A Road to Efficiency in Emerging Local Debt Markets: the Mexican Experience

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March 2022

Abstract

This paper describes a road to improve the efficiency of the Mexican debt market. It specifies the steps undertaken by Mexico between 2020-2022 to develop an efficient Overnight Indexed Swap (OIS) curve in local currency to allow national debt market participants to price a debt product in different time horizons. The Ministry of Finance is implementing a threefold strategy to accomplish this: i) consolidating the use of new Mexican Risk-Free Reference Rate (RFR), the Funding Interbank Equilibrium Interest Rate (TIIEF, for its acronym in Spanish) through the sovereign debt market; ii) incentivizing sustainable debt issuance in Mexico through a sustainable sovereign bond with TIIEF as the reference rate and, iii) issuing longer maturities in sovereign and sustainable debt market to robustness TIIEF curve and encourage the creation of derivative contracts. The expected outcome is that derivatives on the TIIEF will structure a sufficient number of nodes to obtain an efficient OIS curve in local currency.

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Acronyms

ARRC	Alternative Reference Rates Committee
AUM	Asset Under Management
BIS	Bank for International Settlements.
CONSAR	National Commission of the Savings System for the Retirement (*Comisión Nacional del Sistema de Ahorro para el Retiro*)
FED	The Federal Reserve of United States
FSB	Financial Stability Board
GAAP	Generaly Accepted Accounting Principles.
IAS	International Accounting Standards
IBOR	Interbank Offered Rate
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IRS	Interest Rate Swap
ISDA	International Swaps and Derivatives Association
LIBOR	London Interbank Offered Rate
MoF	Ministry of Finance and Public Credit
OIS	Overnight Indexed Swap
RFR	Risk Free Reference Rate
SDG	Sustainable Development Goals of the United Nations
SOFR	Secured Overnight Financing Rate
TIIE	Interbank Equilibrium Interest Rate (*Tasa de Interés Interbancario de Equilibrio*)
TIIEF	Funding Interbank Equilibrium Interest Rate (*Tasa de Interés Interbancario de Equilibrio de Fondeo*)

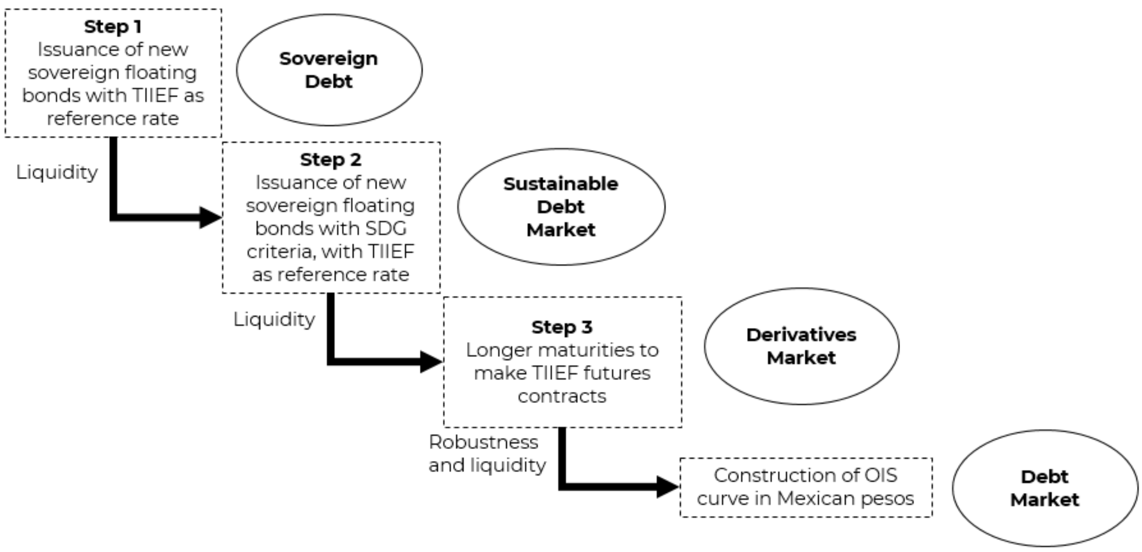
Introduction

The Ministry of Finance and Public Credit of Mexico (MoF) prioritizes the implementation of high international standards in its local and foreign debt market, following the latest trends, and driving innovations for all participants in the local fixed income market.

One key to achieve this goal is the development of an efficient Overnight Indexed Swap (OIS) curve in Mexican pesos. This curve will improve efficiency in the local debt market by providing a benchmark for financial operations, using the new Mexican Risk-Free Reference Rate (RFR) denominated as Funding Interbank Equilibrium Interest Rate (*Tasa de Interés Interbancaria de Equilibrio de Fondeo* , TIIEF).

The MoF has designed a road to an efficient debt market for public and private issuers, through a threefold strategy, involving the sovereign debt market, the sustainable debt market and the derivatives market. See Figure 1.

Figure 1. Road to a Efficient Debt Market



In summary, the threefold strategy consists in accelerating the adoption of RFR and strengthening the sustainable local market that will foster the national and international derivatives market based on the TIIEF, resulting in sufficient nodes to be able to construct an OIS curve in Mexican pesos.

The paper is organized as follows:

- **Section I: Transitioning to alternative Risk-Free Reference Rates in Mexico** summarizes Mexico's experience implementing their migration to Alternative Risk-Free Reference Rates (RFR) and the main inefficiency problems in the current local market.
- **Section II: Threefold Strategy, First Step: Issuance of New BONDES F** describes the creation of a new sovereign floating bond linked to the new local RFR and its adaptation on the local debt market.
- **Section III: Threefold Strategy, Second Step: Issuance of New Sustainable Sovereign Bonds in Local Currency** comprises relevant aspects of the local sustainable debt market. It analyze the key factors involving the decision making process for the appropriate format of the new bond, which would be essential to develop more than one market.
- **Section IV: Threefold Strategy, Third Step: Integrating Curves and Expanding Maturities** will include the following steps expected to achieve the efficiency goal.
- **Section V: Final Remarks** brings together all the involved elements of the threefold strategy and explains the MoF expectations for the future.

