

SESIÓN 21

Desarrollo e innovación en la banca española y latinoamericana, siglos XIX a XXI: ¿evolución o ruptura.

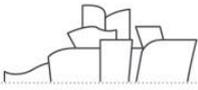
Remittances Market Structure and Financial Technology: An exploration of the US-MX corridor, c. 1990-2022

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Abstract:

This paper deals with the main changes in recent years in the remittances market in the United States-Mexico corridor. We offer a novel historical evolution of the structure and the market participants. In the first place, we identify the internal structure and player that involves clients, 'remitter' firms, correspondent banks, among others, then, we examine market frictions. Finally, we offer an analysis of the structural limitations of the market and a first approach of how, in a country with high rates of unbaked population, digital economy and financial technology could help to reduce the average cost of cross-border payments to 3 per cent, as one of the United Nations' 2030 sustainable development goals.



Keywords: remittances, financial technology, fintech, cross-border payments, Mexico, United States of America.

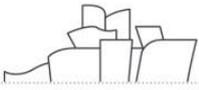
INTRODUCTION

The birth of Jesus Christ in Bethlehem is perhaps the best-known story in the Western world. The testimonies indicate that three wise men (Melchor, Gaspar and Baltazar) came to greet the newborn child with myrrh, incense, and gold as gifts. Melchor, by giving gold to Jesus, what he did was generate a remittance (assuming foreign exchange). This simple act exemplifies the essence of remittance: delivering wealth (in the form of money) generated in one place for the use of people in another country. In this case, there was no financial intermediation. Probably Melchor carried the money with himself. Today the panorama is more complex and diverse, dominated by financial intermediation, but the need remains the same: financially support someone you know, typically family or friends¹.

From the Economic History discipline, remittances have been a subject of interest mainly during the First Globalization era (c. 1870-1913) (Schrier, 1958; Hvidt, 1975; Kero, 1991; Faini and Venturini, 1994; Hatton, 1995; Ó Gráda and O'Rourke, 1997; O'Rourke and Williamson, 1999; Kenwood and Lougheed, 2002)². Especial mention to Esteves and Khoudour-Castéras (2011) who studied the link between remittances and financial

¹ Jesús Cervantes, one of our interviewees, pointed out the relevance of remittance for the artist Vincent Van Gogh. As historically has been portrayed, Van Gogh struggled with money because he could not sell most of his work during lifetime. Jesús Cervantes stated that Van Gogh receive allowance in form of money and inputs from his brother, Theo Van Gogh. Thus, remittances were vital for Vincent's works. Income, remittances, and material consumption of Vincent Van Gogh has been studied in Liesbeth Heenk (2014). *Van Gogh and Money*. Secrets of Van Gogh 5. Netherlands: Amsterdam Publishers.

² But sometimes remittances have no specific mentions. See for example, Baines (1991) in the 'economic effects of immigration' section.

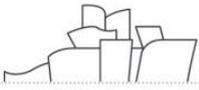


development in peripheral Europe during mass migration era, and we also highlight Magee and Thompson (2006a, b) for their work on British remittances between 1975-1914. In short, remittances were critical to boost immigration to the Americas and to foster financial development in peripheral Europe. One key explanation is that past emigration encourages present migration due to *path dependence* or *friends and relatives effect* (O'Rourke and Williamson, 1999, p. 191).

From 1980s to the present, remittances have had little attention from the academia. Even though international banking and correspondent banking (one of the most relevant players in the remittances market) have increasingly been studied, however, these works did not cover very recent times. They mainly are concentrated during the Great Depression (Calomiris, Jaremski and Wheelock, 2019; Jaremski and Wheelock, 2020), the Bretton Woods period (1944-1973) (Schenk, 1998; Battilossi, 2002; Mollan, 2012), and the immediately subsequent years (Schenk, 2014, 2017, 2020, 2021; Scott and Zachiaridis, 2014).

Good exceptions are the works made by Erbenova *et al.* (2016) about correspondent banks after the global financial crisis, the book of Reed and Walden (2013) on cross-border electronic banking in Europe, the book of banking, computers, and ATMs by Bátiz-Lazo (2018), and the policy report by Aggarwal, Demirgüç-Kunt and Martinez-Peria (2006) on remittances and financial development. Besides these remarkable works, remittances and cross-border payments are scarce topics in the field.

Therefore, during late 20th century and early 21st remittances have been overlooked from business and economic history. In addition, even though there are several works in Economics about immigration in this period, they are mainly focus on the economics

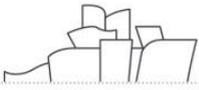


effect of migration in the labor market (Peri, 2016, 2018), rather than remittances. This paper deals with both the market structure and financial technology for remittances.

Study remittances in present time but from a historical perspective is relevant because they are a lifeblood for emerging economies and because financial development is one of most cited conditions for economic growth. Nowadays, one of the United Nations' 2030 sustainable development goals specifically aim to reduce the cost of cross-border payments to 3 per cent (today is 7 percent). That is why everybody is talking about remittances. In addition, it is a large business. The amount of money and the critic impact of them in emerging economies have been clearer since in 2019 remittances overtook Foreign Direct Investment (FDI) as the largest capital inflow for emerging countries (The Financial Times, 2019a).

The main sources use in this paper are interviews of experts working or formerly working in the US-MX remittances corridor. As a second source, we use data collected by banks, research centers, and international organizations, such as World Bank, to quantify the remittances during the period 1990-2022.

The methodology followed was mixed methods approach to explore the remittance market structure. Semi-structured online interviews were used to complement and expand desk research, with the purpose of obtaining mutual viewpoints about similar experiences while using the interviews to elaborate and clarify on the (scarce) knowledge obtained by desk research (Caruth, 2013). At this point it must be acknowledged a key limitation of using online interviews is the lack of a physical presence from the researcher which may hamper the reading of physical cues or even have a negative effect on the degree of trust and disposition to sharing from interviewees (Sedgwick and Spiers, 2009).



Nevertheless, online interviewing appeared to be the most appropriate approach to conduct the fieldwork.

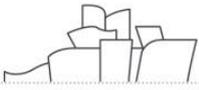
The paper is organized as follows. After the introduction, we provide general trends of remittances in the world and Latin America. In the second part, we introduce the main features of the Mexican migrants and their remittances, and we explain the players and connections among 'remitters' companies (i.e., Wester Union or MoneyGram), payer aggregators (for instance, TransNetwork), correspondent banks, and local payers (for example, Elektra or Oxxo). In the third section we discuss the (small) participation of fintech firms in the remittances business and how financial technology and the digital economy could solve some of the market frictions, before concluding.

