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The Impact of COVID-19 on the Price Performance of Real Estate Investment Trusts (REITs) in Mexico

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Abstract

Real Estate Investment Trusts (REITs) are companies that own or finance income-producing real estate in a range of property sectors. REITs were created in México in 2011, they have become instruments for small and large investors to attract funds to the stock market in order to invest in real estate, such as office buildings, shopping malls, industrial warehouses and hotels, among other properties, in order to produce rental income. In just nine years of operations, the fifteen public-listed REITs in the Mexican stock market account for more than two thousand properties, with an area of 25 million square meters and 20 thousand hotel rooms, with accumulated assets of $25 billion US dollars and account for one-fifth of GDP of the country´s real estate sector. However, the pandemic effects have affected REITs revenue, particularly properties like office buildings, shopping malls and hotels. In Mexico, the first confirmed infection case of COVID-19 occurred on 27 February 2020. The increase of infected people and the presence of the first fatalities due to the virus, forced the Mexican government to establish voluntary confinement to contain the spread of the virus on 20 March 2020. In April, the suspension of non-essential activities in the country began for a 3-month period. The Mexican economy was severely affected by confinement, activity suspensions, global economic recession, and dropping oil prices. In April and May alone, 12 million jobs were lost in the formal and informal sectors and the activities that performed the worst in this period were tourism services, that decreased in April 70.4% and in May 72.1%, construction fell 38.4% and 35.9%, manufacturing had a loss of 35.6% in both months. The retail and wholesale trade sectors, transport and recreational services fell by around 30% in all cases and foreign trade declined 35.8% in April and 52.0% in May. These measures also had an important effect on the prices of the REITs Certificates. The REITs index fell 36.7%, between 28 February and 23 March 2020, just three weeks after the first contagion was announced, while the Certificate prices of most REITs had also an unfavorable performance in the same period, with declines of between 8% and 42%. On the last day of June 2020, four REITs performed negatively with percentages greater than 30% and the REITs Index was below 19.5% compared to December 2019. Properties generating higher people concentrations (shopping malls, stadiums, theaters, concert halls and hotels) will be the most affected in this crisis and will be forced to implement innovative schemes to operate in order to generate earnings in the future. The article studies the impact of COVID-19 in the price of REITs Certificates, as the effect in the value of the REITs Index in the Mexican Stock Market. The price of the different REITs stocks and Index are compared to their price at the end of 2019 and an estimate of the future impact in the results of operations of the corresponding REITs. An analysis of the geography of COVID-19 in Mexico is performed, considering how the different sectors where the REITs properties are geographically located in order to look for a possible evidence of COVID-19 effect.

Keywords: COVID-19, Real Estate Investment Trust (REIT) in Mexico, financial performance, stock market

1.0 INTRODUCTION

At the end of 2019, Mexico's GDP reached USD 1,258 billion dollars, resulting in the 16th largest economy of the world, according to the World Bank (World Bank, 2020). From this GDP, the construction sector contributed with 7.2% or US 90,707 million dollar; construction of commercial buildings was the largest part of the sector accounting for 5.0% of the country´s total GDP for an amount of US $63,544 million dollars. The real estate sector, with 9.4% of the wealth generation of the country, represented US $118,825 million dollars (INEGI, 2020a).

Real estate and the construction sectors are closely related. Together, they represent an important part of the national GDP, as they oversee the design, project, construction, administration, sale and rent of housing, office buildings, industrial parks, malls, hospitals and hotels among other constructions. Traditionally, those real estate properties were financed through investment of the companies' shareholders, through external bank loans, or by issuing debt or in some cases, equity in the stock markets.

As a result of the funding requirements of the real estate sector, and in order to build in different regions of Mexico, real estate investment trusts (REITs or FIBRAs in Mexico) were first issued in March 2011. They are based in the REITs created in 1960 in the USA (NAREIT, 2020). From the start, Mexican REITs have been an attractive investment as they are linked to an increasing number of economic activities related to the construction of different kinds of properties such as housing, shopping malls, industrial parks, offices, and hotel facilities. They also have fiscal benefits and a higher liquidity compared to other investments.

Mexican REITs became in a very short time in financial instruments that attract funds to the stock market to invest in the acquisition of properties that generate capital gains and rental income in sectors such as office space, hotels, shopping centers, industrial warehouses, hospitals and educational facilities.