I. Transitioning to alternative Risk-Free Reference Rates in Mexico

In February 2013, the Financial Stability Board (FSB) took the mandate entrusted by G20 to review and reform major reference rates introducing the acronym RFR which refers to nearly risk-free reference rates. In July 2013, the International Organization of Securities Commissions (IOSCO) published a broader framework for the principles for financial benchmarks (Schrimpf & Sushko, 2019); these principles seek to homogenize international standards, resulting in the new RFR worldwide and supporting a successful benchmark transition. In response, Mexico started the adoption of this framework with the creation of its TIIEF.

The implementation of alternative RFRs is the starting point for the threefold strategy. Mexico is a pioneer among the emerging economies, in developing the TIIEF. The process to calculate and publish is explained below.

The new Mexican RFR: the TIIEF

In Mexico, the benchmark rate is the Interbank Equilibrium Interest Rate (TIIE), which is the equivalent of the LIBOR (Box 1). Since 1995, the TIIE has represented the rate at which banking institutions fund each other at different tenors (28, 90 and 180 days), and it is calculated as the weighted average of bank quotes every business day by the Mexican Central Bank.

One of the main problems with the use of TIIE is that it does not reflect the real daily cost of the interbank loan operations[5] of executed quotes as it only shows a survey of selected participants, allowing for potential market manipulation. In addition, there is no interbank loan market for tenors greater than one year for bank loans and derivative products

In contrast, the new TIIEF reflects the wholesale funding conditions in interbank transactions, by weighting the average of overnight loan operations collateralized in sovereign securities.

[5] Also known as Repo operations.

Inefficiencies exist in the balance sheets of local and foreign banks. On one hand, most of the banks are foreign and their balance sheets are mainly in USD. In order to buy sovereign bonds in local currency, they need overnight loans in Mexican pesos to exchange their dollars using the TIIE. On the other hand, since local banks do not have a Mexican peso discount curve for their daily operations, the common practice is to use the TIIE, which means they are discounting their cash flows in USD.

In January 2020, Mexican Central Bank, started to calculate and publish the TIIEF, employing the standards developed by the FSB, IOSCO and the BIS. This effort constituted the first milestone to transition to an efficient OIS curve based on RFR in Mexican pesos. Faced with these inefficiencies, the MoF decided to take advantage of the new TIIEF and designed a new market instrument tied to it.

Box 1. Migration to Alternative Risk-Free Reference Rates (RFR)

Internationally, the main reference rates in money markets are denominated as Interbank Offered Rate (IBOR). The London Interbank Offered Rate (LIBOR) was one of the most widely used at which large banks could borrow in the short term from one another on an unsecured basis. LIBOR originated in the late 1960s in the syndicated loan market, but in 1986, the British Bankers Association began to publish interbank offered rate quotes from a panel of banks, exemplifying the rates at which banks could borrow from other banks (Schrimpf & Sushko, 2019).

In June 2012, LIBOR came under public scrutiny due to controversy over individual panel bank submissions during the height of the financial crisis (Hou & Skeie, 2014). Therefore, in 2013, the Financial Stability Board (FSB) took the mandate, entrusted by G20 to review and reform major reference rates introducing the acronym RFR that refers to nearly risk-free reference rates. FSB began to monitor the efforts to implement proposals and convened a Market Participants Group to represent the private sector. Furthermore, in July 2013, the IOSCO published a broader framework on principles underlying benchmarks to use in the finance sector (Schrimpf & Sushko, 2019).

With an established framework, the next step was to achieve a smooth and swift transition from LIBOR to the alternative RFR. In the United States, the Alternative Reference Rates Committee (ARRC), established in 2014, is composed of a select group of private-market participants convened by the Federal Reserve Board and the New York Fed. Its main objective is to support a successful transition from USD LIBOR to a more robust reference rate, in this case, the Secured Overnight Financing Rate (SOFR). The SOFR rate was launched in the mid-2018 and its implementation in new derivative contracts is mandatory from December 31, 2021. The SOFR measures the cost of borrowing cash overnight, collateralized by Treasuries. The United States is using a 2-year implementation plan to achieve the liquidity necessary in the derivative markets for the creation of a term reference rate based on SOFR. In the first year of implementation, ARRC released new LIBOR fallback terms for use in new cash products.

Furthermore, the International Swaps and Derivatives Association (ISDA) published the new Interbank Offered Rates fallback terms such as the credit adjustment calculation (ISDA, 2022).

TIIEF Adoption: Derivatives Market at a Glance

The TIIEF is intended to develop a curve linked to sovereign risk. Since the sovereign has lower risk than interbank, the new TIIEF curve is expected to be below the TIIE curve. Currently, investors hedge Mexican sovereign debt positions with a TIIE Interest Rate Swap[6] (IRS), which generates distortions due to the fact that IRS contracts have an interbank risk implied in the OIS curve in contrast to the underlying asset, which is sovereign risk.[7]