1. GENERAL TRENDS IN REMITTANCES OF LATIN AMERICA (AND THE WORLD)

Cross-border payments are vital to economic prosperity, international trade, global financial stability, international travels, access to capital, growth of international e-commerce, and poverty reduction. But why is everybody talking about remittances³? Two answers: the amount of money (and its impact in low-income economies) and the United Nation's 2030 sustainable development goals.

As The Financial Times (2019a) stated remittances are the human face of capital flows. Twenty years ago, global inflows were \$100 billion dollars and steadily increased to \$689 billion in 2018. Today, India, China, and Mexico are the top 3 in terms of US dollars

³ For one of our interviewees, an expert working for years in this market, remittances should be understood as a cross-border payment between relatives (or friends) essentially made by cash through 'remitters' companies, that is, Western Union, MoneyGram, among others. If the cross-border payment is made by a wire transfer through banks, then it should not be considered as a 'remittance'.



inflows. Haiti, El Salvador, and Honduras have the highest share against GDP, even over 20 percent of the GDP for these two Central American countries⁴.

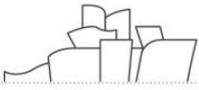
Remittances worth \$707 billion passed through the system in 2019, \$529 billion to people in low- and middle-income countries, costing an average of 6.82 percent in transaction fees. For this reason, the G20 has made the improvement of cross-border payments a priority and has asked the Financial Stability Board (FSB) to propose solutions; therefore, the United Nations has set a goal of reducing remittance fees to at least 3 percent by 2030⁵. To put it in perspective, since early 2000s FDI was the main source of capital inflow to emerging countries, but in 2019 remittances overtook FDI as the largest inflow of capital inflow to emerging economies⁶.

Remittances allow families to cover essential consumption in receiving countries, but they also make up deficiencies of weak or non-existent capital markets (Giuliano and Ruiz-Arranz, 2009). In Mexico and Central America, they served as capital for business purposes (Padilla Pérez, Stezano and Villarreal, 2020). For example, in early 2000 a study of small firms in urban Mexico found that within the ten states with the highest rate of migration to the United States, almost than a third of the capital invested in

⁴ The Financial Times (2019a). "Record high remittances are not without risks." The Editorial Board. September 2, 2019. <https://www.ft.com/content/1538de3c-c99c-11e9-a1f4-3669401ba76f>

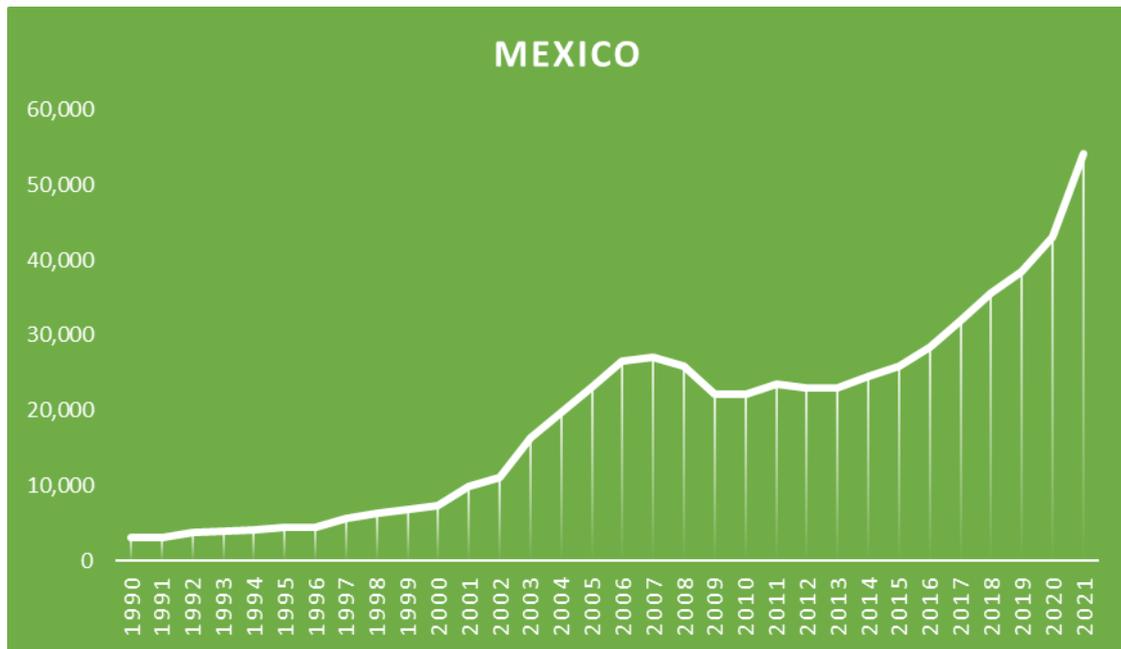
⁵ United Nations (2018). "Remittances – an untapped engine for sustainable development." Kuala Lumpur, Department of Economic and Social Affairs. May 8, 2018. <https://www.un.org/development/desa/en/news/population/remittances-engine-for-sustdev.html>; The Financial Times (2019a). "Record high remittances are not without risks." The Editorial Board. September 2, 2019. <https://www.ft.com/content/1538de3c-c99c-11e9-a1f4-3669401ba76f>; Future of Finance (2021). "It's time to fix cross-border payments." Future of Finance Seminar. September 18, 2021. <https://futureoffinance.biz/2021/09/28/its-time-to-fix-cross-border-payments/>

⁶ The Financial Times (2019b). "Remittances: the hidden engine of globalisation." By Cocco, F., Wheatley, J., Pong, J., Blood, D. and Rinisland, A. FT Series Cash Trails. August 28, 2019. <https://iq.ft.com/remittances-capital-flow-emerging-markets/>



microenterprises is associated with remittances. Nevertheless, they also contribute to 'hide' and underestimating poverty in Mexico (Cervantes and Cruz, 2021).

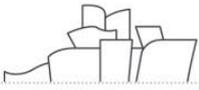
Figure 1. Foreign remittances to Mexico (current millions of dollars, 1990-2021)



Source: KNOMAD/World Bank (2022).

COVID-19 pandemic outbreak and the subsequent unemployment led to the most international institutions to predict a drop in remittances. In April 2020, the World Bank estimated that remittances in the world could fall 19.9 percent. Even though COVID-19 crisis impacted the US (and world) labor market, the predictions failed⁷. Unemployment rate of Mexican migrant population went from 6.6 percent in March to 17.1 percent in April 2020. But in 2021, employment had already recovered. Between May and June 2021, it stood at 4.7 percent (BBVA Research, Fundación BBVA and CONAPO, 2021).