In 2019, REITs Certificates achieved an average of 13.3% increase in price and an average distribution of 7.3%, which is equivalent to a total annual return of 20.6% per certificate. The increase of the S&P/BMV-REITs Index was the highest in the history for this indicator with an increase of 31.5% in 2019. Over nine years, this indicator has had an increase in price of 153.15%, which is equivalent to a CAGR (Cumulative Annual Growth Rate) 10.9%, profit five times higher than the price index and quotes of the Mexican Stock Exchange in the same period. REITs consolidation in such a short time was due to three factors: the growth in foreign trade in the country, the increase of construction in productive building and low interest rates. Currently, fifteen REITs manage almost 2 thousand properties with a net area of 25 million square meters and 20 thousand hotel rooms. The value of real estate total assets is more than US 25 billion, a figure representing one-fifth of the GDP of the country's real estate sector. In addition, the Mexican REITs market capitalization totaled $16.2 billion at the end of 2019, although 85% of this capitalization was concentrated in the six largest trusts.

The year 2020 began with good economic prospects for the country and real estate sector linked to foreign trade with the ratification of the United States-Mexico-Canada Agreement (USMCA). The REITs index reached its all-time high on January 17 with 265 points, maintaining values above 250 close points until the end of February when the first confirmed case of COVID-19 was presented, and a month later, the number of infected cases had a large increase, which forced the Mexican government to set a voluntary confinement of the population and the suspension of non-essential activities.

The pandemic and the measures of social isolation, confinement and business closures adopted in the country to reduce the contagion of COVID-19 severely affected the Mexican economy. They had an important effect on the prices of the REITs Certificates. The S&P/BMV-REITs index fell 36.7%, between 28 February and 23 March 2020, just three weeks after the first contagion was announced, while the Certificate prices of most REITs had also an unfavorable performance in the same period, with declines of between 8% and 42%. On the last day of June 2020, twelve REITs performed negatively with percentages greater than 30% in four cases and the REITs Index was below 19.5% compared to December 2019. Also, the market capitalization of the Mexican REITs decreased in value by 24.5% at the end of March and by the end of June they were still down by 21.2%, both values compared to December 2019.

This paper reflects the effects of the lockdown and the suspension of activities in the price of REITs Certificates. This article presents the price of the public listed REITs in the Mexican Stock Exchange as of December 2019, comparing the numbers to the price performance of the Certificates during the most critical times of the lockdown due to the COVID-19.

2.0 LITERATURE REVIEW

2.1 Evolution of COVID-19

In December 2019, the city of Wuhan in China became the center of an outbreak of pneumonia of unknown cause, which attracted the attention of the Chinese government and the interest of the international community. The first case was on 1 December 2019 and there was no increase in patients until around 20 December 2019, with the first alert reported on 30 December 2019; two-thirds of the 41 initial cases had been localized at a Wuhan seafood and animal market, closed on 1 January 2020 (Frieden, 2020). By 7 January 2020, Chinese scientists had isolated a new coronavirus and called it 2019-nCoV or COVID-19. After 13 January 2020, the first cases were reported outside China, in Thailand, Japan, Korea, the United States, Vietnam and Singapore, as well as in other regions of the world. On 24 January 2020, there were 835 cases reported in China (549 in Hubei Province and 286 in 31 other regions), of which 25 died and 93% were hospitalized (Wang et al., 2020). Figure 3 shows the chronology of the early stages of COVID-19.

