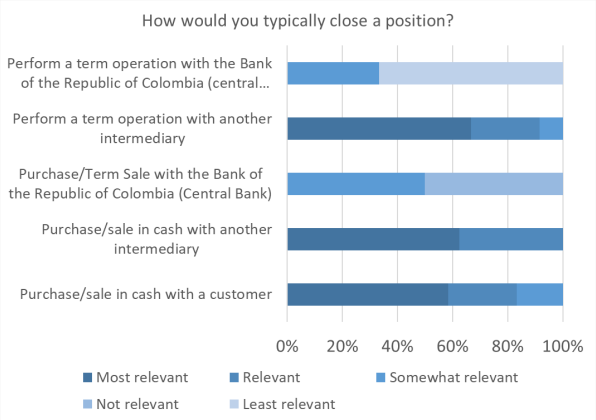

Are you quoting all other banks?
Are you quoting other banks continuously on the platform?
Are you accepting request for quote (RFQ) from corporate clients via a platform?
0%
20%
40%
60%
80%
100%
Yes
No

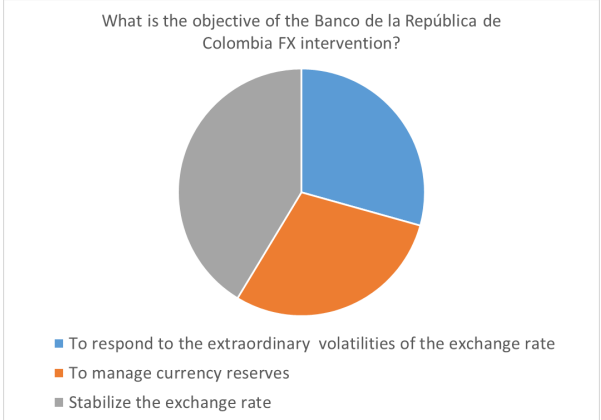

The Standard Trade Amount (ticket size)
Number of responses
14
12
10
8
6
4
2
0
below 0.1
0.1-0.2
0.2-0.5
0.5-1.0
above 1.0
USD Millions

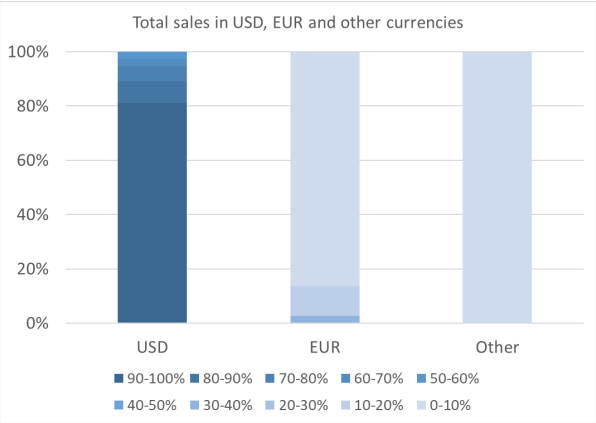

The Standard Trade Amount
Number of responses
12
10
8
6
4
2
0
10
38
56
120
150
200
250
457
500
1000
1500
2000
USD Millions

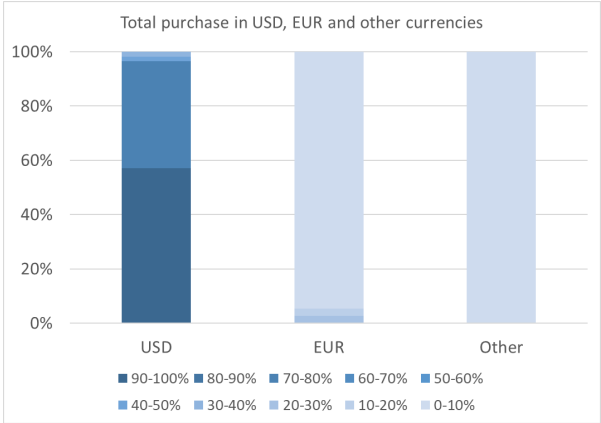

Do you have an internal FX position limit?
Yes
No

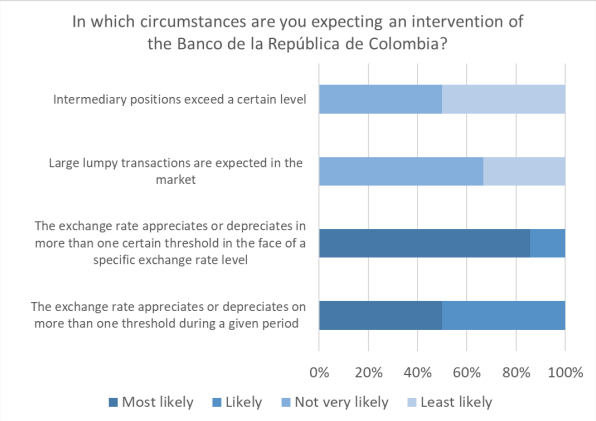

Over what horizon would you typically close a position arising from clients' transaction?
The same day
Between today and a few days
Does not apply

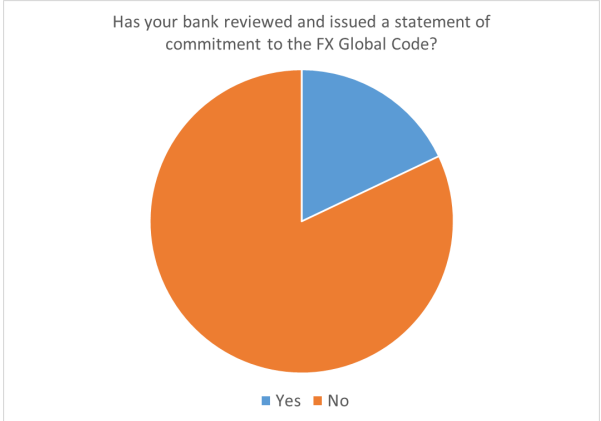

How would you typically close a position?
Perform a term operation with the Bank of the Republic of Colombia (central...
Perform a term operation with another intermediary
Purchase/Term Sale with the Bank of the Republic of Colombia (Central Bank)
Purchase/sale in cash with another intermediary
Purchase/sale in cash with a customer
0%
20%
40%
60%
80%
100%
Most relevant
Relevant
Somewhat relevant
Not relevant
Least relevant