⁷ The World Bank (2021). "Defying Predictions, Remittance Flows Remain Strong During COVID-19 Crisis." Press Release. May 12, 2021. <https://www.worldbank.org/en/news/press-release/2021/05/12/defying-predictions-remittance-flows-remain-strong-during-covid-19-crisis>

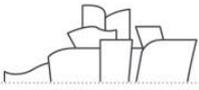


Despite unemployment during lockdown months -and until today-, world remittances and remittances to Mexico have steadily grown. Even though thousands of Latino workers were laid off, they still manage to send money to their families in Mexico to fight the pandemic⁸. Among the main reasons that explain these results are the fact that Hispanic employment was one of the fastest sectors in recovering jobs, US welfare for unemployment workers (very important in California), and the little help from the Mexican State to national families. In 2020, remittances to Mexico reached \$40,601 million dollars and they keep growing (BBVA Research, Fundación BBVA and CONAPO, 2021).

Even the President of Mexico, Andrés Manuel López Obrador, recognized the vital importance of remittances in a trip to Tijuana in February 2021. He said that Mexicans living in the U.S. were “heroes” for their financial support: “this support, this help (remittances), took us out of the hole because that money reaches all the communities in Mexico and the poorest areas. This is what allowed us to resist the pandemic. The economy fell but we did not have a consumer crisis. People did not stop having the basics”⁹. This is backed up by the numbers: during 2020, Mexico had the highest (3.8 percent) dependency (remittances as a share of GDP) ever seen and five states (Michoacán, Guerrero, Oaxaca, Zacatecas, and Nayarit) had more than 10 percent of dependency. Some of these states are among the largest providers of migrants. Between 2015-2020, Mexican migrants came mainly from Guanajuato, Jalisco, Michoacán,

⁸ The Financial Times (2020). “Mexican migrants send more money home to help the virus-hit economy.” August 4, 2020. <https://www.ft.com/content/424e695e-fc39-4024-9952-578d39655ab6>; The New York Times (2020). “Even When They Lost Their Jobs, Immigrants Sent Money Home.” September 24, 2020. <https://www.nytimes.com/2020/09/24/us/coronavirus-immigrants-remittances.html>

⁹ The San Diego Union-Tribune (2021). “Remittances have increased sharply since the start of the pandemic, with help from U.S. relief payments.” By Wendy Fry. March 10, 2021. <https://www.sandiegouniontribune.com/news/border-baja-california/story/2021-03-10/mexican-migrants-remittances>



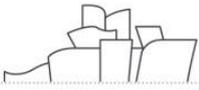
México, Ciudad de México, Veracruz, Oaxaca, and Puebla states (BBVA Research, Fundación BBVA and CONAPO, 2021).

Nowadays, remittances are still growing. Remittances to Mexico add 21 months to the rise, they increased 19.6 percent in January 2022. The surprising growth of remittances during 2020 and 2021 is not particular to Mexico but is common among many countries in Latin America and the Caribbean. During 2021, remittances to Guatemala increased 34.9 percent, higher than the increase in Mexico (+27.1 percent), El Salvador (+26.8 percent), Dominican Republic (+26.6 percent), Colombia (24.4 percent) and Jamaica (20.4 percent)¹⁰.

2. MEXICAN MIGRATION AND REMITTANCES

When we talk about Mexican migration, essentially, we are talking about migration to United States of America. Mexican migration the north has been one of the most controversial issues in American politics in recent years. The explicit rejection of immigrants by the government of Donald Trump and his supporters went around the world with their now famous propaganda about building a wall to stop migration. However, this political discourse of rejection has no economic support: Mexican workers carry out critical work in the United States and their remittances to Mexico are vital income for thousands of families. Therefore, in a general perspective, Mexican migration has made both countries better (The Economist, 2022: p. 27).

¹⁰ BBVA Research (2022). "México. Remesas suman 21 meses al alza, aumentaron 19.6% en enero." By Juan José Li. Migración y Remesas. March 1, 2022. <https://www.bbvaresearch.com/publicaciones/mexico-remesas-suman-21-meses-al-alza-aumentaron-196-en-enero/>

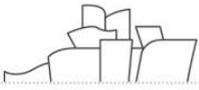


Mexican migrants who settle in the United States do not all belong to the lowest-income people. The migration process costs money (estimates indicate that the cost of crossing to the north ranges from \$3,000 to \$7,000 dollars, therefore, the migrant normally gets into debt tarnishing goods or is financed by a contact in the United States. However, the North American financing must be paid equally by the migrant. The latter is the same system seen in the migratory phenomena of the First Globalization era (1870-1913) of many immigrants.

Most Mexican migrants are accommodated in the agricultural sector of California and the construction sector all over United States, although there are new migratory phenomena in which Mexicans migrate to other states such as Texas, Minnesota, Arizona, and Florida. As for the sex of the migrant person, historically the majority have been men. However, in recent years there has been a change in the pattern. From the 1990s to approximately 2005, almost 12 million Mexican migrants to the United States are estimated. This phenomenon is closely linked to the performance of the agro-industrial sector. As many workers are not needed, deportations begin to grow. The politicization of migration in the United States, especially during Trump's administration, also tends to hide what is happening in the labor market.

2.1. Remittances from United States of America to Mexico: An overview of the market structure evolution

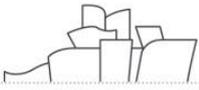
Traditionally, the most important foreign income flows for Mexico emerged from oil exports, tourism, foreign direct investment and the maquila industry. However, the accelerated growth in family remittances since the year 2000 turned them into one of the main sources of foreign exchange income for the country.



According to Heath (2012, p. 205), in 2001 remittances surpassed tourism, the accumulated flow of remittances from 2006-2010 surpassed foreign direct investment by more than 10 billion dollars in the same period, and in 2009 more than doubled the income from oil exports (despite that year observing a downturn in annual remittance transfers). Since 2010, the automotive industry is the only export activity that exceeds foreign income generation from remittances by a significant margin.

Family remittances are the transfers of resources from people working in the United States to their relatives in Mexico. Remittances to Mexico originate in diverse countries, such as Canada (\$649 million US dollars in 2020), United Kingdom (\$124 million), Ecuador (\$98 million); Chile, Colombia, and Spain (each sending approximately \$50 million in 2020). But all these are dwarfed by those from the United States (\$38,761 million in 2020). Hence why remittances are largely a phenomenon of Mexican migration to the USA.

