



Financial Constraints In The Banking Sector, For Financing In The Transformation Sector And Its Impact On Sustainable Development In Mexico.

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ABSTRACT

In recent years, the Mexican Financial System has had Financial Restrictions in the transformation sector. This research analyzes the various legal reforms enacted during the last two decades, which reflect the various deficiencies in the productive sectors. The primary factors of the credit market are described, among which the deficiency of financing, the scarcity of resources and, above all, the high costs that the transformation sector has to pay for a financial instrument, in which it is intended to modify its methods, stand out. of production and thereby obtain the reduction of different toxic elements such as carbon dioxide, carbon monoxide, arsenic, lead, arsenic, etc., that they emit within their productive activities. It is proposed that worldwide the transformation sector has had a significant impact on the environment, therefore, it is necessary to reduce financial restrictions and especially in the Banking Sector.

JEL classification: G1,G2,G21,G32,G38,L6,Q5

Keywords: Financial markets, sustainable development, financial institutions and services, banking and other institutions, financing policy, public policy and regulation, Environmental economics.

Introduction

The purpose of this research is to analyze in detail how financial constraints, such as lack of sufficient resources, budgetary constraints and difficulties in accessing financing, significantly affect the consumption and investment expenditure of manufacturing companies in Mexico, considering not only their size, but also their sector of economic activity and their geographical location. An analysis is proposed to evaluate how financial constraints affect the financing capacity in the secondary sector in Mexico and its influence on sustainable development. Therefore, the main objective of this research is to analyze the impact of the financial restrictions of the banking sector in relation to financing in this sector that impede sustainable development, during the last 10 years. One of the assumptions is that financial constraints in the banking sector prevent accessible financing for transformation companies that hinders the transition to more sustainable and efficient manufacturing processes in Mexico. In addition, to understand the full scope of the financial impact, the role of bank financing as the main source of credit will also be taken into account, as this may have additional implications on the ability of companies to expand, improve their competitiveness, changes in the production process to obtain sustainable development. Therefore, it seeks to provide a broad and precise view of how financial constraints affect the consumption and investment spending of manufacturing companies in Mexico, with the aim of providing relevant information for decision-making both at the business level and at the level of public policies, in relation to the reduction of greenhouse effects that impede sustainable development in Mexico.

This research has the following structure: in the first section the introduction is specified; in the second section, the Theoretical and Conceptual Framework of the study variables is developed, such as Financial Constraints, the Financial System and the Banking Sector; the third section explains the Importance of Sustainable Development in the Financial Sector; in the fourth section the methodology is developed; The fifth section specifies the conclusions.

2. Theoretical and Conceptual Framework

The Agency theory issued by was one of the first theories where they establish that managers and shareholders can generate financing problems. Financial institutions, concerned about moral hazard and agents' decision-making, may place additional restrictions on financing or require higher requirements, harming firms' ability to access credit; In scenarios of financial constraints, managers may be reluctant to invest in sustainability projects when they do not create immediate returns or improve their personal situation within the company. Barriers to access to credit can sometimes complicate the ability of companies to finance activities that promote sustainable development. Likewise, the Credit Rationing Theory explains the conditions of uncertainty and asymmetry of information, banks do not apply interest rates to balance the supply and demand of credit, it limits credit, that is, it restricts the amount of loans granted, despite whether the loans are willing to pay high interest rates. All this generates financial restrictions for manufacturers that cannot access financing, which slows down production modes and thus the achievement of sustainable development, that is, companies that demand financing for projects based on sustainable development goals, which often require large amounts of initial capital and have long-term returns. They are hampered by lack of access to various bank credits. The Theory of Financial Hierarchy explains that companies have preferences when it comes to financing their investments, first they use internal resources, then they obtain debt and, finally, they issue shares. Financial constraints occur when companies cannot have debt or when the cost of external financing is too expensive, which prevents them from investing in their productive activities, and this theory justifies why many manufacturing companies are inclined to avoid investments in sustainability when they face financial constraints. One of the most important is the Theory of Financial Constraints and Economic Growth by explains that companies currently face financial constraints and have less investment capacity and therefore economic growth. Companies face obstacles, which affect their sustainable development and the expansion of the economy, in addition this theory emphasizes the problem of information asymmetry by developing the impacts on the supply of credit and how they affect the operating and capital expenditures of companies. To access financing, companies increase their deposits and financial agents raise lending rates to penalize the riskiest companies. As a consequence, financing problems arise, as companies face limits on external credit, which depend on the flow of funds available depending on the market and their organizational structure. The Bank Credit and Financial Constraints Theory explains that fluctuations in the availability of bank credit can extend business cycles. Financial constraints increase in times of decline, when banks decrease credit, impacting business investments and thus economic growth. This reflects that financial constraints can negatively influence economic activity at the macro level. The Theory of Incomplete Markets and Sustainable Development explains that financial markets have a significant role in the financial constraints faced by companies, since there are deficiencies in specific financial products for sustainable projects, such as green bonds or long-term loans with preferential rates, which can restrict the demand of companies to finance their activities towards sustainable business models. Currently, banking institutions do not adequately value the long-term benefits of sustainability investments, which leads to underinvestment in these projects. The Financing Gap and Green Growth Theory focuses on the financing gap in small and medium-sized enterprises, which constitute a significant part of economic growth, face difficulties in obtaining financing compared to large companies. These financial constraints make it difficult for SMEs to adopt sustainable practices in their economic activities. The Green Finance Theory refers to green financing, addressing the need to create financial products that allow companies to demand financing for sustainable investments. The objective of this theory is based on the creation of financial and fiscal assets to reduce the cost of capital in projects that respect environmental, social and governance principles. Financial constraints can be reduced through the development of specialized markets for instruments such as green bonds, carbon credits, and other mechanisms for sustainable finance. (Jensen M.C & Meckling, 1976) (Stiglitz, 1981)(Myers, 1984)(Fazzari, 1988)(Bernanke, 1989)(Tirole, 2006)(Beck, 2006)(Flammer, 2021)