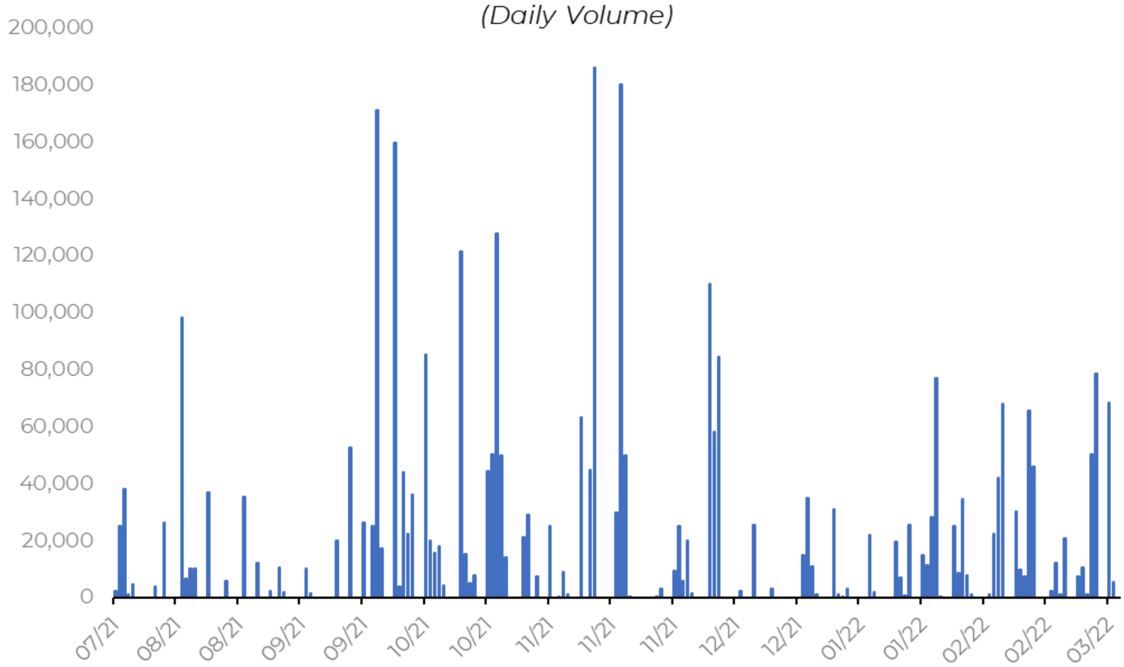
To illustrate this inefficiency, assume an investor buys a 10-year sovereign bond at a yield rate of 8.40 percent and seeks to hedge this position through a IRS contract. In the market, the 10-year TIIE IRS is at 8.60 percent. This transaction results in a difference of 20 basis points (interbank versus sovereign risk spread), given that historically the spread between the TIIEF and the TIIE is between 20-25 basis points. If there had been a TIIEF curve, the difference would be close to zero.

[6] An interest rate swap is a forward contract in which one stream of future interest payments is exchanged for another based on a specified principal amount. Interest rate swaps usually involve the exchange of a fixed interest rate for a floating rate, or vice versa.
[7] In addition, IRS contracts involve different currencies because most of the participants in the local debt market collaterlize in USD.

Volume is the main challenge since the difference in liquidity between the two rates has been the main impediment to speed up migration in an orderly manner, even though investors are aware of the benefits of the transition. At the moment, TIIEF futures remain significantly low, for instance, TIIEF futures contracts in the derivatives market have a daily average of approximately 4,000 contracts. In contrast, TIIE IRS contracts (Figure 1) have a daily average of nearly 40,000 (CME & MEXDER, 2022). The highest peak of TIIEF futures contracts was 300,000 in a single day, due to the hiking cycle of the local monetary policy. The second highest peak was the issuance of the new sovereign floating bond in October 2021, which will be explained in the next section. Since then, the volume has decreased significantly. To address low liquidity on the new TIIEF, the MoF began issuing new floater bonds with the TIIEF as reference.

Figure 1. Swaps contracts of TIIE28

(Daily Volume)



Source: MEXDER

II. Threefold Strategy, First Step: Issuance of New BONDES F

To encourage the adoption of TIIEF and enable the expansion of the OIS curve maturities in Mexican pesos, the MoF decided to cease the issuance of the previous sovereign floating bond[8] with TIIE (cost of interbank funding) as the reference rate and replaced with a new one with TIIEF. This new sovereign floating bond is the BONDES F and represents the first step in the threefold strategy.

A New Sovereign Bond: BONDES F

The BONDES F keeps most of the characteristics of the previous sovereign floating bond, except for the use of the TIIEF as the reference rate. The first BONDES F auction took place in October 2021 for the equivalent of USD$537 million and, since then, Mexico has auctioned maturities of 1, 2, 3, 5, 7, and 10 years.

At the same time, to acelerate migration between the past floating bonds to the new ones, the MoF has conducted exchange operations. The first transaction was carried out in December 2021 and consisted of an exchange between the previous floating bond with maturities between 2022 and 2026 and BONDES F with similar maturities. The result was a repurchase of approximately USD$8.4 billion and a placement with BONDES F of a similar amount. This transaction represented approximately four times the average weekly amount of an auction with all sovereign securities.

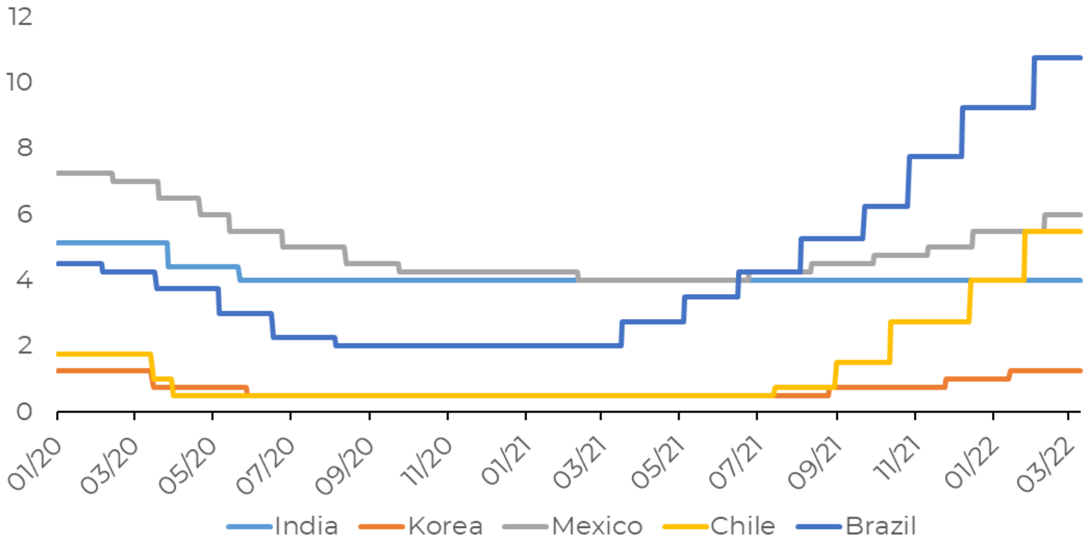
Box 2. The End of the Low-Interest Rates Environment