Remittances are a direct form of salary income substitution for most recipients and only in a handful of cases, they complement small investments such as house refitting, church construction or even micro business (Roldán, Gasca and Sánchez, 2019). Mexican migrant workers receive a higher income at destination than in their home location but at a lower salary and benefits than other US domestic workers. Migrants are seldom at the bottom end of the social pyramid as they are usually skilled and recipient families are seldom benefiting from government subsidies. Migrants also need to have the (informal) credit capacity to pay for the voyage north, which can be between \$3,000 and \$7,000 dollars.



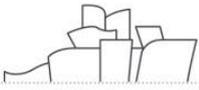
The increase in remittances is linked to the growth of migrants who, in turn, respond to the demand for labor of (primarily but not exclusively) agricultural and construction workers. This growth now includes approximately 32 percent of transfers initiated by women migrants in 2021¹¹. There is also an increasing number of indigenous ethnic groups¹², representing between 6 to 10 percent of total transfers and aimed at locations which had not been traditionally identified with migrant workers.

Around 1980 Western Union had an 80 percent share of the volume of transactions, because of technological change and increased competition, that share plummeted to around 30 percent in 1995 and less than 12 percent by 2010. In the early 2000s there were up to 60 remittance specialists capturing senders' traffic. That number has since halved, with some large banks such as Citibanamex, Santander, and BBVA exiting the market¹³. There is no participant with significant operations on both sides of the border. Remittances typically represent between 15 and 35 percent of the migrant's net salary. In the meantime, the cost of the remittance dropped through tighter foreign exchange spreads and the fee for a single transfer dropped from approximately \$30 dollars in the mid-1990s to \$10 dollars in 2022. Individual value hovers in \$350 dollars (nominal) per transaction, with those over \$1,500 less than 1 percent of total volume and modal transaction around \$150 dollars.

¹¹ Mexico Institute and Wilson Center (2022). "Remittances in Mexico Reach a Historic High." Infographic by Jazmin Aguilar Rangel. March 15, 2022. <https://www.wilsoncenter.org/article/infographic-remittances-mexico-reach-historic-high>

¹² Roldán Gasca and Sánchez (2019) estimates that 90 percent of the transfers by indigenous groups comprise nàhuas, purèpechas, mixtecos, totonacas, and nhañus.

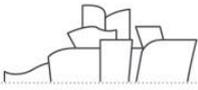
¹³ BBVA exit is partly due to the sale of BBVA Compass and other US assets to PNB in 2020. However, distribution in Mexico through pre-paid debit cards remains high.



Family remittances largely initiate and are distributed in cash. Although some players like BBVA have successfully increased financial inclusion through prepaid cards, while the volume of remittances grew between 2020 to 2022 from 14 to 18 billion dollars for BBVA, the number of electronic transfers to prepaid cards reached 85 percent of transactions. Prepaid cards enable recipients direct transfer through a SPEI number (i.e., the Mexican real time payment system) and access to ATM withdrawals but without credit scoring and other checks required by bank accounts. Other providers and particularly payers such as Coppel (retail company) and Oxxo (largest company of convenience stores in Mexico) have not so far been as successful as BBVA's move. Some remittance companies have enabled several forms of electronic transfers with no uptake from customers. The Oxxo-Citibanamex "Saldazo" prepaid card, which was hugely successful during the pandemic, ended the issuing of new cards in April 2022 primarily for Know Your Customer (KYC) regulatory concerns. Meanwhile, fintechs such as Wise, Remitly and Global66 represent a very small portion of family remittances, working primarily with higher up the pyramid, banked individuals, and medium sized business while offering cost, convenience, and better service alternatives to that of banks. Nevertheless, fintechs face problems as cash remains king in small payments¹⁴.

There is a dark side of remittances. First, the increase in disposable income came without increasing productivity. They also skew poverty estimates. It is unclear whether remittances incentivize individuals to remain in a cash economy and the informal sector.

¹⁴ "Cash still drives 90% of transactions under 500 Mexican pesos (\$25), as well as 78.7% of payments or bills over 500 pesos... The proportion of Mexican adults with bank accounts edged up two percentage points between 2018 and 2021 to 49.1%, while card usage for larger transactions increased to a modest 12.3%." Reuters (2022). Fintechs fail to make a dent in Mexico as cash remains king. Future of Money. By Isabel Woodford. May 26, 2022. Available at: <https://www.reuters.com/business/finance/fintechs-fail-make-dent-mexico-cash-remains-king-2022-05-26/>



Nearly 60 percent of economically active Mexicans are employed in the informal sector and generate 23 percent of gross domestic product (GDP), while around 40 percent of Mexicans are employed in the formal sector and contribute with 77 percent of GDP; in other words, productivity in the formal sector is three times higher than that in the informal sector. Thus, the best social program to combat poverty is to generate the conditions for the creation of more formal, well-paid jobs¹⁵.

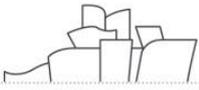
Secondly, quantitative analysis by Presburger (2021), which has not been validated elsewhere, estimates that US-Mexico remittances will peak before 2040 and will then follow a steep decline. As individuals, migrants will either end the commitment to their home country: relatives either die or migrate, the family unit is dissolved, or children grow of age. Migrants return or acquire financial commitments (such as cars, white goods or even mortgages). There have been some 16 million Mexican migrants since 1980, of which some 12 million took off in the 1990s. It is hard to see that trend continuing.

In what follows we discuss some of the developments around remittances related to the advent of the digital economy. However, the remittance process remains quite exhaustive because the 'journey' of a remittance is an operation surrounded by uncertainty for users.

2.2. Market structure in the US-MX corridor

Mexican migration is mostly a good thing for both sides of the US-MX corridor. Since 1965 over 16 million people have migrated from Mexico to the United States, and since

¹⁵ In Mexico, 99.7% of all firms are small or micro enterprises (mipymes). The other 3% is made of some 14,000 large employers.

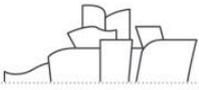


2017 there have been more legal than illegal Mexicans in the United States. They work in different sectors and live in different states, but they mostly live in Arizona and California. They are key for the primary economic sector: 68 percent of California's agriculture workers are Mexicans¹⁶. Thus, it is normal for them to send to Mexico. Prior to the existence of remittance firms, the typical way of transporting money across borders was through people. If someone was going to carry money from one place to another, then 'word of mouth' spread that this person would transport money and those interested could request to send money with this person in exchange for a commission (or sometimes without charge). That business logic is the core of the remittance business.