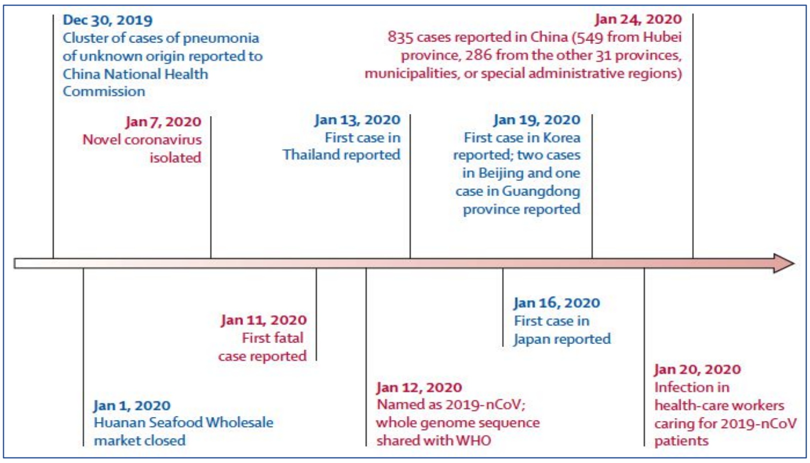
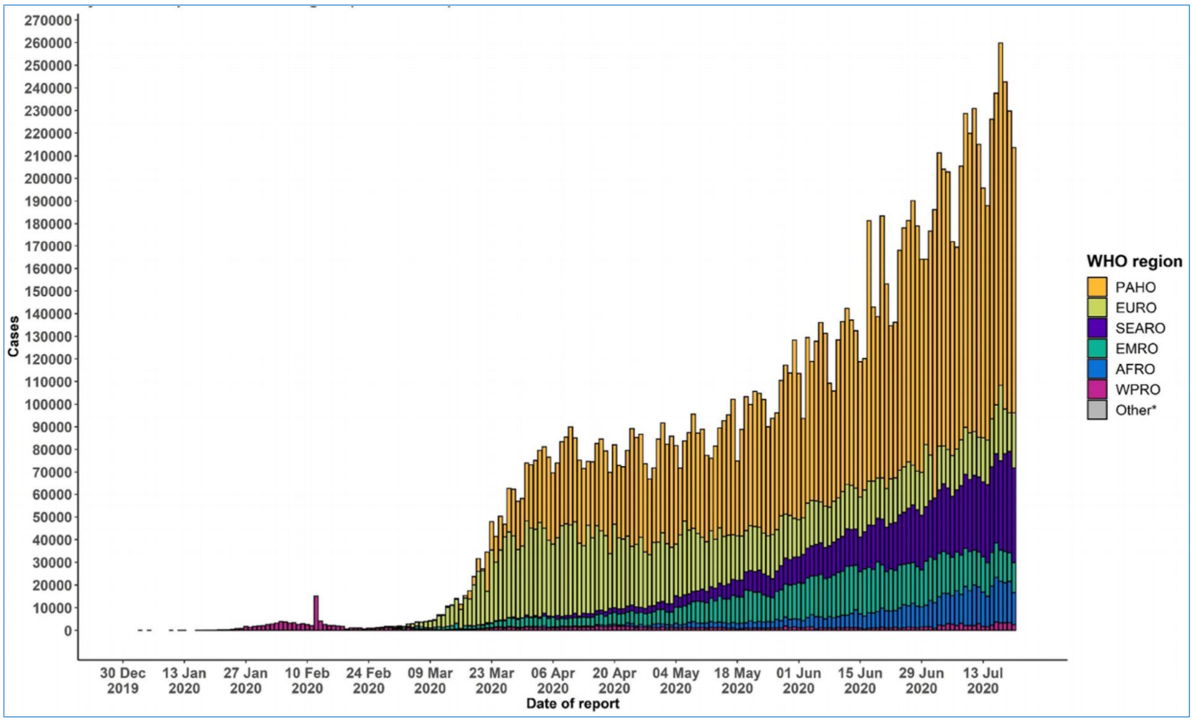


Figure 1 Timeline of early stages of COVID-19 outbreak

Coronaviruses are wrapped RNA viruses that are widely distributed among humans, mammals and birds, and can cause respiratory, liver and neurological diseases. There are several species of coronavirus, some causing diseases with common cold symptoms in relatively immune individuals. However, in recent times, species with more severe effects have been discovered in humans such as cases of Severe Acute Respiratory Syndrome (SARS-CoV), which was identified in November 2002 in Guangdong Province, China and Middle East Respiratory Syndrome (MERS-CoV) coronavirus, which originated in June 2012 in Jeddah, Saudi Arabia (Zhu et al., 2020). SARS-CoV infected 8,096 people with a mortality rate of 10% and MERS-CoV affected 2,494 people with a 37% fatality rate, while COVID-19 has a mortality rate of 4.3% (WHO, 2020) as of June 2020.

The three coronaviruses produce similar symptoms such as fever, cough, diarrhea and sore throat, to varying degrees of severity. The characteristics that differentiate them the most are the mortality rate, more severe in the case of MERS-CoV, and the higher rate of contagion (R0) in COVID-19, estimated in the first studies. In addition, those infected with SARS-CoV and MERS-CoV almost always had symptoms before becoming contagious, and sick people could be isolated before infecting others, while people infected with COVID-19 not always had symptoms before becoming contagious and many mild patients could not be detected, which caused this virus to be the most widespread in history (Zhu et al., 2020).

The alarming increase in confirmed COVID-19 cases in the city of Wuhan led the Chinese government to establish strict confinement of the city and Hubei province, while the coronavirus extended first to countries near China and then to several countries in Europe, the United States and Canada. The peak of new daily cases of COVID-19 in the countries grouped in the West Pacific region, and most importantly in China, occurred on 12 February 2020 with more than 10,000 infected people. Afterwards, the focus of the pandemic shifted to Europe, with the highest new cases per day in Italy, Spain, France, the United Kingdom and Germany during March and April. Since then, the largest number of contagions have been concentrated in the Americas, with the United States, Brazil, Peru, Chile and Mexico topping the continent's list of infected people. As of 21 July 2020, the number of new cases per day exceeded 213 thousand infected, of which the American continent had 55%, Southeast Asia 20% and Europe 11%, while the cumulative number of infected reached 14.6 million and 608 thousand deaths (WHO, 2020). Figure 2 shows the daily evolution of the pandemic in the period from 30 December 2019 to 21 July 2020 for the different regions in which the World Health Organization (WHO) is divided.