The global economy is facing a longer than expected period of high inflation. An assessment from the International Monetary Fund (IMF) considers that two of the main factors for such persistence stem from global value chain disruptions and the rise of energy prices, which caused the global economic growth forecast to reach 4.4 percent in 2022 (Gopinath, 2022).

[8] Issued in Mexican pesos.

At first, inflationary pressures were considered transitory, but current information indicates that these circumstances might persist longer than expected. Hence, central banks have entered a rate tightening cycle of their monetary policy, aimed at maintaining the inflation rate on their target ranges (Dodd, 2021). At the end of 2021, Canada and the United Kingdom have begun a restrictive period caused by inflation. While in the United States, the Federal Reserve (FED) began rate hikes in 2022 (*Federal Reserve Points to Interest Rate Hike Coming in March*, 2022).

Figure 2. Monetary Policy Rate in Selected Emerging Economies



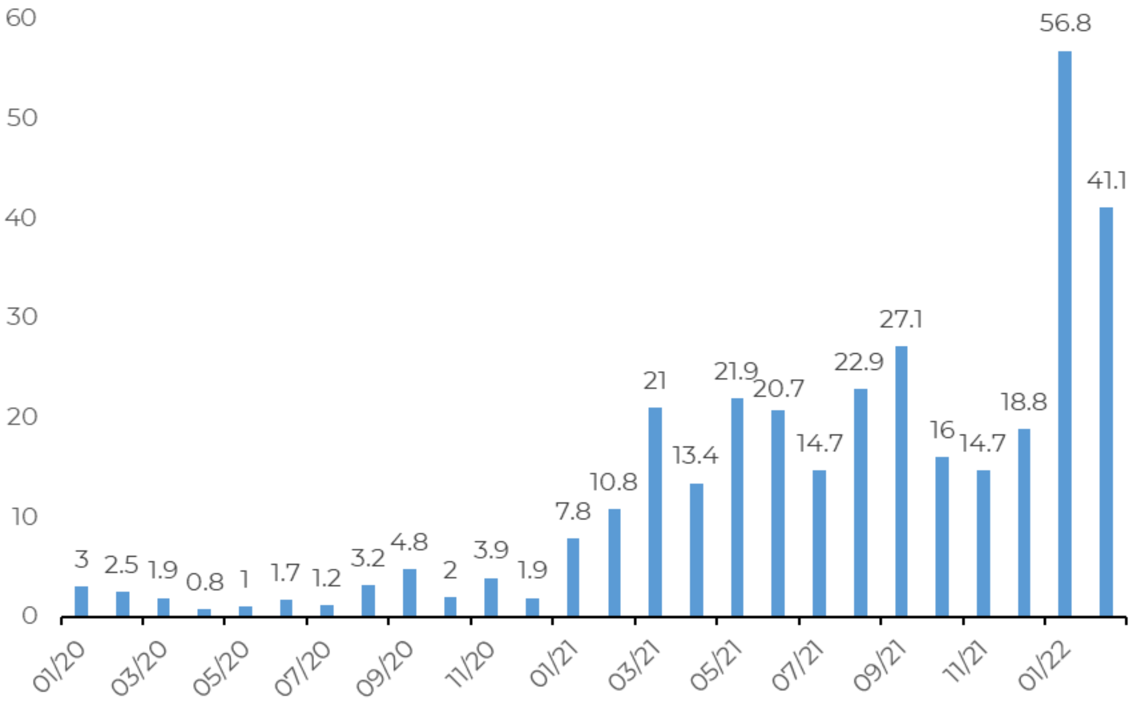
Source: Bloomberg

In emerging economies, the inflationary phenomenon has been more pernicious; consequently, central banks have had to speed up their hike cycle in mid-2021, as shown in Figure 2. Brazil is one of the countries that had a more reactive position, with hikes of 100 basis points in a single meeting (Capurro, 2021). The Mexican Central Bank began its cycle of hikes in August 2021, with hikes of 25 basis points, increasing it to 50 base points in the most recent decision (BANXICO, 2022).

The world is currently in an inflationary period (See Box 2) and central banks have entered a cycle of monetary policy hikes. This has led to an increase in the demand for floating bonds referenced to short-term interest rates (Figure 3). High demand is expected to continue as long as expectations for further rate hikes are sustained. In addition, in emerging economies, capital inflows and outflows builds intermittent demand between fixed and floating rate bonds depending on the monetary policy cycle. Therefore, high demand is enhanced for floating bonds in these economies due to investors's preferences in a new rate hiking cycle.