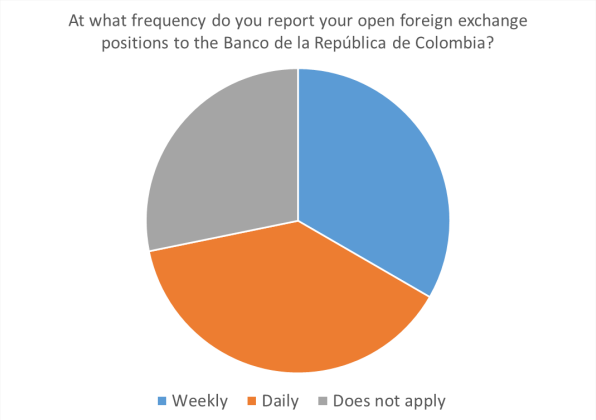

What is the objective of the Banco de la República de Colombia FX intervention?
To respond to the extraordinary volatilities of the exchange rate
To manage currency reserves
Stabilize the exchange rate

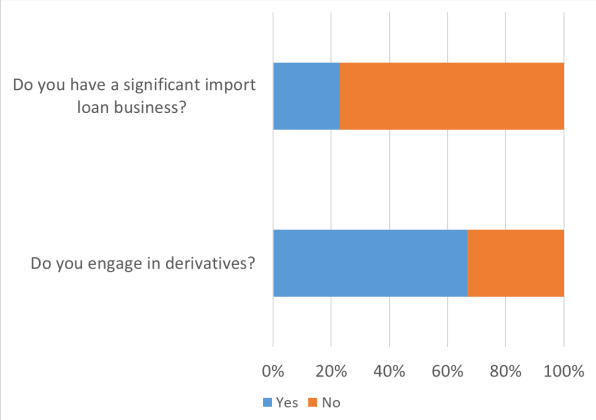

Total sales in USD, EUR and other currencies
100%
80%
60%
40%
20%
0%
USD
EUR
Other
90-100%
80-90%
70-80%
60-70%
50-60%
40-50%
30-40%
20-30%
10-20%
0-10%

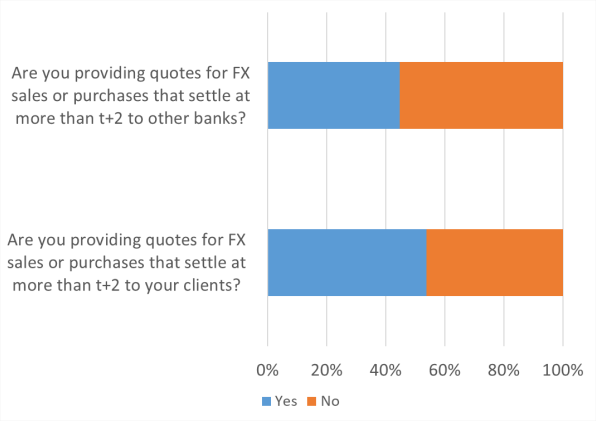

Total purchase in USD, EUR and other currencies
100%
80%
60%
40%
20%
0%
USD
EUR
Other
90-100%
80-90%
70-80%
60-70%
50-60%
40-50%
30-40%
20-30%
10-20%
0-10%


In which circumstances are you expecting an intervention of the Banco de la República de Colombia?
Intermediary positions exceed a certain level
Large lumpy transactions are expected in the market
The exchange rate appreciates or depreciates in more than one certain threshold in the face of a specific exchange rate level
The exchange rate appreciates or depreciates on more than one threshold during a given period
0%
20%
40%
60%
80%
100%
Most likely
Likely
Not very likely
Least likely

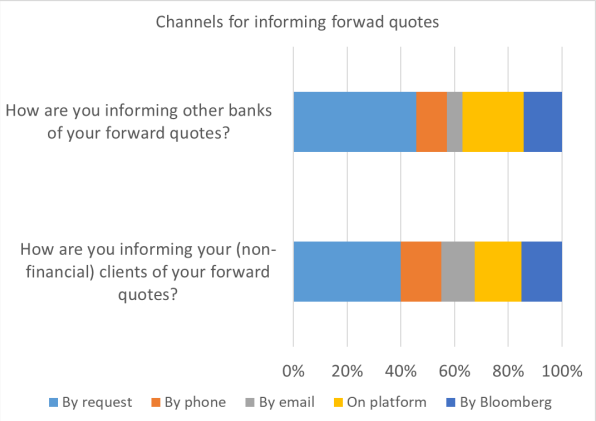

Has your bank reviewed and issued a statement of commitment to the FX Global Code?
Yes
No

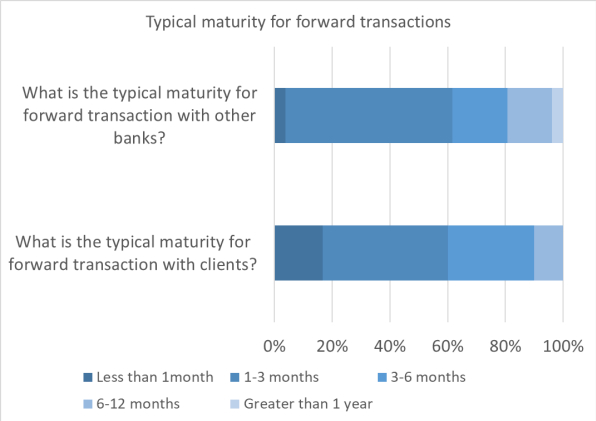

At what frequency do you report your open foreign exchange positions to the Banco de la República de Colombia?
Weekly
Daily
Does not apply

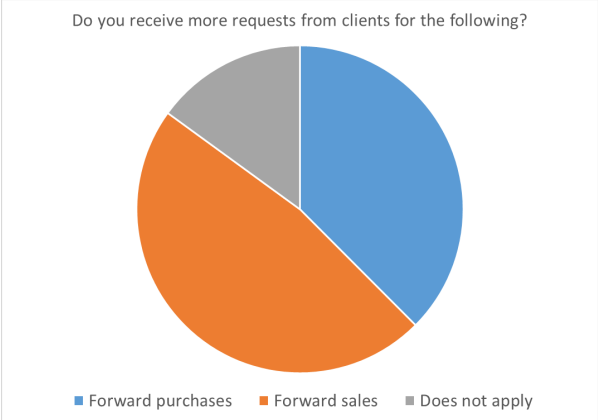

Do you have a significant import loan business?
Do you engage in derivatives?
0%
20%
40%
60%
80%
100%
Yes
No