2.1. Financial Constraints

In the 1970s, many developing countries, such as Mexico, adopted policies that restricted and controlled the actions of financial intermediaries to determine interest rates and the allocation of loanable funds. The objective of the policies was to ensure low-cost financing for economic agents, particularly industries, which are considered an important factor for economic growth. Interventionist policies are sources of financial repression such as caps on interest rates, high reserve requirements, which inhibit the development of the banking system and thereby reduce the volume and productivity of investment. Financial restrictions have been refuted, such as that it establishes that an increase in the interest rate in the official market cannot increase investment, if the increase in bank deposits crowds out loans in the secondary markets. (McKinnon, 1999)(Wijnbergen, 1983)

Asymmetric information is an essential element for the existence of imperfect competition in the banking sector. When asymmetric information in credit markets is sufficient, it generates a sufficient degree of market power for lenders, which lead to monopoly behavior in the banking system. Representative banks, behaving like a monopoly, have asymmetric information about their own borrower base. A ceiling on interest rates increases the volume of bank deposits, in stark contrast to the ideas of McKinnon and Shaw. It analyzes the different flaws in the financial system and specifies that interest rate ceilings and repressive policies can foster economic development by controlling the banking system. Economic policies are actions implemented by the executive branch, to achieve certain objectives in the economic system, according to these objectives he mentions that they can be full employment, price stability, economic growth, an improvement in the distribution of income, in the sense of making it less unequal and contributing to the achievement of efficiency. However, these policies are aimed at the benefit of a sector, carries out an analysis of the new neoliberal reforms, which it establishes that they are aimed at financial deregulation, since they are only aimed at benefiting certain interest groups. This research analyzes the effects of economic policies to achieve the deepening of the financial sector, whose objective is sustainable development and thereby achieve the benefit of economic agents (government, family and business). In the 1990s, the financial system was liberalized, and some analysts agree that financial globalization has been one of the important factors in the process of reforming in recent years. A precedent of this factor is the North American Free Trade Agreement (NAFTA) in 1994, the government of Mexico had the need to modify fiscal reforms, which benefited private companies, international trade and foreign investment. Economic policies are actions implemented by the executive branch, to achieve certain objectives in the economic system, according to these objectives he mentions that they can be full employment, price stability, economic growth, an improvement in the distribution of income, in the sense of making it less unequal and contributing to the achievement of efficiency. However, these policies are aimed at the benefit of a sector, carries out an analysis of the new neoliberal reforms, which it establishes that they are aimed at financial deregulation, since they are only aimed at benefiting certain interest groups. (Stiglitz, 1994) (Stiglitz, 1994)(Chiña, 2004)(Ballesteros, 2005)(Chiña, 2004)(Ballesteros, 2005)

In Mexico, a series of financial reforms have been implemented that have modified financial activities, such as selective credit policies, liberalization of current and capital accounts, and the development of financial markets. The new financial reforms in Mexico, in a concept of globalization, have led to the strengthening of state financial institutions, aimed at consolidating governance within the Financial System, thus controlling financial activities. carries out an analysis of privatization policies in Latin America where he argues that economic liberalization has generated a strong and central state in the financial area, consolidating a robust financial sector and thus benefiting the banking sector. (Schamis, 2002)

At present, the government must take into account that structural changes, according to ECLAC (2012), aim at economic growth, which is achieved through modifications in the productive structure. This structural change is established in two aspects, the first is the Shumpeterian efficiency where there is an increase in production, with an increase in knowledge and skills towards the economy and society boosting productivity, the second is Keynesian efficiency that refers to the specialization of sectors, benefiting from higher growth rates, on positive effects on production and employment. But unfortunately, neither of these two aspects pursues the new financial reforms stipulated by the federal government. Since the deficiencies of the financial reforms do not allow for this objective, the country needs a reform that does not talk about increasing credit in an impoverished economy but rather needs a reform that breaks with subordination to financial capital.

2.2 Financial System

According to the Ministry, there is a close relationship between the financial sector and its variables and the real sector of the economy. (Levine, 1997)

Functions of the Financial System.