* PAHO: America; EURO: Europe; EMRO: Eastern Mediterranean; SEARO: South East Asia; AFRO: Africa; WPRO: Western Pacific

Figure 2 Number of confirmed COVID-19 cases by date and region
(Source: WHO, 2020)

When the first confirmed case of COVID-19 was filed in Mexico on 27 February 2020, the world had a two-month head start, with those affected in almost fifty countries, more than 80 thousand confirmed cases and nearly 3,000 deaths. However, the country did not take into account the measures used at the beginning of the pandemic in Southeast Asian countries, such as South Korea, Japan, Taiwan, Singapore or Hong Kong, places where follow-up actions were implemented to infected people, strict confinement, use of masks and controls of entry into the country, among others. It was decided to apply the model called Sentinel[1] which originated from the experience of the 2009 influenza AH1N1 pandemic, whose outbreak was precisely Mexico. The purpose of this model is to move from intensified national surveillance to targeted or Sentinel surveillance.

The Sentinel model was not created to control the pandemic in the country. The spring break school holidays were used to camouflage a confinement as from 20 March 2020, however, when confirmed cases and deaths accelerated over the next ten days, the national emergency and suspension of non-essential activities, that would last only one month, were decreed. The lack of control of the pandemic led to the closing of all schools and universities, the initiation of an online academic modality as well as the extension of the suspension of industrial, commercial and tourism activities. Although confinement was always voluntary and only the suspension of activities of established companies was forced, the activities of the informal economy, on which almost half of the population depends, continued to operate on a smaller scale.

Many actions undertaken by the Mexican authorities have become detrimental to contagion containment. The list is long, but three have been especially harmful: the continuous disqualification of simple but effective preventive measures such as the use of masks, the repeated misinformation by suggesting that asymptomatic carriers of the virus cannot infect others, and the insistence on the idea that performing mass diagnostic tests has no efficacy. A renowned Mexican scientist, Laurie Ann Ximénez-Fyvie states, *"Coronavirus will not disappear spontaneously, nor there is a vaccine or effective treatment against the disease it causes. The implementation of vigorous and effective containment measures is required, through the conduct of mass diagnostic tests and the tracking of cases and contagions, the authorities must adjust the strategy"* (Ximénez-Fyvie, 2020).

Table 1 shows the chronological comparison of the most relevant events of COVID-19 in the World and Mexico, which observes on the one hand the measures taken by the World Health Organization (WHO, 2020) and the statistics of the pandemic worldwide and on the other hand, the relevant events and statistics related to COVID-19 in Mexico.

Table 1 Timeline of relevant COVID-19 events in the World and Mexico
(Source: El Financiero, 2020; El Universal, 2020; WHO, 2020)

Date	World				México		
	World Health Organization WHO	Affected countries	Confirmed Cases	Deaths	Federal Government	Confirmed cases	Deaths
Dec 31, 2019	Pneumonia of unknown origin announced in China	1	27	-	-	-	-
Jan 21, 2020	Refuses to declare international emergency	4	314	6	-	-	-
Jan 30, 2020	Declares epidemic *"International public health emergency"*	18	7,818	170	-	-	-
Feb 11, 2020	Rate the epidemic as public enemy number one	24	43,103	1,017	-	-	-
Feb 27, 2020	Recommends suspending classes and mass events	46	82,294	2,804	First confirmed case of COVID-19	1	-
Mar 11, 2020	Declare COVID-19 a pandemic	113	118,319	4,292	-	11	-
Mar 18, 2020	Establishes a *Risk Guide and Community Participation*	162	191,127	7,807	First person dead by COVID-19	118	1
Mar 20, 2020	Publishes a *Global Surveillance Guide by COVID-19*	174	266.073	11,183	Suspension of classes until April 20.	203	1
Mar 30, 2020	Updated the *Country Aid Guide to Maintaining Health Services*	206	693.282	33,106	Health emergency as of April 30., non-essential activities are suspended	1,094	28
Apr 20, 2020	Publishes report on the use of nonsteroidal anti-inflammatory	208	2,314,621	157,847	Establishes online education and suspension of non-essential activities by May 30.	8,772	712
June 1, 2020	It points to the urgency of obtaining a COVID-19 vaccine	210	6.057,853	371,166	Initiate non-essential activities according to epidemiological risk traffic light	93.435	10,167
July 8, 2020	Reports 100,000 cases per day for COVID-19 in America	215	11,669,259	539,906	Shopping centers activities began with restricted operating times and number of clients	275.003	32,796

In 2020 pandemic, the information is richer and difuses rapidly, the cross border flows of goods in modern economies driven of years of falling of communication, tariffs and transport costs, led to geographical expansive supply chains and the ubiquity of just-in-time inventory systems are vulnerable to sudden supply disruptions. Other explanation to the rapid expantion of the virus was the high-volume international travel and the predominant role of service sector with long-distance trips supporting tourism and hospitality sectors and facilitating interactions and commercial activity in business education and entertainment services (Baker et al., 2020).