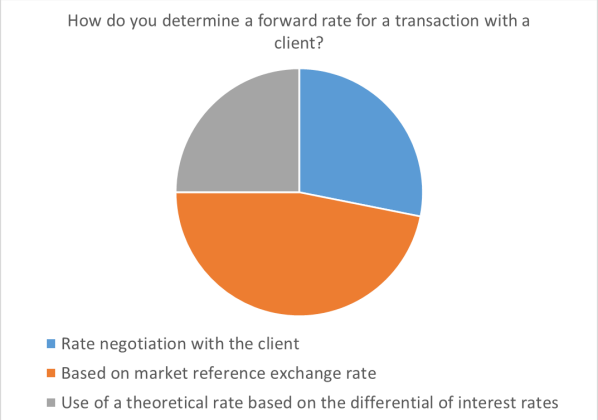

Are you providing quotes for FX sales or purchases that settle at more than t+2 to other banks?
Are you providing quotes for FX sales or purchases that settle at more than t+2 to your clients?
0%
20%
40%
60%
80%
100%
Yes
No

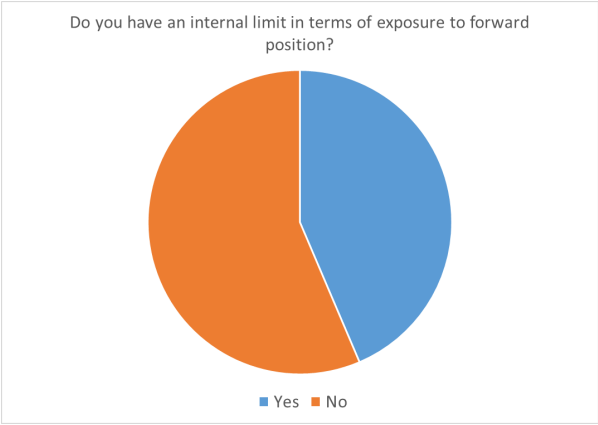

What is the longest time horizon at which you would quote a forward?
One month
Three months
Six months
12 months or more

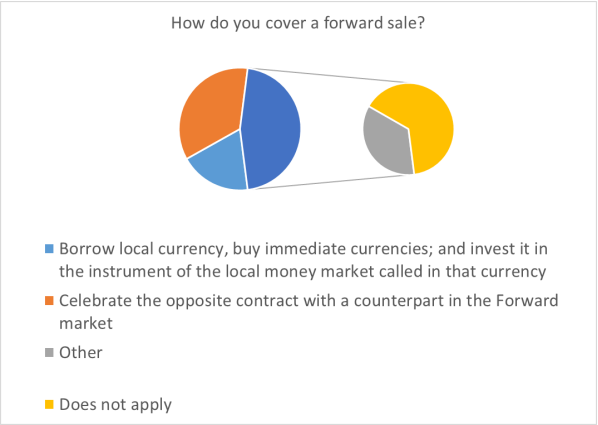

Channels for informing forwad quotes
How are you informing other banks of your forward quotes?
How are you informing your (non-financial) clients of your forward quotes?
0%
20%
40%
60%
80%
100%
By request
By phone
By email
On platform
By Bloomberg

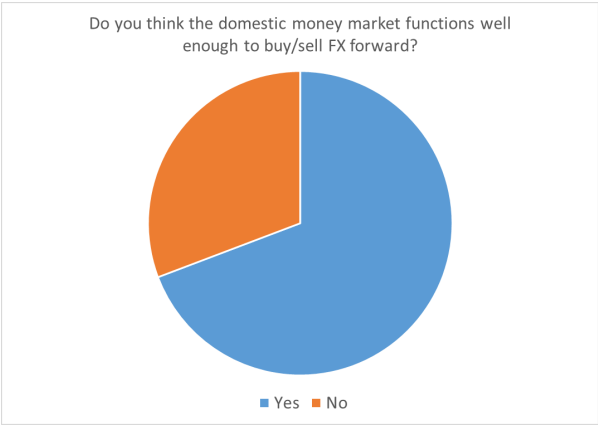

Typical maturity for forward transactions
What is the typical maturity for forward transaction with other banks?
What is the typical maturity for forward transaction with clients?
0%
20%
40%
60%
80%
100%
Less than 1month
1-3 months
3-6 months
6-12 months
Greater than 1 year

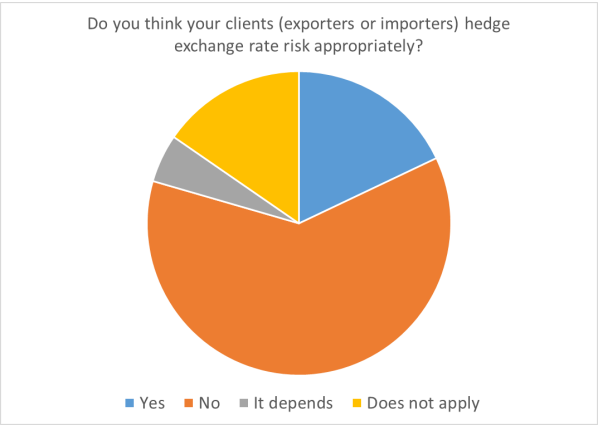

Do you receive more requests from clients for the following?
Forward purchases
Forward sales
Does not apply

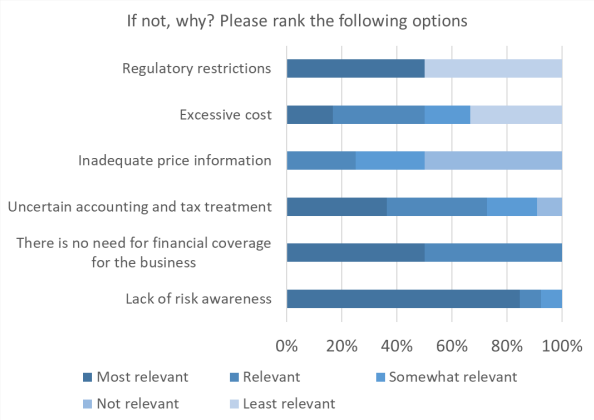

How do you determine a forward rate for a transaction with a client?
Rate negotiation with the client
Based on market reference exchange rate
Use of a theoretical rate based on the differential of interest rates