Financial intermediaries aim to allocate resources to the most profitable projects. It sets out the various functions of the financial system and how it can affect economic growth. (Levine, 1997)

According to the main functions of the financial system are: (Levine, 1997)

- Risk reduction
- Allocation of resources with better information.
- Supervise administrators and control companies.
- Mobilization of Savings.
- Facilitate the exchange of goods and services.

Risk reduction: The financial system reduces investment risk for savers through several mechanisms: i) it facilitates the sale of assets, which minimizes risk; ii) it reduces uncertainty, which favors investment in productive assets; (iii) manages credit by assessing borrowers' ability to pay and lending accordingly; (iv) it channels savings into high-yield activities that require capital; v) it adjusts the liquidity needs between credit providers and demanders, allowing savers to access their funds almost immediately.

Efficient allocation of resources through better information: Financial intermediaries have reliable, timely and efficient information. Surplus agents who want to invest need this information to allocate their resources appropriately.

Supervisory supervision and business control: Stock brokers are trained to properly manage debt, which reduces costs for both savers and investors.

Mobilization of savings: Financial intermediaries facilitate the mobilization of resources towards high-profitability projects and productive activities.

Facilitating the exchange of goods and services: By creating widely accepted financial instruments, the system facilitates transactions and the adoption of technologies that improve production processes, thus contributing to economic growth.

After identifying the functions, the financial variables related to economic growth for each function are highlighted, such as:

Depth (related to functions 1, 2 and 4).

Banks (related to functions 1, 2, 3, 4 and 5).

Private credit as a proportion of domestic credit (functions 1, 2, 3 and 4).

Private credit in relation to GDP (functions 1, 2 and 4).

To assess the functioning of the financial system more precisely, four indicators of the level of financial development are analysed

Financial Depth

(Levine, 1997) indicates that this indicator measures the size of financial intermediaries and points to a correlation between real GDP per capita and financial depth. He mentions that financial depth is linked to higher levels of productivity and, consequently, to higher per capita income. In addition, it associates this depth with a more advanced financial structure, which involves the transfer of capital from banks to non-bank financial intermediaries (NBFIs), as well as from these to the stock markets. He argues that the liberalization and modernization of markets encourages financial deepening, which facilitates greater use of financial institutions by economic agents interested in saving, investing, and monetizing the economy. This also allows for the efficient flow of resources between agents and institutions in the long term. With the increase in savings, capital accumulation decreases and the efficiency of investments in productive sectors improves. The total share of deposits to GDP indicates a trend towards financial deepening and reflects an economy's ability to manage the risk associated with lending, which is expected to have a positive impact. The liquidity ratio, measured by M2, is a reliable indicator of banking development, as it reflects economies that depend on indebtedness, where external financing of companies comes mainly from financial intermediation. (Gerald, 2007)(McKinnon, 1973)

Banks

This indicator measures the extent to which the central bank allocates credit compared to commercial banks. It highlights that there is a relationship between the development of banks and economic growth, and explains that an increase in the capitalization of the stock market may be accompanied by an increase in the volume of loans, as financial intermediaries provide complementary services to equity issuers, such as underwriting. Thus, the development of the stock market is usually accompanied by the development of the banking system. According to the Central Bank of Mexico, Article 7 of Chapter III (Law of the Bank of Mexico) establishes that the credit granted may be requested by the federal government, credit institutions and the Institute for the Protection of Bank Savings. Credit is also granted to foreign entities exercising financial functions. Banks, as financial intermediaries, are a crucial source of external funds to finance productive activities. In industrialized countries, bank loans are one of the largest sources of external financing. (Arestis, 2001)

Private credit in relation to domestic credit

McKinnon and Shaw argue that a monetized economy reflects a well-developed capital market, meaning that high monetization is related to economic growth. In this context, financial intermediaries play a key role in the allocation of credit, which is linked to investment and economic growth.

Private credit has an advantage over public credit, as it more accurately reflects the role of financial intermediaries in channelling funds to the private sector. In this sense, financial intermediation should be directly related to investment, its productivity and, ultimately, to economic growth. Private credit shows the relevance of funds destined for the private sector, excluding public credit and credit granted by the central bank. This indicator measures the role of the banking system in financing the productive sector, and its effect on growth will depend on the impact of credit.

Private credit in relation to GDP

Financial systems that direct more credit to private companies tend to investigate and supervise companies more, offer more risk management services, mobilize greater savings, and facilitate more transactions compared to systems that simply channel credit to the state or public companies. The volume of financial credit as a percentage of GDP is a measure of financial development, reflecting banks' liquidity and ability to cope with massive deposit withdrawals. The behavior of banks in terms of granting credit, depending on deposits and their ability to create money, will influence this indicator

2.3 Banking Sector in Mexico

Evolution of the Banking Sector in Mexico.