Figure 3. Issuance of Floating Rate Bonds

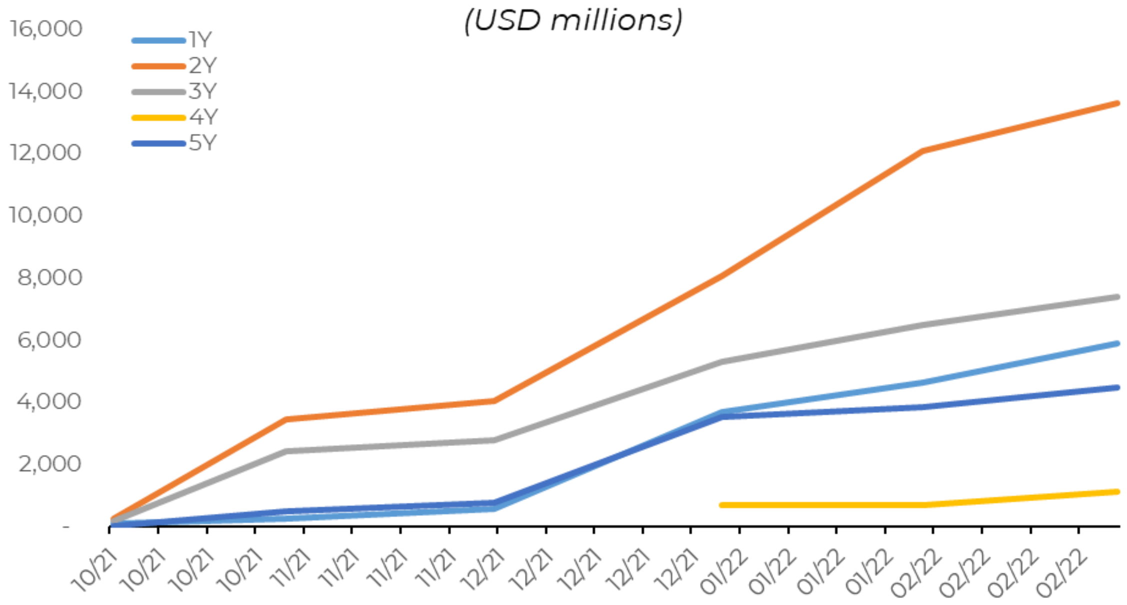
(USD billions)



Source: Bloomberg
Note: Issuance by companies domiciled in USA

Monetary policy is expected to be fully normalized within a range of one to three years. Figure 4 shows the evolution of the outstanding of BONDES F according to different maturities. The evolution ilustrates that almost six months after their first auction, their growth has been exceptional, especially for the 2 and 3-year maturities, in line with the current cycle of monetary policy hikes. Prior to 2020, the auction calendar only contemplated the 5-year floating bond with an average amount of USD$230 million allocation. In recent auctions of BONDES F, the total amount allocated was approximately USD$600 million.

Figure 4. Outstanding of BONDES F by Maturity



Source: Banco de México

The creation of the BONDES F was a milestone for the local debt market development, as it has proven to be an efficient instrument to boost the adoption of the TIIEF and promote the development of an OIS curve in Mexican pesos.

III. Threefold Strategy, Second Step: Issuance of New Sustainable Sovereign Bonds in Local Currency

The second step of the threefold strategy is issuing new sovereign sustainable bonds linked to Sustainable Development Goals (SDG)[9] , in local currency. The new sustainable sovereign bonds will be floaters, with the TIIEF as the reference rate, thus encouraging both the adoption of the new RFR and sustainable issuance in the domestic market (See Box 3). The expected result is to adhere more maturities to the TIIEF curve while establishing a benchmark for participants that incorporate sustainable criteria into their financing plans.

The aforementioned bond was named BONDES G. It preserves the same characteristics as BONDES F but with sustainability criteria and, therefore, a “greenium”[10] spread, i.e. the premium on green bonds.

Box 3. The Sustainable Debt Market

World wide the sustainable debt market, also referred as Environmental, Social and Governance (ESG), has considerably grown in recent years. In 2021, sustainable assets grew 76 percent versus 2020, with a record of USD$441 billion. Mexico positioned itself in 25th place globally by allocating USD$13.5 billion. The top three countries were: the United States (USD$302 billion), France (USD$177 billion) and Germany (USD$109 billion). Regarding emerging markets, China led the top 3 with USD$74.2 billion, followed by Chile with USD$25.8 billion and then Mexico (Bloomberg Intelligence, 2022).

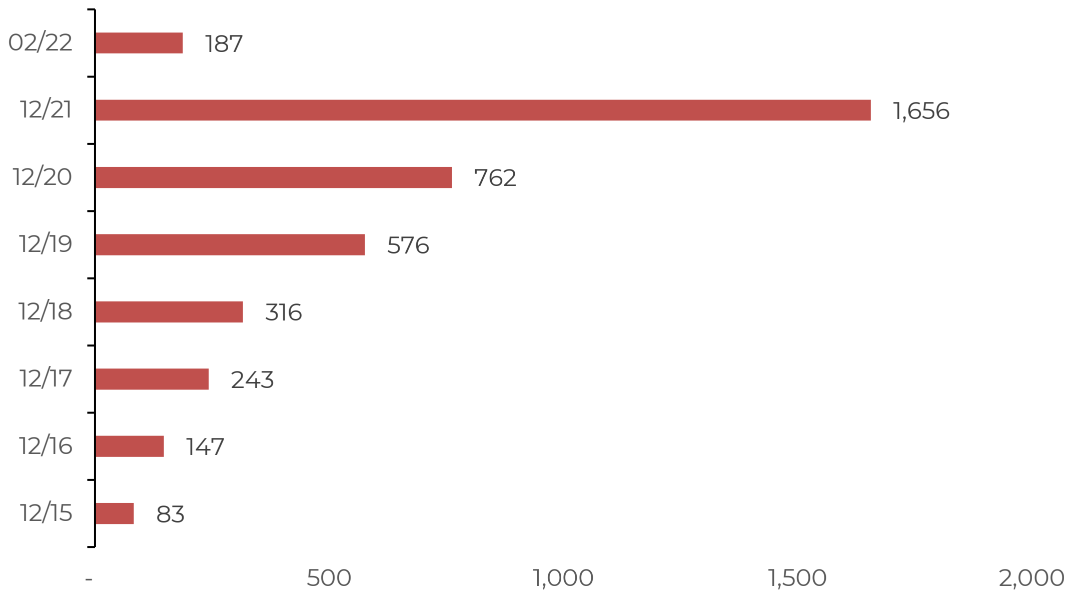
According to studies carried out by Bloomberg, global sustainable assets on track are expected to exceed USD$41 trillion by 2022 and USD$50 trillion by 2025, which represents a third of the projected 140 trillion Assets Under Management (AUM). The sustainable debt market is expected to raise USD$15 billion by 2025 (Bloomberg Intelligence, 2012). Figure 5 shows that the growth between 2020 and 2021 was very significant and that expectations for this year are equally positive.