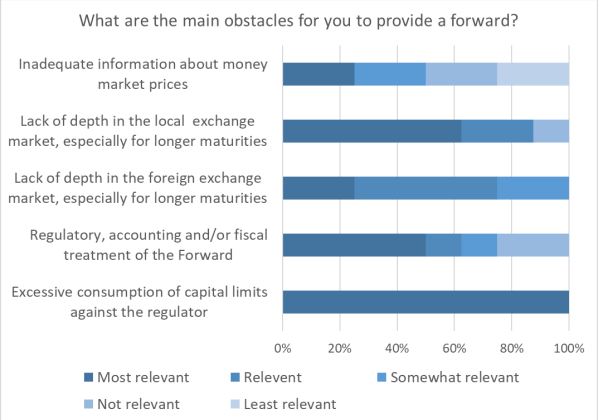

Do you have an internal limit in terms of exposure to forward position?
Yes
No

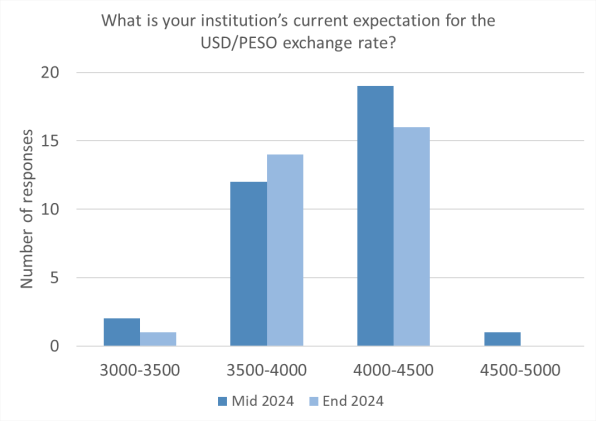

How do you cover a forward sale?
Borrow local currency, buy immediate currencies; and invest it in the instrument of the local money market called in that currency
Celebrate the opposite contract with a counterpart in the Forward market
Other
Does not apply


Do you think the domestic money market functions well enough to buy/sell FX forward?
Yes
No


Do you think your clients (exporters or importers) hedge exchange rate risk appropriately?
Yes
No
It depends
Does not apply


If not, why? Please rank the following options
Regulatory restrictions
Excessive cost
Inadequate price information
Uncertain accounting and tax treatment
There is no need for financial coverage for the business
Lack of risk awareness
0%
20%
40%
60%
80%
100%
Most relevant
Relevant
Somewhat relevant
Not relevant
Least relevant


What are the main obstacles for you to provide a forward?
Inadequate information about money market prices
Lack of depth in the local exchange market, especially for longer maturities
Lack of depth in the foreign exchange market, especially for longer maturities
Regulatory, accounting and/or fiscal treatment of the Forward
Excessive consumption of capital limits against the regulator
0%
20%
40%
60%
80%
100%
Most relevant
Relevent
Somewhat relevant
Not relevant
Least relevant


What is your institution's current expectation for the USD/PESO exchange rate?
Number of responses
20
15
10
5
0
3000-3500
3500-4000
4000-4500
4500-5000
Mid 2024
End 2024

Annex III. Country Case Studies on Liberalization

South Korea

The liberalization of Korea's FX and capital markets came together with the evolution of the FX regime. Before 1980, Korea sustained a fixed exchange rate regime, pegged to the USD, which turned to a multi-basket pegged regime in 1981 that lasted until February 1990. A market average exchange rate was put in place from March 1990 until December 1997, which evolved into a free-floating regime in 1997.

The development of the Korean financial market and the financial account liberalization was gradual until the 1997 Asian Financial Crisis and sped up in the post-crisis. The access to the Korean stock market in 1984 and a systematic opening of the stock market since January 1992 were key. After the crisis, the liberalization accelerated under the IMF Stand-By Arrangement to attract foreign capital, with measures ranging from the lifting of ceilings on portfolio investments and opening the bond market, where the introduction of Korea Treasury Bonds, with terms of 10-, 20-, 30-, and 50-years, and a primary dealer system implemented in 1999, played a key role. Portfolio inflows had a substantial impact, mainly from investment from public funds.

The liberalization of the Korean economy before the 1997 Asian Financial Crisis prioritized easing controls on short-term capital flows over long-term ones, which contributed to the buildup of economic vulnerabilities and exacerbated the crisis. Short-term flows are typically more volatile and prone to capital flow reversal and financial stability risks in case of worsening global or domestic economic conditions. The premature liberalization of such flows, aimed at attracting investments, played a role in making South Korea more vulnerable to external shocks and heightened the severity of the 1997 crisis.

As an important precondition for new and sustainable round of liberalization, Korea implemented core institutional developments with a significant positive impact on the Korean FX market. The revision of the regulatory framework included the Foreign Exchange Transactions Act and the Foreign Investment Promotion Act, both in 1998, which incorporated the refinement and streamlining of FX market operations, including possibilities of ex-post reporting. The Bank of Korea gained more independence and adopted inflation targeting regime, financial where enhanced and included the prudential regulation perspective. FDI regulations were harmonized with the OECD standards and individual foreign currency transactions, deposit abroad and nonresident's deposit in Korea were liberalized by 2001. In the next step, capital outflows were liberalized, and Korean authorities implemented policies to promote capital outflows, such as the Overseas Investment Activation Plan, in 2005, and other measures that encouraged Korean investments overseas, including direct investment.

More recently, the Korean authorities have announced further measures intended to help deepen the internationalization of the Korean, with the goal of enhancing efficiency and stability, aiming to be fully implemented until the second semester of 2024. It considers further ease of the FX procedures and the main announced measures are: (i) KRW overdraft to be allowed to avoid settlement failures such as those arising from time difference, interbank transactions procedures and errors; (ii) extension of foreign investors' usability of KRW cash account using ICSDs; (iii) streamlining of FX transactions in line with omnibus accounts practice; (iv) strengthening communication with foreign investors to clarify uncertainties surrounding FX trading and KRW transactions; (v) opening up the onshore interbank FX market to foreign financial institutions; (vi) extending onshore FX trading hours; (vii) developing market infrastructure to be in line with global FX markets; (viii) Establish a cooperative relationship between foreign financial (headquartered abroad but full operation in the Korean interbank

market and local financial institutions); and (ix) adjusting regulatory framework to incorporate solid external soundness (macro-prudential policy, safeguards, supervision.

Brazil

Brazil experienced many episodes of FX control over the last century as a legacy of serious disequilibrium in the balance of payments. Different instruments and arrangements over time ranged essentially from allotment, advance deposit requirements on imports, repatriation requirements on exports, previous approval by the central bank and limits on FX operations, and the development of electronic systems dedicated to collect data applied to capital control.