The indicators shown by the country after more than four months of the firsts contagions such as a fatality rate of the infected of 11.7%, the number of contagions per 100 thousand inhabitants of 28.8, and the average daily positive case rate of 22.3%, confirm the ineffectiveness of the measures applied by the Mexican authorities to combat the spread of coronavirus and its effects on the population, which has caused Mexico to become the seventh place of number of confirmed cases and the fourth by the number of deaths as of 21 July 2020. In addition, using the information accumulated as of July 2020, projections from experts and institutions in the United States indicate that the number of deaths as of 1 November 2020 will be between 84 and 87 thousand people killed by COVID-19 (Gu, 2020; IHME, 2020).

Figure 3 shows the cumulative average daily tests per 100 thousand inhabitants, against the cumulative average percentage of daily positive cases. It is observed that Mexico is one of the countries that applies less tests in proportion to the population and has the highest percentage of positive daily cases with respect to daily tests.

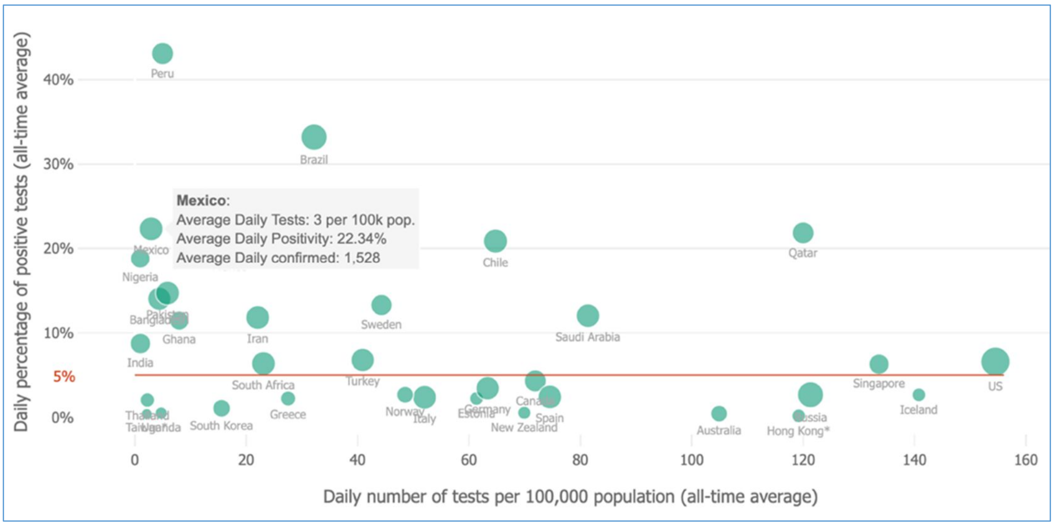


Figure 3 All time average daily number of tests vs daily percentage of positive tests by country
(Source: JHU, 2020)

2.2 Real Estate Financing in Mexico

Companies look for assorted instruments that are accessible and with the lowest cost possible in order to finance their projects. When they start, the only source of funds is through its stockholders. This is not only expensive, and they absorb all the risks involved in the project. Then, as the company grows, it can access the banks for loans thus, lowering the cost and distributing the risk between the stockholders and the bank. As the company continues to mature, it focuses more on Debt and Equity issuing, that offer lower costs but are more complicated to obtain as they must comply with an array of laws and rules from the markets and its regulators.

The Mexican Stock Exchange is a private financial company in Mexico whose main purpose is to give companies and public investors, through brokerage firms, a place to facilitate debt and equity transactions (issuing and buy/sell). There is an array of public traded instruments, available to the companies, in order to issue debt and equity, going from Commercial Paper Programs (revolving line of credit with a maturity of less than 1 year), medium term notes as well as long term debt and, on the equity side, shares, Certificate of Capital for Development (CKDs) and Certificates issued by Real Estate Investment Trusts (REITs). There are many other instruments not listed here for the purpose of this paper.

Shares represent a stake in the company’s capital. Investors are willing to pay a price for shares depending on their previous and futures financial results; thus, an investor has a profit if the price of a share increases. The CKDs are instruments to finance projects that need funds in the short term and generate profits in the long term, such as those in the infrastructure, real estate, mining and technological development sectors. The CKDs have no face value and according to their nature, have variable rates and possesses high risk, depending only in the profits of each project. REITs are special companies dedicated to promoting investments in real estate by issuing publicly tradable Fiduciary Real Estate Certificates (CFBIs in Spanish) in the Mexican Stock Market. REITs offer periodical payments resulting from the rent income of their real estate portfolio. They can also have a price change resulting from gain (or loss) when an asset is sold at a higher price (or lower) than its book value, and for the increase in the price of the CFBIs in the market (Figure 4).