This section highlights the major changes in banking sector policies since the 1960s, with a focus on the interest rate. Through financial reforms, the Bank of Mexico has sought to foster competition in the banking sector and diversify the financial system. However, the financial system in Mexico has been dominated by the banking sector, despite the implementation of various policies over the years. In recent decades, the structure of the banking sector has been characterized by a lack of competition, with more than 83% of banking assets held by the six largest banks, according to data from the. Banking policies have evolved since the 1990s, expanding the range of products, operations, use of technology, portfolio management and diversification. Table 1 presents the main financial reforms promoted by the authorities. In the first years, the financial authorities regulated bank interest rates and controlled the financial system, with the aim of managing the expansion of credit and allocating it to productive activities, through the creation of financial institutions such as FOMEX (Fund for the Promotion of Exports of Manufactured Products), INFRATUR (Fund for the Promotion of Tourism Infrastructure) and special funds for agricultural financing.(México, 2008)(Turística, 1965)

Other restrictive policies on the banking sector included the imposition of cash rates, the ratio of liquid assets, and exchange controls on capital and current transactions. In 2008, the Foreign Exchange Commission (made up of the Ministry of Finance and Public Credit and the Bank of Mexico) was created to intervene in the foreign exchange market and provide liquidity in the face of sudden movements in the exchange rate.(Público, 2008) In 1982, the banks were nationalized due to a combination of factors such as the sliding exchange rate, the increase in interest rates, devaluations and deficits in the balance of payments. This led to tighter controls on interest rates. At the end of the 80s, a process of gradual financial liberalization began, including the liberalization of interest rates, although regulated by the Regulatory Law of the Public Service of Banking and Credit.(México, 1982)

During the 1990s, the first important steps towards financial liberalization were taken with the enactment of the Credit Institutions Act, which aimed to regulate banking and credit services, as well as the organization of credit institutions. In 1990, the process of banking reprivatization also began, with modifications to articles 28 and 123 that allowed for greater participation by the private and social sectors in bank capital. The financial liberalization program was accompanied by market-oriented reforms and a sustainable monetary policy.(México, 1990)

Although the network of commercial bank branches was expanded, growth was limited: in 1996 23 branches were opened, in 2007, 39; in 2012, 42; and by 2013, there were 46 commercial banking institutions. In recent years, there has been considerable investment in financial infrastructure, including an increase in the number of ATMs, point-of-sale terminals, and credit and debit cards. (México, 2013)

Table no.1 Sequences of Financial Reforms in Mexico from 1960-2023.

Years.	Financial Reforms in Mexico
1962	FOMEX (Fund for the Promotion of Exports of Manufactured Products) to finance exports of manufactured goods.
1965	The Special Fund for Agricultural Financing, established in August 1965, and the Special Fund for Technical Assistance and Guarantee for Agricultural Loans were created
1969	INFRATUR (Fund for the Promotion of Tourism Infrastructure) to finance tourism infrastructure.
1975	The merger of the three regional stock exchanges (Guadalajara, Monterrey, Mexico City, Mexico, Mexico, Mexico,
1976	Creation of Multiple Banks.
1982	The nationalization of the banks took place, it was carried out during the mandate of former President José López Portillo.
1985	The General Law on Auxiliary Credit Organizations and Activities is promulgated in the Official Gazette, during the six-year term of Miguel de la Madrid H. this law will regulate the organization and operation of auxiliary credit organizations.
1987	Indeval was created on August 20, 1987 as a result of the privatization of the Institute for the Deposit of Securities, it operates as a securities depository.
1989	The National Banking and Securities Commission and the National Insurance and Bonding Commission are created as such, through the regulatory law of the Public Banking and Credit Service.
1990	The Law of Credit Institutions came into force on July 18, 1990, promulgated by the then president Carlos Salinas de Gortari.
1990	The Institute for the Protection of Bank Savings is created, its main goals are to establish a system of protection for bank savings.
1990	On July 18, 1990, the Law to Regulate Financial Groups was promulgated, whose objective is to regulate the bases of organization and operation of financial groups; establish the terms under which they will operate.
1991	The savings and loans society is created, modifying the general law of operations and auxiliary credit activities, incorporating the popular savings banks into the Mexican financial system.
1992	The Retirement Savings System is created, granting a pension system to what a worker receives at the end of his or her working life.
1994	The National Commission of Retirement Savings Systems is created, and the law for the coordination of retirement savings systems is published. Its primary objective is to take care of the interests of workers, ensuring an efficient and transparent administration of their savings.
1994	The Credit Bureau is created with the purpose of supporting the country's economic activity by providing companies with information that allows them to be more open to granting credit to their customers.
1998	The Mexder is created, which puts sellers and buyers of derivative instruments in contact on electronic trading platforms.
1998	Bursatec is created, which is dedicated to the design and administration of information technology, as well as providing communication systems for the BMN.
1999	The National Commission for the Protection and Defense of Users of Financial Services is created, whose purpose is the protection and defense of the rights and interests of users of financial services, its objective is to ensure equity in the relations between financial institutions and their customers.