2.2.1. What I have to do when I want to send my mother money: An overview from outside the market

In the first case we will assume the sending of a (cash) remittance from the United States to Mexico, although, given the similarities shared among the markets, this exercise is also valid for remittances sent to Central and South America. The first agent to participate is the sender and the second is the final recipient (or beneficiary) of the remittance. In our case, we will assume that the sender is a Mexican migrant woman (called Lucía) working in agriculture in California, United States, who wants to send money to her mother (María), a woman living in Michoacán, Mexico. The following market participants are going to depend on a series of decisions of the sender.

¹⁶ The Economist (2022). "The United States of Mexico. Mexican migration has changed America for the better." The Americas, pp. 27-28. April 23-29, 2022. <https://www.economist.com/the-americas/2022/04/23/mexican-migration-has-changed-america-for-the-better>

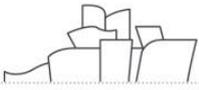


Suppose Lucía receives their income in cash and does not have access to a bank account. For example, the woman may be undocumented or, although she has her papers in order, she may still not have access to a bank account¹⁷. Therefore, her remittance will also be made in cash. In this case Lucía can go to a 'remitter' company ('remesadora'), that is, firms that are dedicated to sending money abroad. For example, some well-known 'remitters' are MoneyGram or Western Union. The woman can go to an office of the 'remitter' or to another small firm that acts as an agent of a 'remitter'. The latter is very common: the agent can be a grocery store, a gas station or another business that is known by the sender and that is normally recommended by someone close to the sender (peer recommendation or 'word of mouth'), typically another migrant remittance sender. This point is relevant since one of the aspects that most concerns people in the remittance process is the uncertainty from sending the money to receiving the remittance in the other country¹⁸.

For these companies in the United States, being an agent for a 'remitter' firm is a great business because it keeps its customers coming to the store (at least one time per month) while at the same time receiving a percentage of the commission paid by the sender for sending the money abroad. The commission charged by these agencies can be up to 50 percent of the fee paid by the client. For example, the average commission is around US\$8-10 (it was higher than US\$20 a decade ago), so the store can charge US\$5.00 per

¹⁷ This could be explained by several factors such as lack of specialized products for this public or the resilience of the use of cash. For a discussion of this latter aspect, review the preference on cash over debit card in van der Crujjsen, Hernandez and Jonker (2017), and the persistence of cash during the COVID-19 pandemic in Bátiz-Lazo, González-Bautista and González-Correa (2021).

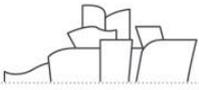
¹⁸ There is also the case where the sender does not have a peer recommendation and goes to the store and requests the different types of exchange offered by the 'remitters' and chooses the cheapest one. For the administration of the store, it is indifferent with which 'remitter' the customer operates since the commission is similar between 'remitters'.



transaction. On some occasions, these revenues can be higher than the revenue from the regular business of the store. In addition, the business can host more than one 'remitter' company, offering more options and increasing revenues. As the process is surrounded by uncertainty, many of these stores allow the sender to contact the person abroad so customers can provide information on the day and time of availability of the funds and other information related to the transfer transaction, thus, reducing uncertainty. During the process of sending money, the client faces two types of charges that affect the amount of money sent: the commission or fee (close to \$10 dollars)¹⁹ and the exchange rate charged by the 'remitter', which is less favorable than the market exchange rate. For example, if Lucía has \$200 dollars to send them to Mexico (which at a market exchange rate of \$1 = 20.42 Mexican pesos is equivalent to approximately \$4,084 Mexican pesos) to her mother in Michoacán, Lucía must pay US\$10, therefore, she is left with 190 dollars (\$3,880 Mexican pesos) before conversion at the exchange rate. However, if we consider that the 'remitters' charge a less convenient exchange rate, the \$3,880 Mexican pesos will fall. In this case, suppose that the exchange rate charged by the 'remitter' was 1 dollar = 18 Mexican pesos, then María would receive \$3,420 Mexican pesos. In short, the initial \$4,084 Mexican pesos (\$200 dollars) ends up being \$3,420 Mexican pesos for the recipient.

Once in Mexico, María must find a place to receive the remittance to obtain the cash. In chronological terms, the place where to withdraw the money must be previously arranged between sender and receiver. This is where the great differences in access to the

¹⁹ According to the IMF, World Bank, and Koncept Analytics cited by The Financial Times, the average cost of sending money across international borders is 7 percent. The Financial Times (2019c). "A Radical plan to slash cross-border payments costs...with subscription fees." By Jemima Kelly. October 7, 2019. <https://www.ft.com/content/1ac5ebc3-b3a9-308d-b85e-2f1d7d11811e>



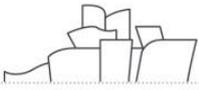
financial system in Mexico appear, considering that the availability of places to pay remittances is quite limited in some places, especially rural zones. Suppose that María, as 63 percent of Mexicans, does not have access to a checking account²⁰, thus, receiving the remittance in a bank account is not an option. Going to an office of the 'remitters' is an alternative, however, it is not always the most desired alternative due to the distance between the receiver's home and the office of the 'remitters'. In Mexico, many receiving families decide to go to agents of the 'remitters' to cash the remittances. These institutions are companies like the firms that operate as agents of the 'remitters' in the United States, that are grocery stores, retail shops, pharmacies, etc. Among these options with greater geographical coverage than the 'remitters', we can mention Elektra, Oxxo, Coppel, Super Farmacia, among others (in some places where there is no bank presence, even Telégrafo de México pays remittances in cash).

In this way, it is very likely that María will go to an Elektra branch near her neighborhood or town to collect the remittance sent by Lucía. Elektra earns a percentage of the commission, but also benefits from reducing cash management costs and customers traffic in stores²¹.

A second option is a worker who has access to a bank account. This option is less representative, but it is still worth mentioning. Let's assume that this case is of a migrant woman in the United States, named Consuelo, who wants to send money to her mother, Isabel. Consuelo can go to her bank branch and send the money to Mexico (bank

²⁰ According to the Global Findex of the World Bank (2017), cited by IDB, IDB Invest and Finnovista (2022, p. 89), there are 304 million women without access to banking accounts in Latin America.

²¹ At this point is worth to note that both Elektra and Coppel were retail companies that sell appliances and goods but then they opened banking-related firms (Banco Azteca and BanCoppel, respectively) that deal with remittances and financial services.