One of the very first steps on the liberalization path in Brazil was the implementation of a dual exchange rate system. In 1989, a new segment of the FX market was effectively introduced, the "Mercado Flutuante." This segment was primarily aimed at international travel operations, current transfers, and export and import of services. It offered significantly expanded limits and operated with its own net open positions. Although the new segment effectively absorbed FX liquidity from the public, it eventually led to notable market interferences and distortions. The other existing market segment, referred to as "Segmento Livre," continued to operate under the usual regulations, restrictions, and requirements, including its own specific net open positions. There were limits for operations, red tape requirements, including mandatory previous authorization of the BCB for most of the FX operations.

Macroeconomic stabilization, expanding international transactions (exports, imports, and investments), the new structure of the FX market, and the development of regulatory and supervisory policies provided the foundations for a new round of liberalization. In the aftermath of the Asian and Russian crises, in 1997 and 1998, which caused surges of capital outflow from Brazil with direct impact on the international reserves, the central bank had to refrain from intervening in the market, which led to the adoption of the free-floating regime. After the crisis, the process of quick replenishment of international reserves and the consolidation of the global insertion of the Brazilian economy allowed for speeding up the liberalization process, which consequently led to the decision to unify the FX market (“Segmento Livre” and “Segmento Flutuante”) in 2005, when it also removed considerable exchange control. The transition was smooth, with no disturbances or visible impact on the current market trend of the exchange rate. Additionally, it provided better FX market functioning, liquidity, and price formation. Among the restrictions removed were the lifting of limits on operations and the requirement of previous authorizations by the central bank. In the foreign trade field, fines applied to foreign trade operations were revised, and it was abolished the stringent exchange control on foreign trade operations, such as the end of cross crossing of customs and FX data at transaction level for all operations, and the end of the repatriation requirement of export revenues, which was implemented in two steps: in 2006, mandatory repatriation requirement of 70 percent of export revenues, and, in 2008, lift of the mandatory repatriation requirement.

The deepening of the development of the Brazilian economy and its broader international insertion, together with the increasing innovative environment and the remaining barriers that hindered the development of an efficient foreign market, led to a new round of liberalization. As important foundations, Brazil relied on the inflation target regime, the pursuit of fiscal discipline, exchange rate flexibility, market development, central bank autonomy, strong prudential policy, intensive and intrusive banking supervision, and an adequate banking resolution framework. The new regulation on capital movement and FX operations facilitated international trade, transfers of funds, and investment flows. It also improved conditions for new business models, focusing on market efficiency, competition, transparency, and financial inclusion. It has removed some remaining frictions and bureaucracy imposed more than 80 years ago that represented hindrances to economic activity, such as excess bureaucracy, and made relevant improvements by easing the process of gathering information, including the implementation of thresholds and ex-post provision of information.

Iceland

In response to Iceland's substantial balance sheet expansion and subsequent financial collapse, extensive capital controls were implemented. The expansion of Icelandic bank's balance sheet was notable, driven by significant interactions between debt and asset prices, which concealed rising leverage until the collapse of the banks and the currency. Exceptionally large capital inflows were crucial in driving the boom-bust cycle that culminated in one of the largest bankruptcies in history. In response to the crisis, comprehensive capital controls were implemented to prevent further collapse of the currency by curbing disorderly outflows, support more accommodative monetary policies, and create conditions conducive to balance sheet restructuring and enhancement of policy frameworks. Subsequently, these controls also played a role in managing the resolution of the assets of the failed banks.

Iceland launched its initial liberalization strategy in 2009, focusing on opening foreign direct investment and addressing balance of payments difficulties, including mitigation of potential outflows (CBI 2022). In 2015, the strategy was updated to include further liberalization measures. The economic crisis brought considerable challenges. It involved managing large carry trade inflows, resolving one of the world's most substantial bankruptcies in a small monetary system, and carefully assessing and addressing risks associated with liberalization. Implemented measures included enhancing Monetary Policy Committee transparency, supporting FX interventions, and establishing macroprudential policies and fiscal rules. The liberalization strategy also prioritized initially stabilizing the conditions of failed bank estates using backstop taxation. This was followed by an auction for offshore krona assets and the gradual removal of restrictions on residents.

Chile

Chile's journey through financial account liberalization began in 1974 with a phase of aggressive and unsuccessful round of privatizations and deregulations. While intended to develop the financial sector, this move led to significant vulnerabilities due to a lack of proper supervision and prudential regulation. The macroeconomic background presented low international interest rates, large capital inflows from oil-producing countries, and a fixed exchange rate policy. Financial vulnerabilities had arisen from high leverage in the corporate sector, currency mismatches in the non-tradable sector, and an overgrowth of credit. This precarious setup ultimately, together with spillover from international monetary policy shocks and a sudden stop in capital flows, resulted in an unsustainable exchange rate policy, which led to a financial crisis in the early 1980s.

The financial crisis was severe and ultimately headed toward the implementation of capital controls, while regulatory reforms focused on the stabilization of the financial system. A new banking act was issued in 1997 (the General Banking Law—GBL), complying with international best practices, such as adherence to Basel standards. The GBL provided the internationalization of domestic banks and allowed foreign subsidiaries from countries with the highest investment grade or with Memorandum of Understanding with Chilean supervisory authorities, while also admitting foreign branches in the country under Chilean supervision. The measures were instrumental in stabilizing the financial system but also led to slowed loan growth rates until the early 1990s. During this period, the role of pension funds grew significantly, becoming a crucial pillar of the financial system by channeling domestic savings into the banking system and fostering the development of a robust domestic capital market.

The next round of liberalization succeeded with the integration of Chile into the global economy. In September 1999, the country implemented a program to liberalize the economy, which was influenced partly by the Asian Financial Crisis and the Russian default. This policy shift allowed the peso to float freely and demanded a review of exchange rate risks in the banking sector. It not only aimed at enhancing the resilience of the financial system but also at ensuring its alignment with international

economic dynamics. The pension funds, a system created in the early 1980's, were a pillar of the financial system and, together with life insurance companies and FDI inflows, helped to deepen the fixed-income market. The liberalization was supported by an autonomous central bank, the development of the capital market, a floating exchange rate, an inflation targeting regime, and long-term fiscal policy, among others. The gradual approach, the implementation of reforms, and consideration of country-specific circumstances were crucial.