2000	Creation of Valmer, a leading company in the sector of risk measurement and management systems.
2001	The National Savings and Financial Services Bank (BANSEFI) is created to increase credit, savings and investment in popular sectors, through the popular savings and credit law.
2001	The Investment Companies Law was decreed on June 4, 2001, during the six-year term of Vicente Fox Quesada, to regulate the organization and operation of investment companies.
2002	The Payment System Law, enacted on December 12, 2002, is of public order and social interest, whose objective is to promote the proper functioning of the payment systems indicated in the law itself.
2003	The Rural Financial Society replaces the Banking System, the law that governs the rural financial society as a decentralized body of the federal public administration with legal personality and its own assets comes into force.
2004	The Options Market emerges, it is an agreement to buy and sell "contracts" at a specific price and date.
2004	Law on Transparency and Regulation of Financial Services, promotes the use of more efficient means of payment and transparency in the provision of financial services in defense of users.
2005	The Securities Market Law was issued on December 30, 2005, whose objective was and will be to develop the securities market in an equitable, efficient and transparent manner; protect the interests of the investing public; minimize risk; to promote healthy competition.
2006	Multiple Banking presented an increase in its net profit and profitability due to three factors: increase in credit, clean-up of its balance sheet and greater use of banking services by the population.
2008	The Foreign Exchange Commission intervenes in the foreign exchange market.
2008	GBM Casa de Bolsa is created, began operations as a stock market intermediary and offers its own investment funds in all its modalities.
2008	The Bank of Mexico establishes the additional liquidity facility.
2009	The Foreign Exchange Commission asked the International Monetary Fund (IMF) for access to the credit line with a term of one year.
2010	In June 2010, credit from the sofomes for the mortgage and automotive sectors began to decline. Mortgage sofomes were the intermediaries that were most affected by the international crisis in the national financial market.
2011	According to the Bank of Mexico, the most important intermediary continues to be multiple banks.
2014	Financial reform that sought to improve access to credit, encourage competition and promote transparency in the financial sector, as well as strengthen protection for users. The financial system was subject to stricter regulations, aligned with international standards, such as Basel III, in order to strengthen banks.
2018	The Fintech law approved in March 2018 is established, which is supervised by the National Banking and Securities Commission, this law regulates payment and collective financing activities on digital platforms. All financial activity that is carried out with cryptocurrencies must be authorized by the Bank of Mexico.
2019	Strengthening financial inclusion, especially in rural areas and people with lower incomes, promotes policies that promote the use of digital payments and accessible financial services. Digital platforms such as CODI Digital Collections in 2019 are given, which facilitates payments and electronic transfers through QR without additional costs.
2020	Pension reform aimed at improving the conditions of workers at the time of their retirement. The change responds to the need to correct the system of individual contributions that did not guarantee sufficient pensions.
2021	The Outsourcing Reform is established in April, transparency in labor relations and financial commitments related to insurance, pensions and credits.
2022	The Bank of Mexico establishes a monetary policy focused on macroeconomic stabilization, with the aim of controlling inflation through the target interest rate. After the pandemic, Banxico increased interest rates to contain inflation, which impacted the cost of credit and with it economic growth.
2023	The energy reforms established by President Andrés Manuel López Obrador have an impact on the financial system, this energy policy has complicated the financing of projects in the private energy sector.

Source: Own elaboration with data from : , , , , , (Sotelo, 2012) (Carrillo, 2012)(México, Informe anual: Reformas financieras en México., 2012)(Nava, 2016)(México, Reporte de Estabilidad Financiera, 2024)

As can be seen in Table 1, it can be seen that in the 1960s, different funds were created to promote exports, open up to foreign trade, and support for tourism infrastructure. In the 70s the Multiple Banking was created and in the 80s the Banking was nationalized with President López Mateo and with this the organization and operation of the auxiliary credit organizations was regulated. At the end of the 80s, the National Banking and Securities Commission and the National Insurance and Bonding Commission were created. The growth strategy was modified by considerably reducing government intervention and participation in the economy, promoting the opening of the economy to the international market, and giving greater relevance to markets and price mechanisms, in order to achieve a more efficient allocation of resources. In the 1980s, it sought to adjust and stabilize macroeconomic variables, reducing government intervention, promoting market mechanisms, liberalizing the economy, and linking it to international trade (Loría, 2020)(Cabrera, 2015) In the 90s, various commissions and institutions were created with the aim of protecting and defending the rights and interests of users of financial activities. It combined macroeconomic and microeconomic policies, deepening previous reforms by connecting the Mexican economy with the development of the U.S. industrial, commercial, financial, and investment sectors. This approach sought to create a supra-institutionality that, by linking itself to the largest economy in the world, would avoid the erratic decisions of populist governments. In the early 1990s, the flexibilization of foreign investment, the signing of the North American Free Trade Agreement (NAFTA) and the autonomy of the Bank of Mexico were key to the new growth strategy. In the twenty-first century, there were different reforms for digital activities, with the following specific objectives: a) to increase competition in the banking and financial sector to facilitate access to credit for both individuals and entrepreneurs; b) boosting credit through development banking; c) expanding credit through private financial institutions; (d) ensuring a sound and prudent financial system; and (e) improving the effectiveness of financial institutions and the performance of the authorities in this area. (Cabrera, 2015)(República, 2014) Consequently, financial activities do not have a focus on sustainable development.