9 Mexico has been issuing sustainable SDG-linked sovering bonds under its Sovering Sustainable Bond Framework available for inverstors in the MoF website.

10 The greenium is a premium to the issuer for having sustainable criteria in its issuance and it is expected to reflect a lower premium than a traditional bond for the incorporation of sustainable impacts in the valuation of the sustainable bonds.

Relevant institutions around the world have modified their prospects and investment regime for these instruments. Similarly, the rating agencies have included special methodologies and considered important the involvement in sustainable investments for the final rating of the company or country. The world is migrating investment assets to sustainable assets, and the growing international demand is still at peak.

Figure 5. ESG Total Amount Issued
(USD billion)



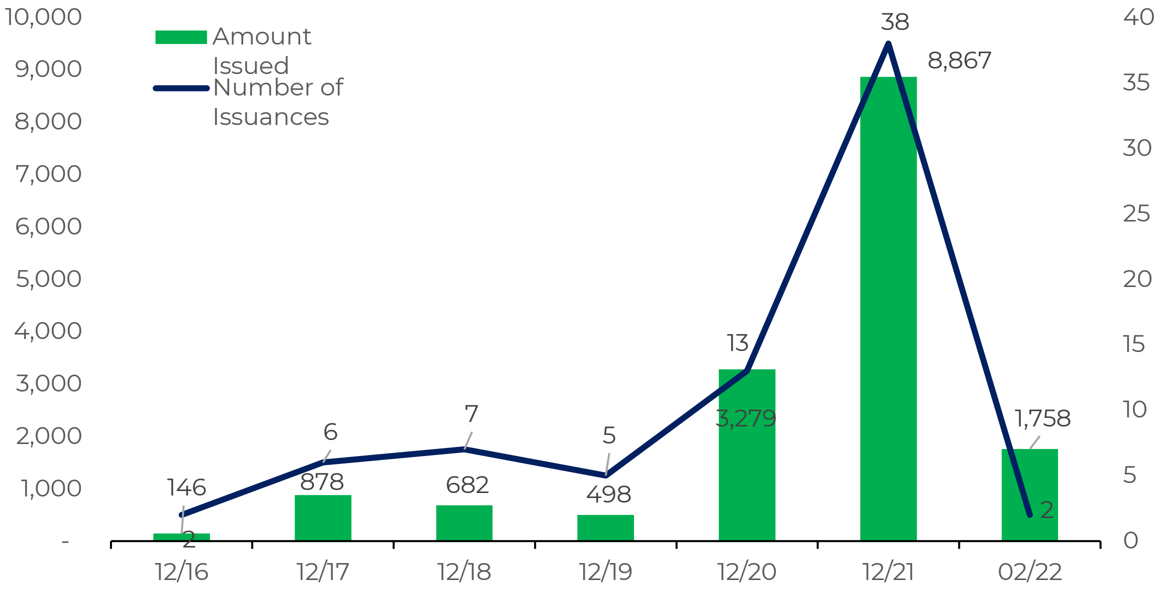
Source: Bloomberg

The Importance of Developing the Sustainable Local Debt Market

Since 2020, the Mexican sustainable debt market began to expand. Nonetheless given the issuance of the first sustainable sovereign bond in euros, this rate was considerably boosted in 2021 (See Figure 6).

Figure 6. Sustainable Amount Issued and Issuances total number

(USD million)



Source: CCFV

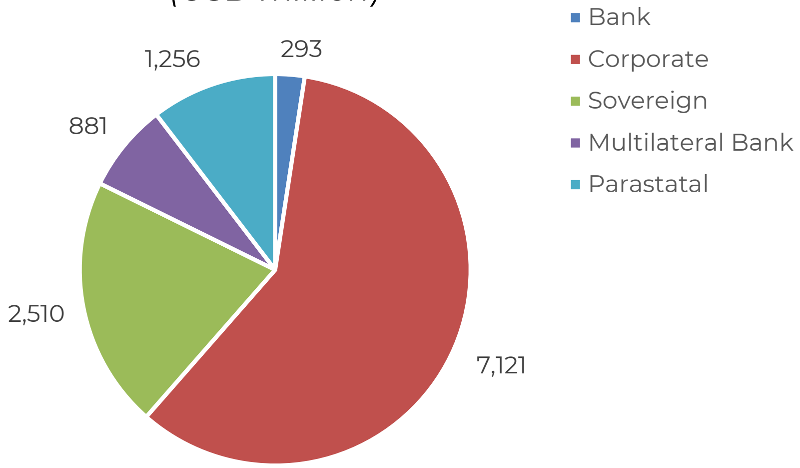
In 2021, 42 bonds were issued by the private sector, with the corporate sector accounting for 34 issues, representing an outstanding of around USD$7 billion (Figure 7). It is important to highlight that these bond issues have been placed in the market using quasi-sovereign benchmarks of the Mexican development banks[11]. Thus, introducing sovereign sustainable benchmarks denominated in Mexican pesos is expected to ease sustainable issuance in the local market.

To address this opportunity, the Mexico's new sustainable sovereign issuance will facilitate price discovery and greenium to contribute to the development of the local sustainable corporate debt market. For many companies, the sustainable issuances are just as fundamental as their traditional financing strategies. Companies today may be pressured to comply and report their sustainable disclosures, but they also understand the long-term benefits, such as expanding investors's base to open sources of financing, lowering financial risk management and diminish financing costs.