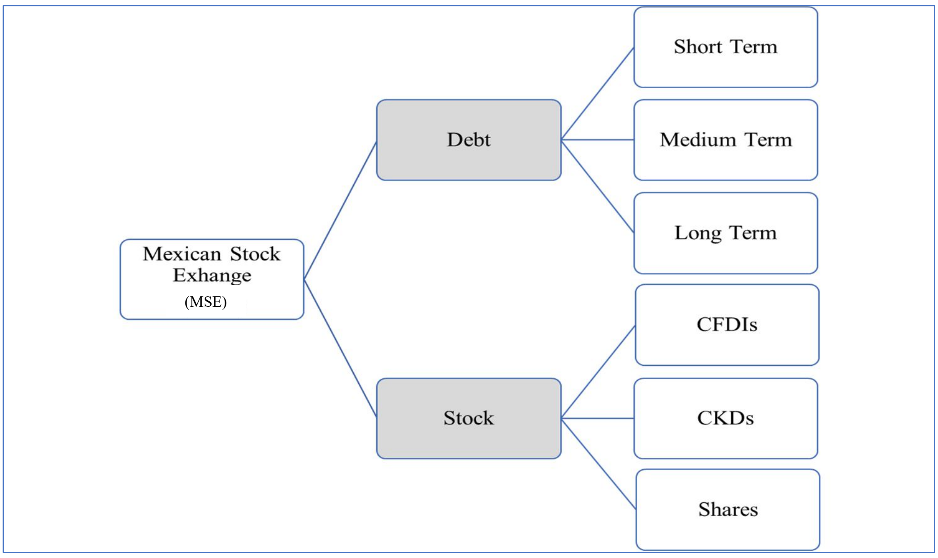


Figure 4 Financing options on the Mexican Stock Exchange
(Source: Oriol, 2015)

The Income Tax Law in Mexico (ITL), establishes the purpose of REITs as the acquisition or construction of real estate that will be rented. REIT's fiscal regulations were included in 2004. Towards the end of the first decade of this century, the main legal and fiscal constraints were abolished, concealing many fiscal and operative advantages to the CFBIs.

The different parts involved in the trust are:

- The Founder of the trust, that acquires the real estate properties;
- The Beneficiary of the trust who are the investors, owners of the CFBIs;
- The Fiduciary, which is the bank in charge of the real estate and has the responsibility to charge the rents and the payment of the resulting cash flows;
- The Technical Committee, which is a group of persons representing the Founders and decides over the administration of the patrimony of the trust;
- The Manager who is responsible of the collection of the rents, the maintenance of the properties; and,
- The Brokerage Firms, which are the institutions that offer the Initial Public Offering (IPO) of the CFBIs to the Stock Markets.

The most relevant and operative aspects in order to create a REIT are as follows:

The Trust must be constituted in accordance to the Mexican Laws: The Founder must issue the CFBIs. At least 70% of the trust must be invested in real estate properties and the remaining 30% can be invested in instruments issued by the Mexican Government, in investment funds or debt instruments.

The assets (acquired, built or rented) cannot be sold before a four-year period starting from the date of their acquisition or the date the construction is finished, and they must focus on rental space. The IPOs can be public or private (with at least 10 investors and none can have more than 20% share of the trust).

The Fiduciary must distribute to the owners of the certificates at least 95% of the fiscal results of the previous year, at least once a year, and it will retain the corresponding income tax to the owners of the certificates (except for the pension funds), applying the corresponding income tax to the distributed results (Mexican Stock Exchange, 2017). Table 2 shows a comparison between the REIT's operation requirements in Mexico, USA and UK.

Table 2 A comparison of key requirements of Mexico, United States of America and United Kingdom REITs structures
(Source: Clayton & MacKinnon, 2009; Mexican Stock Exchange, 2017)

Test/Rule	Mexico	United States of America	United Kingdom
Ownership	– Minimum of 10 shareholders and none can have more than 20% share of the trust.	– Minimum of 100 shareholders. – Five or fewer shareholders cannot control the company.	– No corporate shareholder can control more than 10%. – Five or fewer shareholders cannot control company (cannot be "close" company).
Assets	– At least 70% of assets must be rental property.	– At least 75% of assets must be real estate (including mortgages), government securities or cash.	– At least 75% of assets must be rental property.