3. Importance of Sustainable Development in the Financial Sector

Climate change has become one of the most significant challenges facing humanity, as it aggravates multiple environmental, social and economic problems globally. In this context, 2015 was crucial for the international community due to the emergence of two international agreements of great relevance: the 2030 Agenda for Sustainable Development and the Paris Agreement, to which Mexico is a signatory. These agreements underscore the importance of charting a path towards the resolution of global development-related problems, involving all sectors and actors, both national and international. In addition, the need to redirect public and private resources towards initiatives that address climate change, reduce social inequalities and transform economies was highlighted. (SHCP, 2023)

The objective is to increase investment in projects and economic activities that support the fulfillment of Mexico's environmental and social objectives, in addition to its international commitments in sustainability. The different reforms will allow access to reliable and updated information, promoting the mobilization of capital towards sustainable activities and minimizing the risk of greenwashing practices. All countries face major social and environmental challenges that need to be addressed urgently. Overcoming these challenges requires the mobilization of considerable investments, both public and private, in order to promote a transformation towards sustainable economic development. This implies that investment decisions must prioritize people's well-being while generating benefits for ecosystems and biodiversity. The Ministry of Finance and Public Credit (SHCP), as the leader of the sustainable finance agenda in Mexico, promotes actions to incorporate sustainability and the impacts of climate change into the country's short- and long-term financial decisions. Its objective is to ensure that financial services, products and processes contribute, directly or indirectly, to the fulfilment of the Sustainable Development Goals (SDGs) of the 2030 Agenda and the Paris Agreement. Among the efforts of the SHCP are the alignment of the Expenditure Budget of the Federation with the SDGs and the creation of the SDG Sovereign Bond Framework, making Mexico the first country to issue these instruments. These initiatives, together with the development of Mexico's Sustainable Taxonomy, are part of the Secretariat's strategy to mobilize and redirect investment flows towards sustainable projects. Climate change is one of the biggest challenges facing humanity today, as it aggravates various environmental, social and economic problems at a global level. In this context, 2015 was crucial for the international community, as two agreements of great relevance and impact emerged: the 2030 Agenda for Sustainable Development and the Paris Agreement, to which Mexico is a signatory. Both agreements underscore the importance of establishing a roadmap to solve global development-related problems, involving the active participation of all sectors, both national and international. In addition, the urgency of redirecting public and private resources towards actions that address climate change, reduce social inequalities and transform economies was highlighted. (SHCP, 2023)(SHCP, 2023) (SHCP, 2023)

Just as the Ministry of Finance and Public Credit at the Bank of Mexico with its report establishes the performance of the Mexican financial markets, it is due to the fact that Mexico has stood out among other emerging economies for the robustness of its macroeconomic fundamentals. These fundamentals have been based on monetary and fiscal policies that have contributed to maintaining low and stable inflation, a sustainable public debt-to-GDP ratio, and stability in the external accounts. In addition, a flexible exchange rate regime and economic policies characterized by transparency, predictability and coherence have also been key factors in this achievement. (Banxico, 2013)

In the 2021 report, the economic and financial impacts related to climate change may cause significant losses in the future for financial institutions and represent a risk to the financial system as a whole, this edition of the Report expands on the analysis that the Bank of Mexico has been conducting on environmental risks and sustainable financial assets since 2018. In this context, the Bank is developing a framework for conducting a scenario analysis that explicitly considers both the physical risks and the transition risks associated with climate change. (Banxico, 2021)

In the 2022 report, the Bank of Mexico has been reporting on environmental risks and sustainable financial assets. In particular, a scenario analysis has been carried out that specifically takes into account the impact of physical risks related to climate change. (Banxico, 2022)

The Bank of Mexico is one of the institutions that have participation for sustainable development, its objective is to promote the participants of the financial system to recognize and manage the economic and financial impact associated with the physical risks of climate change, since these risks could threaten the stability of the system as a whole. . The analysis reveals that banks with poorly diversified credit portfolios and exposed to climate issues such as heatwaves, droughts and tropical cyclones are more vulnerable to liquidity risks. In addition, the Report includes the results of stress tests designed to assess the resilience of the banking system in the face of extreme hydrometeorological events, in particular hurricanes of similar magnitude to the worst on record recently. The results indicate that, although the impacts are not minor, they do not represent a significant threat to the solvency of banks. . This exercise also estimates the potential additional losses in the event of macro-financial and climate shocks occurring simultaneously. In relation to sustainable financial assets, it can be seen that, in the first three months of 2024, the issuance of thematic bonds by national issuers, both private and public, exceeded that recorded in the same period of 2023. . Finally, to contribute to the continuous improvement of the regulatory framework and ensure its robustness and updating, the Bank of

Mexico has implemented measures related to repo transactions, derivatives, reference rates, provision of liquidity to banks, sustainable financial assets and assistance for those affected by Hurricane Otis. The Bank will continue to monitor the evolution of risks and vulnerabilities that could affect financial stability and will take measures to mitigate them, maintaining the stability of the financial system and the proper functioning of payment systems, in compliance with the legal framework and in coordination with other financial authorities. (Banxico, 2024) (Banxico, 2024)(Banxico, 2024) (Banxico, 2024)