11 Mexico has eight local development banks devoted to different sectors such as infrastructure, subnational financing, housing and mortgages, financial inclusion, small and medium enterprises, and international commerce, among others.

Figure 7. Sustainable Amount Issued by Issuer

(USD million)



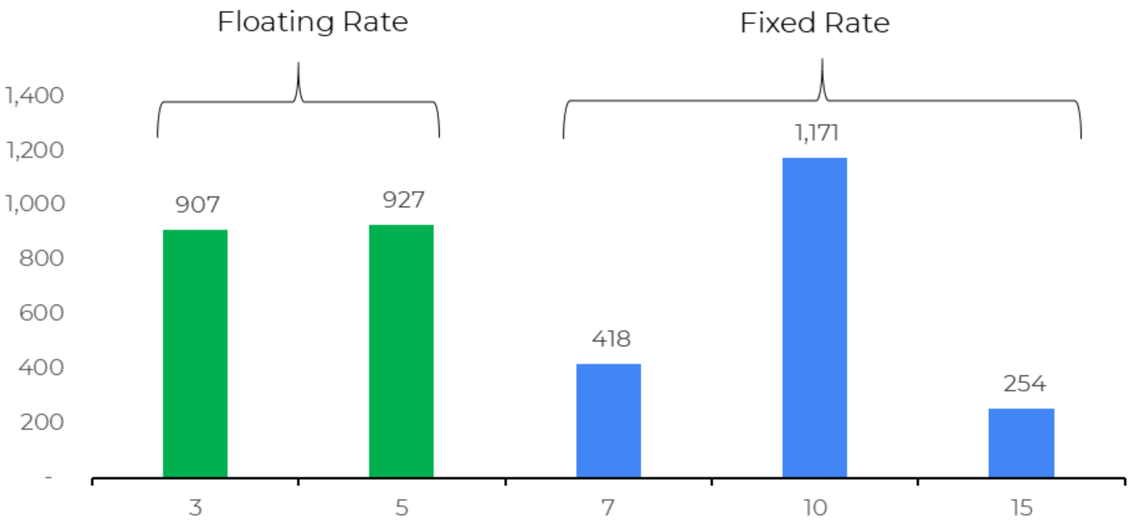
Source: CCFV

One of the main participants in the local sustainable market are the development banks, which complement the sovereign with quasi-sovereign asset class. Development banks are recurrent issuers in the local debt market with a floating rate issuance preference that responds to the nature of their balance sheet, where the actual reference rate of those bonds is TIIE. The MoF has encouraged the development banks to issue debt instruments under a floating rate scheme with the TIIEF as reference rate.

In addition, the development banks have pioneered issuing sustainable issuances because of their development mandates and due to their alignment to SDG criteria. Figure 8 shows that the 57 percent of outstandings bonds under a 10-year maturity are floaters, and 81 percent under a 7-year maturity.

The aspects described above were incorporated into the decision that the first sustainable sovereign bond in local currency should be a floater, given that there is already an incipient curve. Sovereign issuances will be placed in longer maturities allowing development banks to have more space to issue their bonds at different maturities, adding market depth with new references and tenors for the local sustainable curve.

Figure 8. Outstanding of Sustainable issuances from Development Banks by tenor
(USD millions)



Source: CCFV

Mexico has shown a strong commitment to comply with the 2030 Agenda since its launch in 2015. The country was the first one to issue a sovereign bond linked to the SDG. Currently, 78 percent of the Federal Government budget programs are linked to at least one SDG, this allows: I) recurrent issuance of sustainable sovereign bonds, II) access to a new investor base focused on sustainable impact of their investments; and, III) development of reference curves for other national sustainable issuers.

To date, Mexico has issued two sustainable bonds for a total of 2 billion euros. Now, the MoF is on track to develop its sustainable curve in the local market. In addition to the benefits that the MoF has in terms of innovation and better refinancing possibilities, it is essential to build a local curve at different rates (fixed, variable, floating, and other instruments in addition to bonds) in order to give all participants a risk-free sovereign benchmark. Through these actions, the MoF will encourage greater efficiency and transparency for the whole debt market.

On the demand side, Mexican pension funds still have a long road to rebalance their portfolios to include sustainable assets. In 2021, only 4 of the 11 pension funds in the country adopted sustainable investment principles. As of 2022, in a joint effort by Mexican financial authorities in collaboration with the National Commission of the Savings System for the Retirement (CONSAR, by its acronym in Spanish), pension fund regulation was introduced in which all Pension Fund Administrators must consider sustainable criteria in their investment portfolios (*Consar*, retrieved March 17, 2022).

Pension Funds AUM represented approximately 22 percent in 2021 and the MoF estimates that this will grow up to 40 percent in a few years. There is a substantial opportunity for the most important asset managers in Mexico to invest in sustainable debt.

BONDES G and Greenium Discovery

The Mexican MoF took the initiative to study the different issuance mechanisms that other countries have used and the coexistence of a sustainable curve with the *brown curve, i.e. a sovereign curve without sustainable criteria*. The countries have experienced greenium discovery, when placing Sustainable Bonds in the primary market.

One of the most widely used strategies is the Twin Bond Structure. This structure issues sustainable bonds with the same maturity and a coupon rate as a brown bond. An important fact is that the sustainable bond typically has a smaller issue volume than the conventional bond. The main objective is to ensure that the issuance of sustainable bonds does not have a negative impact on the overall liquidity, for instance, in sovereign bonds. At the same time, it is easier for investors to diversify between conventional and sustainable bond allocation. The issuing procedure differs in each country. For example, while some countries issued sustainable and brown bonds at the same time, others did it on different days. Some other sovereign issuers seek to issue separate sustainable labels which could be attached to any conventional government bond.