Annex IV. Colombian FXIs' Permitted Activities

FXI Category:	FXI group 1	FXI group 2	FXI group 3	FXI group 4	FXI group 5	FXI group 6
Type of financial institution:	Credit Establishments, National Development Financial Institution (FDN in Spanish) and Bancoldex	Credit Establishments, National Development Financial Institution (FDN in Spanish), and Bancoldex	Stockbrokers	Foreign Exchange Intermediation and Special Financial Services Companies (SICSFE in Spanish), and Companies Specialized in Deposits and Electronic Payments (SEDPE in spanish)	SEDPE	FINDETER, FINAGRO, ICETEX, ENTerritorio, and FNA
Equity requirement (PT) in 2024:	*PT >= COP 48.5 b*	*PT =< COP 48.5 b*	*PT => COP 34.4 b*	*PT=> COP 16 b*	*PT =< COP 16 b*	*N/A*
Conduct capital investments overseas	•	•	•	•	•	•
Execute COP-denominated derivative transactions	•	•	•	•	•	•
Professionally engage in currency derivative operations	•		must be compensated through counterparty central risk chamber			
Provide guarantees and sureties	•					•
Purchase and sell currencies channeled (mandatory and voluntary) through the foreign exchange market	•	•	•	•		
Execute currency transactions with the BR and FXIs, and compensation account balances	•	•	•	not with the BR		Only with FXI
Facilitate the sending or receiving of foreign currency payments and transfers, including conducting currency remittances to or from abroad	•	•	•	•	Send or receive foreign currency from non-mandatory channeled operations. Can buy/sell foreign currency for this purpose	
Accept foreign currency deposits from clients	•					
Accept demand deposits from non-resident client	•	•		Only for SEDPE, they can accept electronic deposits	electronic deposits	
Distribute and sell market prepaid debit cards, whether reloadable or not, and similar instruments issued by foreign financial institutions	•	•				
Obtain foreign currency financing from non-residents	•					•
Obtain legal tender-denominated financing from non-residents	•	•				•
Provide external credit	•					•

Source: Banco de la República.

Annex V. Brazil's Regulation on Cross-border Virtual Assets

The Brazilian experience in the regulation of cross-border virtual asset (VA) operations progressed since 2015, including Law 14,478, of 2022, and Decree 11,563, of 2023, which define Virtual Asset Service Providers (VASPs) and integrate VAs into financial and FX market regulations. The legal framework designated the Central Bank of Brazil (BCB) as the regulatory and supervisory authority, which launched a public consultation in 2024 to identify core elements to be considered under the BCB regulatory and supervisory policies. The law incorporated four important elements to be considered: specific and clear provisions about VASPs; definition of VASPs as financial institutions; criminalization of frauds committed with use of VAs; and amendment of AML/CFT law to explicitly include VASPs and VAs -related provisions. The public consultation collected relevant information about segregation of assets, including juristic impact; how to manage and mitigate risk; cross-border payment (risks of circumventing regulation, use in FDI, external credit and portfolio operations); derivatives with the use of VA; licensing procedures for VASPs; eligibility criteria for the offering of VAs; sound custody and access to custody provided abroad; safe partnership and correspondent relationships; compliance of AML-CFT measures; governance (responsibility and risk of each business model); sound price formation; mitigation of risks related to cybersecurity; consumer protection elements; and transition rules for those VASPs already in operation. The Brazilian experience highlighted significant issues involving regulation and supervision of VAs and VASPs, such as the need of regulatory policy to be as dynamic as the market, the core role of coordination among regulatory bodies and countries, the need to balance gathering of data and streamlined market operations, the integration of VA regulation with FX market and capital flow regulations, and understanding the role and potential risks of stablecoins, particularly considering the strong growth in their use. The proper regulatory and supervisory treatment of all these elements and challenges is key to the continued efficiency of foreign exchange and monetary policies, including the effectiveness of capital flow management measures.

Regulatory Framework:

- Three-legged: Constitution + Law + Presidential Decree + BCB by-law.

Progressive regulatory development since 2015, many technical consultations by the Congress, involving regulatory and supervisory authorities and the market. Key Legislation:

- Various bills of law introduced from 2015 to 2021 to refine and expand regulations.
- Law 14478, issued in December 2022: on the Virtual Asset Service Provider.
- Presidential Decree 11563, enacted June 2023: regulates the Law, central bank as the main regulatory and supervisory authority.

Public consultation from December 2023 to January 2024.

Law and Presidential Decree Details:

- Virtual Asset Service Providers (VASPs) treated as financial institutions.
- Introduction of stringent measures for fraud involving virtual assets.
- Amendments to AML/CFT law.

- Enhanced penalties for violations involving virtual assets.

VASP Regulation under Decree 11563, of 2023:

- Licensing requirements and operational guidelines for VASPs.
- Management and supervisory mandates.
- Specific provisions for the sanctioning of non-compliance.

FX Market and Capital Flows:

- Definition of activities and regulations specific to VASPs.
- Integration of virtual assets into existing financial systems.

Public Consultation Insights:

- Focus on asset segregation, risk management, cross-border payments, derivatives, licensing, eligible VA to be accepted under regulation, custody, partnership of VASPs, AML-CFT, governance and conduct, price formation, cybersecurity, consumer protection and transition rule.

Key Elements:

- Interconnection of different regulatory policies and regulatory bodies: macro and financial stability, financial intermediation, AML/CFT, financial crimes, consumer protection, fiscal and tax policies, etc.
- Adequate regulation.
- Stablecoins.
- Gathering data.
- Cross-border provision of financial services.
- Mapping the diverse use of VA (business models).

Statistics:

- Growth trends since 2017 and integration into Brazil's Balance of Payments.
- Guidance from the IMF on treating crypto assets in macroeconomic statistics.
- Steep growth on crypto imports.
- High prevalence of stablecoins.

Final Remarks:

- Emphasis on the need for dynamic regulatory policies to keep pace with market changes.
- The importance of domestic and international coordination among regulatory bodies.
- The significant role of stablecoins, especially those denominated in foreign currencies.
- Data gathering is essential.

Annex VI. VAR Model of Hedging Dynamics in the FX Market

Methodology

We aim to investigate the impact of Foreign Exchange (FX) volatility on market indicators and market participants through the construction of two VAR models using daily data from January 04, 2021, to October 31, 2023.

The first model is designed to examine the effects of FX volatility on market indicators such as:

$$Y_t = \alpha + \sum_{i=1}^{p} \beta_i Y_{t-i} + \gamma_1 FX\ Volatility_t + \epsilon_t$$

Where:

- Y_t represents the vector of market indicators (bid-ask spread in the spot market, market depth at 10 maturities, and liquidity indicators, specifically trading volumes with FXI-other in the spot market and FXI-FXI in the spot market).
- α is the intercept.
- β_i are coefficients for lagged values of Y_t.
- γ_1 represents the coefficient measuring the impact of FX volatility on market indicators.
- ϵ_t is the error term.