	– 30% may be invested in instruments issued by the Federal Government, Investment Funds or debt instruments.		– Must hold at least three properties and none of them comprising more than 40% of portfolio.
Income	– At least 70% of income must be from property rental.	– At least 75% of income must be from property rental or interest on mortgages.	– At least 75% of income must be from property rental.
Debt	– The maximum limit may not exceed 50% of the book value of its assets.	– No formal (stated) restrictions.	– Interest coverage ratio must be 1.25 or greater.
Distributions	– 95% of income must be distributed to shareholders.	– 90% of income must be distributed to shareholders.	– 90% of income must be distributed to shareholders.
Converting to REIT Status	– The trust must be constituted in accordance with Mexican law.	– No requirement to file prior to conversion. – Unrealized built-in capital gains are taxable.	– Must file for REIT status prior to conversion. – 2% *"tax"* paid on market value of assets (new base).
Exchange Listing	– Exchange listing can be public or private.	– Not required. Three types of REITs are permitted: (i) publicly traded; (ii) SEC registered but non-exchange traded; (iii) Private.	– Mandatory. Not required.
Taxable Activities	– REIT retains tax from holders each year (except pension funds), applying the corresponding tax rate on the distributed result.	– REIT may own up to 100% of a *"Taxable REIT Subsidiary"* (TRS). – Ownership of TRS's can be no more than 20% of REIT assets. – Dividends from TRS qualify under the 95% income rule, but not under the 75% income rule.	– Tax exempt property business is inside the *"ring-fence[2]"*. Taxable activities may occur outside the *"ring-fence"*. – Amount of taxable activities outside the *"ring-fence"* governed by the Asset and Income restrictions above.

In the structure of REITs, the Founders contribute (1. Contribution) the real estate properties to the trust formalized by the REIT, and who are the owners until it is sold. The owners of the REIT receive a percentage of the total of the CFBIs. The general investors, at an IPO (2. IPO) and through the brokerage firms, can buy the remaining certificates (CFBIs). The total amount of the IPO is used by the REIT to acquire (3. Acquisition) other properties in the real estate market (Figure 5).

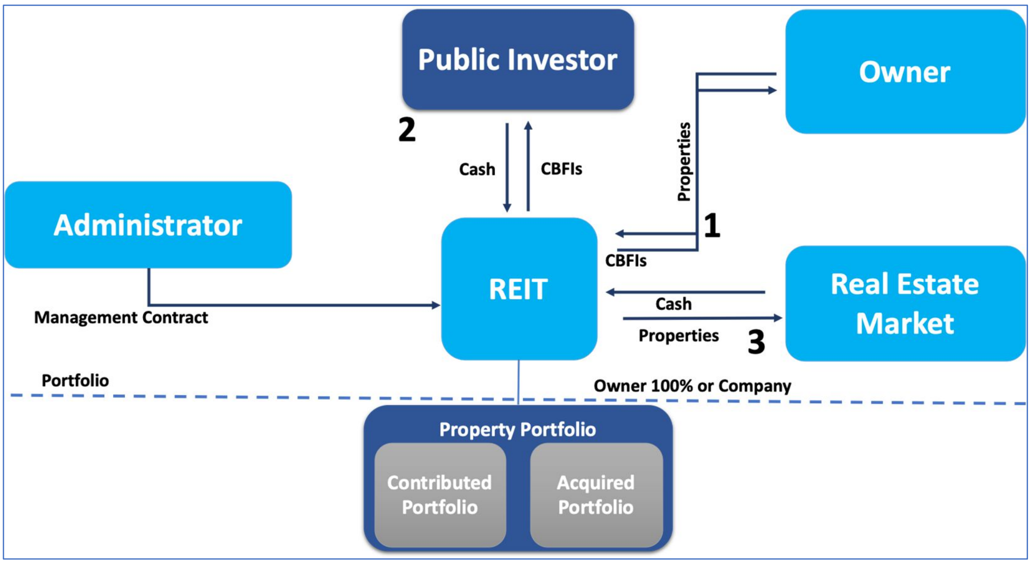


Figure 5 REITs structure
(Source: Deloitte, 2014)

For stockholders there is the possibility to invest in other instruments or even in gold (Sumer & Ozorhon, 2020), but the determination depends of how risky the instrument is. Several instruments can be used at the same time in order to diversify the portfolio.

2.3 REITs in Mexico Outlook

The first Real Estate Investment Trust issued in the Mexican Stock Exchange (MSE) was UNO REIT on 17 March 2011, originally integrated by 13 real estate properties in the industrial and commercial sectors (shopping centers and office space sectors), through an Initial Public Offering (IPO) of 185.4 million Real Estate Trust Certificates (CBFI) totaling US $299.7 million (FUNO, 2020). It´s initial profits distributed to investors exceeded all expectations; subsequently, other REITs quickly began to enter the market focusing in other real estate property types (housing, hotel facilities, etc.)