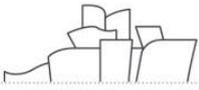


transfer), which is remittance for a banked person. The bank (in the US) will contact another bank (correspondent) to pay Isabel the money in Mexico.

Consuelo could also do everything online using 'remitters': she could use the online services offered by Western Union or MoneyGram, fill out a form and charge the cost of the remittance to her bank account in the United States. As in the first case, the sender faces two costs commission and the cost through the exchange rate. The great advantage in this case is that Consuelo does everything quickly and comfortably through a computer or a smartphone, reducing transactional costs. If Isabel also has a bank account, the remittance will be deposited in the receiver's bank account. At least two banks have participated in this process, the bank in the United States and the bank in Mexico, however, it is highly likely that the bank in the United States had to use a financial intermediary to get the money to the bank in Mexico, these institutions are correspondent banks and 'payer aggregator companies', which we will talk about later.

The new option is to use the financial services related to Fintech. This alternative has two ways of operating: using a 'traditional' bank account linked to the Fintech firm by both the sender and the receiver or using prepaid cards issued by the Fintech themselves instead of 'traditional' banking accounts (a combination of these alternatives can also occur, but we have simplified it to two cases to illustrate this new alternative).

In this case, the situation is quite like the previous case since, in this case there are no prepaid cards, both parties usually have a bank account registered in the smartphone's Fintech 'app' (or on the website of the fintech firm). These payments can be much faster



than remittances sent through 'remitters'²². If the customer prefers the prepaid card option, then the sender can acquire one, deposit cash in it, and then debit the remittance amount to the card. This situation must also deal with the fact that the recipient needs to collect the remittance in some way, therefore, it becomes necessary for the Fintech firm to operate in both countries (probably through correspondent banks).

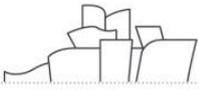
The three options we have detailed here explain how the market works from the point of view of the sender and the beneficiary. Very little is given to us about the journey that the money makes, behind the scenes, when the cash is received at an agent firm and when the transaction is computed at the 'remitter' company so that the money can be processed in the United States, cross the border, be processed by intermediaries, and settled by other agents, banks, 'remitters' or applications on smartphones. The next section discusses the structure of this market and the journey that a remittance takes, that is, a cross-border payment.

2.2.2. A look from the inside: A one-way market structure

Behind the scenes, the market appears highly concentrated with just a few banks involved managing money cross borders. According to one estimate if there are approximately 25,000 banks in the world, only 15 banks manage most of remittances²³. At this point, it is necessary to state what is developed in this section refers to sending money from the United States to Mexico, Central America, and South America, because

²² Normally, the first time a client uses a Fintech, they must pass a personal and banking data authentication process. On that occasion the remittance can take 48 or 72 hours. After that, if everything is in order, remittances are usually more expeditious and available in 1 business day.

²³ Future of Finance (2021). "It's time to fix cross-border payments. Future of Finance Seminar." September 18, 2021.



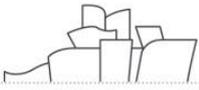
the structure is built in one direction (from US to MX). Sending money from these countries to the United States is much more restricted.

We indicated above that when a remittance was sent through a 'remitter', such as Western Union, using bank accounts to debit and deposit the money, the process probably involved a third institution, a correspondent bank or 'payment aggregator' companies. Within the market, three strata can be identified in the market for remittances and border payments.

The first layer is the simplest form. It is a direct transaction between a 'remitter' and a payer. In this case, MoneyGram can work directly with Oxxo and send the remittance without intermediaries. Of course, MoneyGram uses its bank account to liquidate dollars and to purchase Mexican pesos.

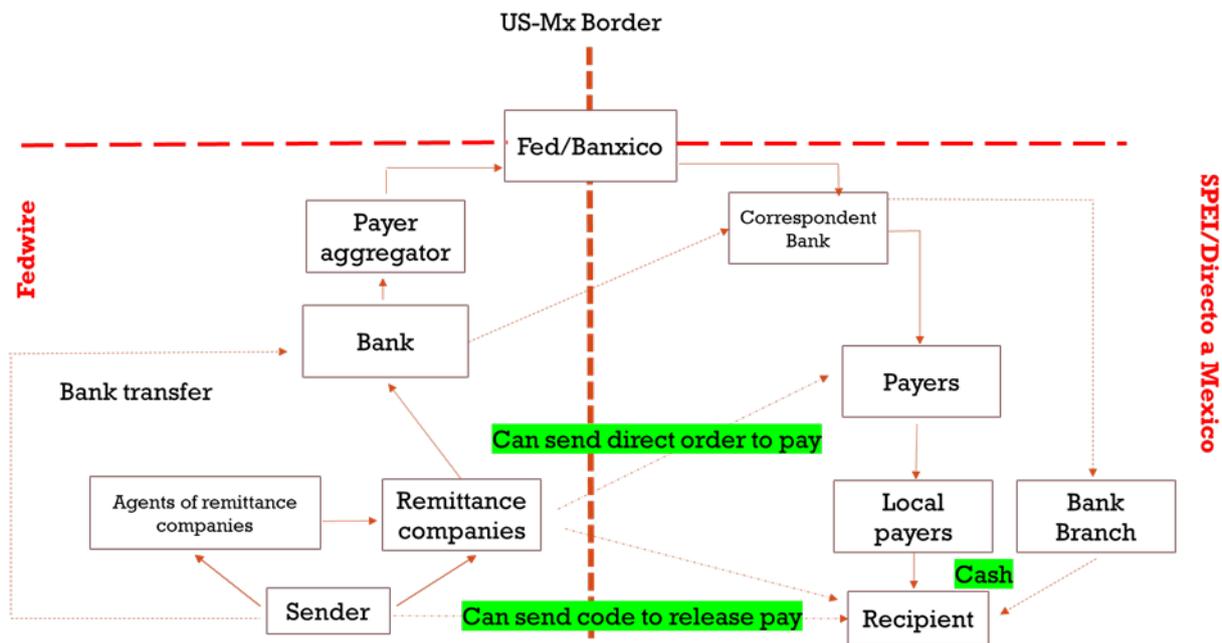
The second layer is essentially the first case, but the participation of a financial intermediary is added, for example, a correspondent bank to send the remittance. For instance, suppose a Californian worker sends a remittance through Western Union charged to their bank account at JP Morgan Bank. In this case, if we assume that Banco Santander México is a correspondent bank of JP Morgan, then the transaction occurs between both parties. The payment of the remittance is given from Western Union to JP Morgan, and then to Banco Santander and finally to a payer (which could be the same bank branch or a local payer like Elektra).