The Bank of Mexico, in its role as financial agent of the Federal Government and with the purpose of complying with the Sustainable Development Goals of the 2030 Agenda approved by the UN General Assembly, as well as promoting sustainable investments in the country, modified the "Rules for the exchange of government securities". These modifications allow the inclusion of debt instruments issued by the Federal Government, such as BONDES G and MS bonds, denominated in national currency and with fixed and variable interest rates, which comply with environmental, social and governance (ESG) criteria, so that they can be subject to swap operations. In addition, in line with the measures granted by the CNBV to financial institutions to support those affected by Hurricane Otis, the Bank of Mexico extended until October 31, 2024 the suspension of the collection of the minimum payment from customers residing in the affected areas. (Banxico, Reporte de Estabilidad Financiera, 2024)

It is important for companies to adopt adaptation and mitigation practices, which involves implementing measures such as efficient water use, the development of cleaner and more sustainable technologies, diversification of supply sources, and continuous assessment of climate risks within the organization. These actions help reduce your financial vulnerability. However, they can sometimes require a significant investment. It is therefore essential that the financial system plays a key role in the provision of credit, especially to facilitate this type of investment in small and medium-sized enterprises (SMEs). (Banxico, Reporte de Estabilidad Financiera, 2024)

The Committee on Sustainable Finance (CFS), under the Financial System Stability Board, continued its sessions during the first half of 2024. In addition, the working groups created by the Committee continued to develop assessments, proposals, recommendations, and training on topics such as sustainable taxonomy and the integration of environmental and social risks into the decision-making of authorities and institutions. This was achieved through scenario analysis, mobilization of sustainable financing, and disclosure of environmental, social, and corporate governance factors by issuing companies and financial institutions. The Mexican Council for Financial Reporting and Sustainability Standards (CINIF) is the body responsible for issuing Financial Reporting Standards (NIF) in Mexico. These rules are aimed at entities that are not of public interest, that is, companies that are not listed on the stock exchange and that are not banks, Afores, insurance companies, among others. On 13 May 2024, the CINIF published its first two sustainability-related NIFs. (Banxico, Reporte de Estabilidad Financiera, 2024)

4. Methodology

4.1 Basel III and the impact of loans to productive sectors to obtain sustainable development.

Basel III is a set of international measures designed to strengthen, regulate and supervise risks in the banking system globally. Its focus is on addressing economic and financial issues on an international scale. In Mexico, the Bank of Mexico (Banxico) fulfills a similar function, focusing on promoting healthy practices in the payment system of the Mexican financial system (SFM), fostering market discipline, ensuring compliance with good banking practices and guaranteeing financial transparency, among other aspects. Basel III states that the solvency of institutions indicates that risk management is aligned with: i) the defined risk profile, ii) the business strategy, iii) the growth objectives, and iv) the fulfillment of their financial obligations and commercial commitments. Therefore, it is not considered necessary to implement a capital restitution plan. The Regulatory Consistency Assessment Program (RCAP) is an initiative of the Basel Committee on Banking Supervision (BCBS) to evaluate the way in which the standards issued by the Committee are implemented in the various jurisdictions. The Large Exposures (GE) regulation imposes a limit on the concentration of financing transactions granted to a single counterparty or to a group of related counterparties, in accordance with the definitions established in said regulation. Its purpose is to restrict the maximum loss that a bank could suffer in the event that a counterparty or group of connected counterparties fails to meet its obligations. (Martínez, 2019) (Financiero, 2022)(Banxico, Reporte de Estabilidad Financiera, 2024)

The Basel Committee on Banking Supervision (BCB) launched a consultation on a climate-related financial risk disclosure framework in November 2023, open until March 2024. The objective is to gather views on the relevance, feasibility and characteristics of the framework, as well as the prudential metrics that would best support the BCB's mandate, especially with regard to Pillar 3, which focuses on market discipline and the disclosure of key information. The consultation covers both qualitative and quantitative requirements. In terms of qualitative information, the BCB seeks views on disclosure in four areas: (i) governance, (ii) strategy, (iii) risk management, and (iv) management of concentration risk related to climate risks. (Banxico, Reporte de Estabilidad Financiera, 2024) (Banxico, Reporte de Estabilidad Financiera, 2024)

Regarding the quantitative requirements, three key points are proposed: (Banxico, Reporte de Estabilidad Financiera, 2024) *Exposure by sector*: It asks whether banks should disclose their exposures to non-financial corporations according to standardized sectors of economic activity. *Financed emissions*: It raises the question

of whether banks should disclose the financed emissions of their debtors, which would allow their exposure to climate transition risk to be assessed. *Exposures subject to physical risk by region:* It is proposed that banks disclose their exposures by geographic location to better understand their risk profile in the face of physical weather events.

4.2 Analysis of banking policies that limit or encourage financing for the processing sector.

The financial system plays a fundamental role in the creation of savings and in their proper management to finance investments, promote technological innovation and offer access to financing to various economic agents, especially small and medium-sized enterprises (SMEs). To establish a financial system that promotes productive development and structural change, it is essential to implement financial inclusion policies.