FX volatility is measured using either the variance of the FX rate daily return or GARCH (Generalized Autoregressive Conditional Heteroskedasticity) FX volatility.

Variables	Definition
bid_ask_spot	Bid-ask spread in the spot market.
spot_depth_at_10	Market depth at 10 maturities.
fxi_other_spot	Trading volumes with FXI-other in the spot market.
fxi_fxi_spot	Trading volumes with FXI-FXI in the spot market.
fx_vol_sqr	Variance of the FX rate daily return.
garch_fx_vol	GARCH FX volatility.

The second model enables an analysis of the impact of FX volatility on the long and short positions of market participants involved in the forward swap market using the following equation:

$$P_t = \alpha + \sum_{i=1}^{p} \beta_i \, P_{t-i} + \gamma_2 \, FX\,Volatility_t + \epsilon_t$$

Where:

- P_t represents the vector of positions (Others-FXI, Total pension funds, and Total offshore,
- α is the intercept,
- β_i are coefficients for lagged values of P_t,
- γ_2 represents the coefficient measuring the impact of FX volatility on market participants,
- ϵ_t is the error term.

FX volatility is measured using either the FX rate or the FX rate daily return such as:

$$FX\ rate\ daily\ return = \log\left[\frac{FX\ rate_{t-1}}{FX\ rate_t}\right]$$

Variables	Definition
diff_others_fxi_net_fwdswp	Long/short term position of others-FXI.
diff_total_pension_funds	Long/short term position of total pension funds.
diff_total_offshore	Long/short term position of total offshore.
diff_fx_rate	FX rate.
fx_rate_daily_return	FX rate daily return.

Results

Model 1. VAR Estimates

Vector Autoregression Estimates
Date: 05/01/24 Time: 19:38
Sample (adjusted): 1/07/2021 10/31/2023
Included observations: 667 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	BID_ASK_SPOT	FX_VOL_SQR	FXI_FXI_SPOT	FXI_OTHER_SPOT	GARCH_FX_VOL	SPOT_DEPTH_AT_10
BID_ASK_SPOT(-1)	0.538204	0.000363	-727.1978	35091.46	15.87553	-19220671
	(0.15330)	(0.00023)	(239719.)	(29175.1)	(16.8142)	(4808121)
	[3.51089]	[1.61151]	[-0.00303]	[1.20279]	[0.94417]	[-3.99754]
BID_ASK_SPOT(-2)	0.079467	1.14E-05	258045.0	37717.23	23.50753	4152351.
	(0.15217)	(0.00022)	(237963.)	(28961.4)	(16.6910)	(4772902)

	[0.52222]	[0.05080]	[1.08439]	[1.30233]	[1.40839]	[0.86998]
FX_VOL_SQR(-1)	-93.72943	0.121133	-45734083	-14610589	-8779.766	9.82E+09
	(96.1866)	(0.14147)	(1.5E+08)	(1.8E+07)	(10550.2)	(3.0E+09)
	[-0.97445]	[0.85625]	[-0.30406]	[-0.79812]	[-0.83219]	[3.25589]
FX_VOL_SQR(-2)	5.436907	0.068918	-1.30E+08	-27516678	-7989.072	-1.64E+09
	(95.8722)	(0.14101)	(1.5E+08)	(1.8E+07)	(10515.7)	(3.0E+09)
	[0.05671]	[0.48876]	[-0.86720]	[-1.50807]	[-0.75973]	[-0.54375]
FXI_FXI_SPOT(-1)	1.19E-07	1.36E-10	0.386765	-0.000955	8.48E-06	-1.663102
	(2.6E-08)	(3.8E-11)	(0.04061)	(0.00494)	(2.8E-06)	(0.81459)
	[4.56875]	[3.57192]	[9.52314]	[-0.19326]	[2.97529]	[-2.04164]
FXI_FXI_SPOT(-2)	-8.16E-08	-1.19E-10	0.180143	0.005190	1.61E-05	0.712470
	(2.7E-08)	(4.0E-11)	(0.04215)	(0.00513)	(3.0E-06)	(0.84547)
	[-3.02570]	[-3.01110]	[4.27360]	[1.01169]	[5.44648]	[0.84270]
FXI_OTHER_SPOT(-1)	3.71E-07	5.93E-10	-0.082601	0.038765	-9.30E-06	-3.450068
	(2.1E-07)	(3.0E-10)	(0.32308)	(0.03932)	(2.3E-05)	(6.48009)
	[1.79642]	[1.95005]	[-0.25567]	[0.98587]	[-0.41055]	[-0.53241]
FXI_OTHER_SPOT(-2)	-1.10E-07	-1.89E-10	0.229069	0.060071	2.54E-05	4.042410
	(2.1E-07)	(3.0E-10)	(0.32240)	(0.03924)	(2.3E-05)	(6.46647)
	[-0.53419]	[-0.62360]	[0.71051]	[1.53094]	[1.12351]	[0.62513]
GARCH_FX_VOL(-1)	0.000707	9.53E-07	-92.25209	-48.37146	0.781331	-19791.60
	(0.00034)	(5.1E-07)	(538.414)	(65.5280)	(0.03777)	(10799.1)
	[2.05225]	[1.88221]	[-0.17134]	[-0.73818]	[20.6893]	[-1.83270]
GARCH_FX_VOL(-2)	-9.51E-05	-2.20E-07	96.68401	3.496376	0.080031	2992.542
	(0.00033)	(4.9E-07)	(521.263)	(63.4406)	(0.03656)	(10455.1)
	[-0.28517]	[-0.44772]	[0.18548]	[0.05511]	[2.18891]	[0.28623]
SPOT_DEPTH_AT_10(-1)	-3.14E-09	-3.77E-12	0.003948	0.000348	-1.15E-07	0.304810
	(1.6E-09)	(2.4E-12)	(0.00250)	(0.00030)	(1.8E-07)	(0.05013)
	[-1.96193]	[-1.60235]	[1.57971]	[1.14357]	[-0.65818]	[6.08061]
SPOT_DEPTH_AT_10(-2)	-1.31E-09	-1.08E-12	-0.000716	0.000143	-5.25E-07	0.243830
	(1.6E-09)	(2.3E-12)	(0.00247)	(0.00030)	(1.7E-07)	(0.04958)
	[-0.82644]	[-0.46597]	[-0.28952]	[0.47493]	[-3.02707]	[4.91783]
C	0.000190	1.16E-08	196.9664	0.454237	-0.007812	15111.64
	(8.8E-05)	(1.3E-07)	(137.346)	(16.7157)	(0.00963)	(2754.78)
	[2.16409]	[0.08993]	[1.43409]	[0.02717]	[-0.81091]	[5.48560]
R-squared	0.480624	0.381231	0.268420	0.020645	0.914182	0.525755
Adj. R-squared	0.471094	0.369877	0.254997	0.002675	0.912607	0.517053
Sum sq. resids	9.14E-06	1.98E-11	22355468	331134.4	0.109984	8.99E+09
S.E. equation	0.000118	1.74E-07	184.8856	22.50159	0.012968	3708.309
F-statistic	50.43358	33.57811	19.99630	1.148846	580.5623	60.41955
Log likelihood	5091.728	9441.874	-4421.432	-3016.630	1958.422	-6421.495
Akaike AIC	-15.22857	-28.27249	13.29665	9.084347	-5.833350	19.29384
Schwarz SC	-15.14081	-28.18473	13.38441	9.172108	-5.745589	19.38160
Mean dependent	0.000567	3.48E-07	770.6919	34.61130	0.136756	14222.58
S.D. dependent	0.000163	2.19E-07	214.2022	22.53175	0.043867	5336.130