The third layer is more common and, in addition to the correspondent banks, the 'payer aggregator' companies (or 'payment processors') come into action. These firms are the ones that receive the mandate from a 'remitter' in the United States to send the money to the payers in Mexico. For example, one of these companies is TransNetwork which



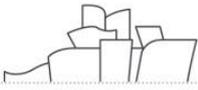
according to its website indicates that it has more than 58,000 paying locations in nine countries²⁴. A large part of its market is Mexico, where it operates by sending money to final payers such as Oxxo, Elektra, Walmart, Super Farmacia, among others, and to correspondent banking for all Central and South America with its commercial links with BanCoppel, Banco Santander, Banco Azul (El Salvador), Bancolombia, Banco Pichincha (Ecuador), among others. Another relevant 'payer aggregator' company is BTS (Bancomer Transfer Services, a former subsidiary of BBVA Bancomer). Therefore, as it might be inferred, correspondent banks are a key player in the market.

Figure 2. Remittance market structure: US-MX corridor



Source: Own elaboration.

²⁴ https://transnetwork.com/TransnetworkSite/collection_points.aspx



The 'remitters' companies such as MoneyGram must prepay every day to the 'payer aggregators', based on estimates of total remittances for one day, an amount in dollars to the 'payer aggregator' so that they can send the money to those who pay in Mexico, such as Elektra or Oxxo²⁵. The latter do not earn as much money with the commission for remittances as they earn with the public traffic in their stores.

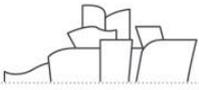
The 'payer aggregator' processes transactions from the 'remitters', check that they comply with the Compliance Controls, and select the transactions for payment of deposit on account, those that are to be paid at the teller window or payment in cash and send them to the different agent payers (i.e., Elektra)²⁶. In general terms, the 'remitters' do not have a direct connection with the banks in all countries, so these firms function as intermediaries. To ensure the necessary amount of foreign currency, the 'payer aggregators' have exchange desks and offer to 'remitters' firms to cover the daily differences in the amount of foreign currency that the 'remitters' acquire to function day to day.

3. WHAT ABOUT FINTECH FIRMS? REMITTANCES, DIGITAL WALLETS, AND CBDC IN AMERICA

In 2014-2015, when the fintech revolution was well settled in Europe and North America but not yet in Latin America (Bátiz-Lazo and González-Correa, 2022), several voices inside the industry started to talk about the frictions in the remittance markets and how

²⁵ If the 'remitters' firms fail in its estimates and is left long/short, the 'payer aggregators' could cover that difference.

²⁶ In Mexico, Elektra is recognized as a well-known popular place to pick up remittances from United States. See The San Diego Union-Tribune (2021). "Remittances have increased sharply since the start of the pandemic, with help from U.S. relief payments." By Wendy Fry. March 10, 2021.

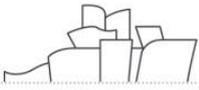


financial technology could change it. Essentially, the diagnosis was the business was not focused on every customer's needs²⁷. The main trouble is that it was (and in some degree still is) difficult for the remitter and for the receiver to always know what stage their payment is at, or what charges will be deducted along the way²⁸. Since a big part of the market is played by correspondent banks, they need to evolve towards a 'customer-centric' model to become 'correspondent banking 3.0' (Casu, and Wandhöfer, 2018).

As it was pointed out in the previous section, the third option considers remittances through Fintech companies. In Latin America from 2017 to date, payments and remittances segment accounts for 25 percent (on average) of the fintech company market, being the largest sector in the industry (IDB, IDB Invest and Finnovista, 2022). One technological solution to the limitations of means of payment and access to bank accounts are fintech 'remitters' and digital wallets that allow money to be kept in the app of a Fintech firm and to operate with it later. This alternative allows users to hold different currencies in his/her wallet and then withdraw the money in the desired currency whenever users deem it appropriate. It can easily be concluded that the Fintech alternative requires internet access, possession of computers/smartphones and knowledge related to apps, smartphones, etc. Most of receivers (and senders) in the US-MX corridor do not usually have technology skills. Besides, if it is not through prepaid cards, then the participants must still have access to the formal banking system.

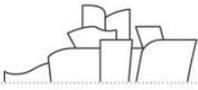
²⁷ Barry, C. and Zaccardi, P. (2015). "Cross-border payments: challenges and trends". Voice of The Industry. The Payers. March 5, 2015. <https://thepayers.com/expert-opinion/cross-border-payments-challenges-and-trends--758933>

²⁸ The Global Treasurer (2014). "Correspondent Banking: Still Here, Still Relevant for Corporates." September 8, 2014. <https://www.theglobaltreasurer.com/2014/09/08/correspondent-banking-still-here-still-relevant-for-corporates/>



It should be noted that many fintech companies offer no-fees to attract new customers, charging exclusively through the exchange rate. While this sounds very attractive and the sender may in principle face a lower cost, this is not guaranteed. It is perfectly possible that the cost of the remittance through the exchange rate is so high that it is higher than an average market commission of 10 dollars and the exchange rate cost of a 'remitter'. Therefore, it is important that customers clearly identify the costs associated with sending remittances and do not end up paying more for falling in the 'no fees' offer. In addition, there are other offers from many fintech companies looking to expand their clientele. A common promotion is to give away an amount of dollars, for example, 15 dollars if a user (referrals) recommends the fintech service to a person who is not a client. When this new client operates with the fintech firm, then 15 dollars are charged in favor of the referral client.

In the 'traditional' remittance market local banks, correspondent banks, 'remitters', 'payer aggregators' had to perform Anti-Money Laundry (AML), KYC, fraud checks, file regulatory reports, and compliance controls during the all the process. This implies several costs in each institution, different management, and sometimes different regulations, because in every single step, payments need to be confirmed and matched (so the money does not get lost in the way among millions of transactions). Fintech can help to reduce the time and monetary costs during the process. In addition, financial technology (fintech) can avoid large investments in infrastructure reducing steps and players between local banks in both countries. For example, Finastra, a London-based fintech company suggests using financial technology to perform AML, KYC, match operations, check fraud, among others and reduce monetary and time costs. Also, this



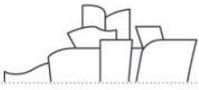
firm put forward to create through fintech a large 'multinational bank' for cross-border payments that would eliminate intermediaries between local banks in both the sender and the receiver countries²⁹.