The term "financial inclusion" was first introduced in 2003 by Kofi Annan and then taken up in 2004 by the UK government through a budget report that sought to promote this concept, initially focusing on access to financial services. Currently, there is no consensus definition of financial inclusion, which complicates its measurement. In response to this, the definitions of the World Bank (WB) and the International Monetary Fund (IMF) have been adopted, which have worked to promote it. The World Bank defines financial inclusion as the proportion of individuals and companies that use financial products and services, as well as their usefulness and affordability, focusing on the dimension of the use or demand for financial products. For its part, the IMF describes financial inclusion as the accessibility and use of financial services and products. It can be mentioned that one of the policies can be financial inclusion, which aims to use the financial system as a tool to increase savings and consumption opportunities, while optimizing the use of entrepreneurial talents and opening up new investment opportunities. In this way, financial inclusion allows the financial system to meet the diverse and varied financing needs of companies throughout the different phases of the production and technological process. Also (Roa, 2013) (Barajas, 2020) (Espinosa-Vega, 2020) **financial inclusion** It not only covers the levels of financial access and banking penetration, but also policies designed to improve and optimize the use of the financial system by SMEs and households that are already integrated into the formal financial circuit. **Financial inclusion** it should be understood as a strategy to promote productive integration. This implies using the financial system to expand people's savings and consumption opportunities, while optimizing the use of entrepreneurial talent and facilitating access to investment opportunities. Financial inclusion allows the financial system to meet the varied financing needs of households throughout their life cycle and of companies in the different phases of the production and technological process. (Caldentey, 2018) The protocol offers a route to understand and mitigate the negative effects of financial constraints on the financing of the transformation sector in Mexico. Through tight policies and new incentives, it is possible to balance the stability of the banking sector with the financing needed to drive more sustainable industrial development aligned with the Sustainable Development Goals (SDGs). In the National Development Plan, the government of Mexico is determined to promote sustainable development, which has now become a crucial element for well-being. This concept is defined as meeting current needs without compromising the ability of future generations to meet theirs. This approach encompasses ethical, social, environmental and economic mandates that must be implemented now to ensure a viable and balanced future. Ignoring this principle not only creates immediate imbalances, but also represents a serious infringement on the rights of future generations. Therefore, the Federal Executive will always evaluate the impact of its policies and programs on the social fabric, the environment, and the political and economic spheres of the country. In addition, it will be guided by a vision of development that corrects social injustices and promotes economic growth without harming social peace, solidarity, cultural diversity or the natural environment. (DESARROLLO, 2019)

4.3 Financing difficulties of small and medium-sized enterprises

Entrepreneurs have access to various sources of financing for their operations, such as development banking, commercial banking, microcredit, and development funds from government entities. However, Small and Medium-sized Enterprises (SMEs) face financial challenges related to their low capitalization and difficulty in accessing capital markets directly. The main constraints to obtaining external funding are: *Rationing in the credit market:* This problem arises due to conflicts between SMEs and lenders, such as: (a) proprietary information, (b) limited liability to creditors, and (c) asymmetry of information on the results of investment projects. *Rationing in the capital market of shares:* The order of preference theory indicates that entrepreneurs prefer to use their own resources before resorting to external financing, such as the issuance of shares, which they consider as a last resort. This preference is partly due to the lack of appropriate instruments for SMEs and the fear of losing control with the entry of new partners. (Cazorla, 2008)

Other difficulties that stand out are the rationing of credit can limit the investments necessary to expand productive capacity or implement innovations, and in extreme cases, it can even lead to the closure of companies. In addition, the lack of development in venture capital industries and in financing mechanisms for start-ups decreases the rate of creation of new companies and reduces the presence of dynamic companies in the economy. (Ferraro, 2011)

The main reason why SMEs in Mexico face difficulties in accessing credit is high interest rates. Secondly, there is the reluctance of banks, and thirdly, economic uncertainty. In this context, they establish that in some, the main barrier to access to financing by SMEs is the interest rate, followed by bureaucratic procedures and,

thirdly, by the required guarantees. They also found that the companies that managed to obtain a bank loan are generally mature (more than 10 years old) and medium-sized (with between 51 and 250 employees). (Gómez, 2009)

Similarly, they determined that, in the state of Querétaro, the main restrictions to access financing are, firstly, not complying with the requested requirements, secondly, high interest rates, and thirdly, the perception that the bank will not grant the financing. (Saavedra, 2012)

Conclusions

It is observed that financial restrictions in the various productive sectors limit sustainable development, by hindering investment in technological innovation to reduce environmental impact and maximize the efficiency of production processes. These factors can slow progress toward cleaner, more sustainable industries. Overcoming barriers through various types of financing, reforms and public policies are important for sustainable development with environmental protection and public and social responsibility.

Finance is an important factor in obtaining and developing a sustainable economy, The financial sector can drive the transition to a low-carbon economy by financing sustainable projects, despite this, integrating sustainability into finance remains a significant challenge. In recent years, there has been a notable increase in academic studies on sustainable finance, reflecting the growing interest in this topic. However, research remains fragmented, complicating the identification of the characteristics that differentiate this field from traditional investing. Although investments that consider ESG (environmental, social, and governance) factors seek to generate positive impacts, there is still no conclusive evidence that these portfolios outperform traditional investments. This highlights the need for a more unified classification framework for sustainable finance.

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