Determinant resid covariance (dof adj.)	7.80E-13
Determinant resid covariance	6.93E-13
Log likelihood	3658.682
Akaike information criterion	-10.73668
Schwarz criterion	-10.21011
Number of coefficients	78

Model 2. VAR Estimates

Vector Autoregression Estimates
Date: 05/01/24 Time: 20:02
Sample (adjusted): 1/07/2021 10/31/2023
Included observations: 670 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	DIFF_FX_RATE	DIFF_OTHERS_FXI_NET_FWDSWP	DIFF_TOTAL_OFFSHORE	DIFF_TOTAL_PENSION_FUNDS	FX_RATE_DAILY_RETURN
DIFF_FX_RATE(-1)	1.608918	-0.000618	0.002411	-0.001799	0.000309
	(0.41029)	(0.00114)	(0.00246)	(0.00153)	(9.7E-05)
	[3.92145]	[-0.54029]	[0.97863]	[-1.17679]	[3.17121]
DIFF_FX_RATE(-2)	-1.005310	0.000914	-0.001233	0.001697	-0.000206
	(0.40810)	(0.00114)	(0.00245)	(0.00152)	(9.7E-05)
	[-2.46340]	[0.80374]	[-0.50317]	[1.11587]	[-2.12906]
DIFF_OTHERS_FXI_NET_FWDSWP(-1)	-21.18158	0.093093	-0.286778	0.057027	-0.005094
	(15.9272)	(0.04438)	(0.09565)	(0.05935)	(0.00378)
	[-1.32990]	[2.09761]	[-2.99820]	[0.96092]	[-1.34676]
DIFF_OTHERS_FXI_NET_FWDSWP(-2)	19.23266	0.096135	-0.135528	0.051386	0.004825
	(15.9225)	(0.04437)	(0.09562)	(0.05933)	(0.00378)
	[1.20789]	[2.16680]	[-1.41733]	[0.86612]	[1.27597]
DIFF_TOTAL_OFFSHORE(-1)	21.72531	-0.060753	0.194005	-0.028732	0.005169
	(7.32139)	(0.02040)	(0.04397)	(0.02728)	(0.00174)
	[2.96737]	[-2.97796]	[4.41239]	[-1.05322]	[2.97281]
DIFF_TOTAL_OFFSHORE(-2)	-6.907373	-0.024348	0.128693	0.020780	-0.001384
	(7.29152)	(0.02032)	(0.04379)	(0.02717)	(0.00173)
	[-0.94732]	[-1.19836]	[2.93894]	[0.76485]	[-0.79944]
DIFF_TOTAL_PENSION_FUNDS(-1)	-3.370724	-0.058941	0.197166	-0.134299	-0.000375
	(10.6153)	(0.02958)	(0.06375)	(0.03955)	(0.00252)
	[-0.31753]	[-1.99263]	[3.09281]	[-3.39535]	[-0.14870]
DIFF_TOTAL_PENSION_FUNDS(-2)	-0.044098	-0.005113	0.061988	0.068416	0.000387
	(10.6982)	(0.02981)	(0.06425)	(0.03986)	(0.00254)
	[-0.00412]	[-0.17151]	[0.96484]	[1.71630]	[0.15235]

FX_RATE_DAILY_RETUR N(-1)	-5925.263	1.000862	-9.049014	6.782689	-1.111103
	(1741.34)	(4.85218)	(10.4575)	(6.48837)	(0.41352)
	[-3.40271]	[0.20627]	[-0.86531]	[1.04536]	[-2.68696]
FX_RATE_DAILY_RETUR N(-2)	3886.972	-3.549661	5.220492	-8.006548	0.794092
	(1732.05)	(4.82630)	(10.4017)	(6.45377)	(0.41131)
	[2.24415]	[-0.73548]	[0.50189]	[-1.24060]	[1.93064]
C	0.842755	0.002257	0.007303	-0.005241	0.000228
	(1.43827)	(0.00401)	(0.00864)	(0.00536)	(0.00034)
	[0.58595]	[0.56307]	[0.84555]	[-0.97793]	[0.66708]
R-squared	0.104278	0.112700	0.149395	0.042235	0.093399
Adj. R-squared	0.090685	0.099235	0.136487	0.027702	0.079642
Sum sq. resids	902305.0	7.005864	32.54199	12.52738	0.050883
S.E. equation	37.00275	0.103107	0.222218	0.137876	0.008787
F-statistic	7.671900	8.370234	11.57426	2.906031	6.789067
Log likelihood	-3364.508	577.0888	62.60129	382.3971	2226.954
Akaike AIC	10.07614	-1.689817	-0.154034	-1.108648	-6.614789
Schwarz SC	10.15014	-1.615817	-0.080034	-1.034648	-6.540789
Mean dependent	1.024254	0.002053	0.007508	-0.005137	0.000272
S.D. dependent	38.80404	0.108638	0.239136	0.139826	0.009159

Determinant resid covariance (dof adj.)	5.85E-09
Determinant resid covariance	5.38E-09
Log likelihood	1624.929
Akaike information criterion	-4.686354
Schwarz criterion	-4.316354
Number of coefficients	55