At the time when the economies advance towards banking most of their population, CBDC seems to have an opportunity to improve the lives of migrant senders and their families in their home country. The Bank for International Settlements (BIS) also suggests exploring the potential role of new payment infrastructure and arrangements. In their view,

“Recent advances in technology and innovation have created the potential for new payment infrastructures and arrangements that could be applied to cross-border payments. So far, these have not been implemented broadly; some are still in their design phase and others remain theoretical. Hence their potential to enhance cross-border payments cannot yet be fully assessed. The building blocks in this focus area are aimed at exploring the potential that new multilateral cross-border payment platforms and arrangements, central bank digital currencies (CBDCs) and so called global “stablecoins” could offer for enhancing cross-border payments. This focus area is more exploratory than the others and is likely to be on a longer trajectory. The potential benefit of the building blocks in this focus area will be enhanced by progressing focus areas A to D (enhance cross-border payments and quality data), which, in addition to enhancing the existing payments ecosystem, will remove barriers to the emergence of new cross-border payment infrastructures and arrangements.”

(BIS, 2020, p. 4).

²⁹ Finastra (2021). “Cross-border payments made simple.” YouTube video. May 27, 2021. <https://www.youtube.com/watch?v=khbGD4QTuCs>

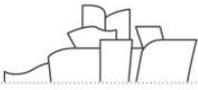


Remittances show a growing trend. Even if we consider that migration flows from Mexico to the United States has a limit in the next decades (Heath, 2012), remote work and internet coverage will increase in the future. Therefore, remittances might continue to increase. There is a current unbanked population living in the US that are not enjoying the benefits from technology changes in payments. Several estimations claim that half of the adult population in Latin America do not have a banking account. It gives enough space to the banking sector and the public sector to serve this population through financial services and digital currency³⁰.

One of the benefits of CBDC is the reduction of costs of 'issuing' bills. Today, most of the remittances are made in cash from the United States and paid in cash in Mexico. Digital currencies have an opportunity to slash issuing (bills) costs for both United States and Mexico but also to reduce transaction costs for final users (i.e., sender and receiver) by disintermediating the current market structure, especially the few banks that concentrated most of the remittances 'behind the scenes.' This is relevant because the main beneficiaries from remittances are low-income economies, where every penny counts. The Financial Times stated correctly "The UN's 2030 sustainable development goals aim to reduce the cost (of cross-border payments) to 3 per cent, but this should be accelerated. Increased competition and new technologies can help. Since remittances now play such a key role in low-income countries, it is important to ensure that not too much ends up in the hands of intermediaries"³¹.

³⁰ Interview participants do not think cryptocurrencies such as Bitcoin as a replacement for cash or CBDC. Remittances are too vital for family economies in Mexico so Mexicans would not prefer a volatile currency that could collapse part of their monthly income use for food, housing, dressing, and health care.

³¹ The Financial Times (2019a). "Record high remittances are not without risks." The Editorial Board. September 2, 2019.



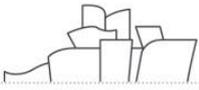
However, if fintech firms and CBDC want to have a chance in the remittance US-MX corridor, they must deal with the large number of unbanked Mexican in United States. Today, fintech firms essentially work with banked customers who trust in bank in both sides of the border, but this is only a small share of the market. On the other hand, a social beneficial CBDC for remittances demanded banked and digitalized individuals operating in the remittances market. The reality is far from there. In addition, fintech must solve the resilience of cash as the king of small payments in Mexico and the issues related to privacy and trust, customers' loyalty³², reliability of institutions, and complaints on financial services. The solution to these problems should be 'good enough' to overtake the rooted traditional, and informal financial services through relatives and friends.

4. CONCLUSIONS

Remittances in the recent years has not been examined enough. Despite remittances have been well studied during the First Globalization era, those works do not focus on the business side. Even works dealing with correspondent banking from economic and business history have paying little attention to late 20th and early 21st century remittances. Thus, we have accounted the first exploration of the remittances market structure and participants in the US-MX corridor from 1990 to 2022.

In this research we found three major trends. First, cash still dominates origination and recipients in remittances. This a critical point in United States where immigrants are paid

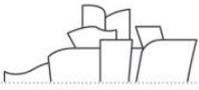
³² Interview participants suggested that remittance payments are used as part of a retail strategy to increase foot traffic (and thus sales) in retail stores. As has been documented by Espinosa-Cristia, Alarcón and Bátiz-Lazo (2022) and Ossandón (2014; 2017), there are opportunities for agents use their contact with clients to increase loyalty of repeat customers. It is unclear whether this is also the case of remittance agents such as Oxxo.



in cash and it is important in Mexico because the high rates of unbanked population. Second, the remittances market is a very competitive one where fintech firms are working in a small segment of mostly banked customers. Nevertheless, cross-border payments are perceived as slower, less reliable, and blurred than domestic payments. Correspondent banks, oligopolist key players in cross-border payments, are being challenged to adopt new financial technology to evolve towards a customer-centric business model to become the 'correspondent banking 3.0'. And finally, as a third result, we found that only BBVA seems to have been successful in promoting digitalization and financial inclusion (through prepaid debit cards). More investigation is needed to examine the process of loyalty and banking in Mexico related to remittances.

On the technological side of the market, financial technology could help to make the process of remittances more unexpensive, thus, contributing to achieve the United Nations' 2030 sustainable development goal aim to reduce the cost of cross-border payments to 3 per cent (today is 7 percent). Fintech also can help to reduce the time and monetary costs during this process. In addition, financial technology can avoid large investments in infrastructure reducing steps and players between local banks in both countries. Nevertheless, more banked and digitalized population is needed. It is not clear if fintech firms have improved the access of former unbanked individuals in Latin America, despite they stated that financial inclusion for people and Small and Medium Enterprises (SMEs) are part of their main goals (Bátiz-Lazo and González-Correa, 2022).

Acknowledgements



We thank Genoveva Roldán, Carlos Esquinca, Manuel Sánchez, Álvaro Rodríguez, Eduardo Levy, Juan José Li, Gabriel Palafox, Jesús Cervantes, Gabriel Manjarrez, and Lino Soberanes for their insights.

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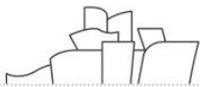
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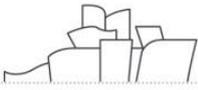
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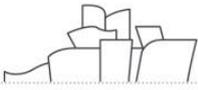
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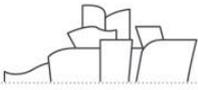
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