The MoF considered an alternative that would integrate three markets simultaneously given the Mexican context described in past sections.

To sum up, four fundamental factors were considered to design the new sustainable sovereign bond:

I. The transition to alternative reference rates, this is the new TIIEF. Only a few emerging markets have started this transition, while the changes in advanced economies have been gradual. This transition has been limited due to the lack of derivatives market liquidity between TIIEF and TIIE.

II. In October 2021 BONDES F were first issued to promote the gradual transition to this new rate. This action will encourage other issuers (especially Development Banks) to reference their issuances to the TIIEF.

III. The fact that Development Banks have a strong preference for sustainable bonds and floaters opening the opportunity for a market instrument comprising this features.

IV. The new cycle of hiking rates makes floating bonds preferred by investors.

Hence, in 2022, the MoF will issue a new sustainable floating bond in Mexican pesos named BONDES G using TIIEF as the reference rate. This will be priced through the BONDES F (brown bonds) with similar maturities, allowing the market to define a greenium reflected in the spread of the brown bond. As BONDES F already has the TIIEF as a reference rate, the creation of an efficient sustainable floating curve it is expected to have a natural adoption by the market.

Furthermore, the floating rate curve referred to TIIEF will contribute to build fixed-rate curve by: i) providing liquidity for the new OIS curve based on TIIEF, and ii) targeting both the non-sustainable and sustainable local debt market.

Local Market Coordination

Currently, the Central Bank of Mexico uses sovereign securities to articulate monetary policy. This generated that, by the end of 2021, Banxico will be responsible for approximately 50% of the outstanding of BONDES D, for monetary policy purposes.

Open market operations are one of the main instrument used by the Central Bank to manage short-term liquidity, either through credit auctions or the purchase of securities. For this, instruments used as monetary regulation are essential to achieve the Central Bank's operational objectives.

In order to accelerate the adoption of BONDES F, the Central Bank and the MoF developed a new liability management tool, through a process of coordination and active communication between both institutions.

The result was the creation of a new legal framework on the purchase of BONDES D for monetary policy and the sale of BONDES F by the Federal Government. This also implied the development of operating systems within the Central Bank and within the MoF.

To date, three exchange operations have been carried out for an approximate amount of USD$9.7 billion, providing more liquidity to the BONDES F market, in addition to the operations described in previous sections. In these operations, the Central Bank repurchases previously auctioned BONDES F and liquidates the securities. In exchange, it delivers to the holders of the debt a BONDES F that is in charge of the Federal Government. Since this transaction involves a crossing of balance sheets, the Federal Government receives Mexican pesos for the issuance of the BONDES F. A second cross-balance sheet swap program is currently being studied by the Ministry of Finance and the Board of Governors of Banco de México.

For new BONDES G, the MoF, in coordination with Central Bank, chose syndicated auctions[12] over the traditional primary auction to provide volume and guarantee the success of BONDES G issuance. To complement the volume, the Central Bank will also use BONDES G for monetary regulation.

In Mexico, syndicated auctions have been carried out since 2010 only for fixed and inflation-linked rate bonds. In these operations, the "Distributors" are appointed among the members of the Market Makers program. The adoption of this mechanism has allowed Mexico to have access to a larger investor base compared to what is commonly achieved through a traditional primary auction, due to it is feasible to place a relevant outstanding in a single auction in order to adequate liquidity conditions in the secondary market (*El Mercado De Valores Gubernamentales En México*, 2014).

12 The syndicated auction mechanism consists of sovereign securities sold to a group or syndicate of financial institutions who, for a commission, commit to purchase a certain volume of securities at a market price. The securities are then sold by the members of the syndicate to the rest of the market.

IV. Threefold Strategy, Third Step: Integrating Curves and Expanding Maturities

In order to smooth the redemption profile, BONDES G will have different tenors compared to the BONDES F. Hence, the MoF expects to start the issuance of BONDES G in 4 and 6 years maturities in 2022, reaching up to 9 years.

The MoF will develop a fixed sustainable curve through the derivatives based on the TIIEF once sufficient liquidity and maturities in the floating curve are achieved. The market will be able to extrapolate the fixed rate from the floating rates. In summary, the fixed rate will be derived from the floating rates (BONDES F and BONDES G) and the futures rates (OIS curve based on TIIEF), allowing to match flows (SWAPS) at a desired term.

Fixed rate maturities are expected to have a curve up to 10-year maturity to also meet the duration required for long horizon investors, such as pension funds and insurance companies.

The MoF is aiming to provide investors with an efficient floating and fixed sustainable curve for allowing the deployment of investment strategies wrapped with the hedging strategies. The MoF expects that issuing instruments on the new curves will enhance efficiency and benefit for all market participants, including banks.

V. Final Remarks

The threefold strategy is a key to enhancing efficiency in the debt market for public and private issuers, allowing for greater flexibility for all issuers in their financing programs, both sustainable and traditional. Setting up the local debt market for financial innovation should attract a broader investor base and foster efficiencies both in the liquidity and depth of the local market. At the same time, it will further promote transparency on the price discovery process.

The integration of the local sustainable market with the TIIEF derivatives market is essential to achieve efficiency. Therefore, the MoF expects to increase the dynamism in both markets in order to hedge sovereign assets. Furthermore, the creation of the local OIS curve will ensure correct pricing in Mexican pesos, benefiting all participants.

Moreover, the structure of the fixed income market and international capital flows are expected to transform the debt instruments ecosystem demanded by investors. Another positive effect is transiting to sustainable financing and RFR to reduce future refinancing risk.

The MoF is convinced that the road to efficiency in the local debt market will be achieved through the route of financial innovation. The sustainable floating and fixed-rate curve should boost the derivative market. Inter- and intra-market dynamics should also cascade to the rest of the entire Mexican financial ecosystem.

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