In 2018, there were fifteen REITs. This number hasn't changed since then. From those 15 REITs, eight include shopping centers, industrial buildings, office buildings and education facilities; while others are focused on a single sector: two in the hotel facilities sector, four in the industrial and one in the shopping centers, malls and retail sector. Table 3 shows each of the fifteen REITs issued in the MSE sorted by issuance date, including the initial price of the certificate and the sectors to which the assets belong.

Table 3 REITs at the Mexican Stock Exchange in December 2019. Ordered by the issuance date in the REIT's market
(Source: Own elaboration with data from each issuer)
* Trusts that make up the index S&P/BMV-REITs

No.	REIT	Issuance date	Issuance price x CBFI		Sector
			Mexican Pesos	US Dollars	
1	UNO*	Mar 17,11	19.50	1.62	Shopping centers, malls and retail; industrial and office buildings
2	Hotel*	Dec 03,12	18.50	1.43	Hotel facilities
3	Macquarie*	Dec 14,12	25.00	1.96	Shopping centers, malls and retail; industrial and office buildings
4	Inn*	Mar 13,13	18.50	1.49	Hotel facilities
5	Terrafina*	Mar 21, 13	28.00	2.26	Industrial facilities
6	Shop*	Jul 24, 13	17.50	1.39	Shopping centers, malls and retail
7	Danhos*	Oct 09, 13	26.00	1.97	Shopping centers, malls and retail; and office buildings
8	Prologis*	Jun 04, 14	27.02	2.09	Industrial facilities
9	Monterrey*	Dec 10, 14	12.00	0.83	Shopping centers, malls and retail; industrial and office buildings
10	HD*	Jun 11, 15	10.00	0.65	Shopping centers, malls and retail; industrial and office buildings
11	Plus	Oct 31, 16	15.00	0.79	Shopping centers, malls and retail; industrial and office buildings
12	Nova	Aug 03, 17	21.00	1.17	Shopping centers, malls and retail; industrial and office buildings
13	Upsite	Jun20, 18	37.00	1.81	Industrial facilities
14	Educa	Jul 27, 18	21.50	1.16	Educational facilities and office buildings
15	Storage	Aug 13, 18	15.40	0.80	Industrial facilities

REITs in Mexico provided significant benefits to investors with high levels of returns over their investments, since they are required to distribute 95% of the taxable income and the earnings (or losses) of capital as a result of the appreciation (or loss) of the trust's assets (goodwill). This study reviews the price performance of REITs in the country by analyzing the following data: first, the historical evolution of REITs taking into account the economic and commercial conditions that have made possible their development; second, the financial results of the trusts in 2019; and, third, the impact of COVID-19 on the price of their Certificates, considering the impact on the economy regarding the measures of suspending activities and population´s lockdown

■3.0 RESULTS AND DISCUSION

3.1 REITs Development in Mexico

In 2009, the Mexican economy faced an important challenge due to the world´s financial crisis; foreign trade fell by 23.5%, but by 2010 it had already reached 2008 levels or US $609 billion. Over the next three years, foreign trade grew at an average rate of 8.2% reaching the US level of $771 billion in 2013, which represented a 2.02% share of the world´s commerce. This led to a significant impact in the expansion of the first REITs, as most of the value of its assets are linked to the productive sector participating in international commerce.

The good financial results in 2011 of the first REIT, encouraged more trusts to be created; thus, over a period of only two and a half years, seven REITs were listed in the MSE. Their profits exceeded most financial instruments. At least three factors explain this situation: the change in the housing production model, the low-level interest rates and the increase in the country's foreign trade in industrial REITs.

Many construction firms and real estate developers were important players in the housing market. The large-scale housing production model changed in 2012 due to variations in governmental policies and originating a process of urban regeneration, creating a new cycle where housing remained important, but re-emerging with smaller housing developments. At the same time, demand surged for constructions oriented towards the commercial sector, so the value of the production of the construction companies, which was aimed in greater proportion at housing, changed to build productive properties (shopping centers, industrial warehouses and office space). In 2011, the year after the IPO of the first REIT, the value of the productive construction became positive and in the second half of 2011 increased 15.6%. This important growth of the commercial sector persisted during the next four years. Thus, the productive properties increased in importance: in 2010 they represented 29% of the value of the production of construction sector, reaching 47% of the total in 2019. On the other hand, housing decreased from 56% to 44% in the same period (Balbuena et al., 2020).

The value of production of Mexico’s construction companies, at constant prices in 2012, remained around $2.5 billion on average from 2006 to 2015, when it clearly began to decline at a rate of 3.0% per year over the next three years, to reach in 2019, $2.110 billion on an annual average, or 8.1% less from the 2018 average value. This means that the production of construction companies had a negative trend four years before the COVID-19 pandemic in the country. Commercial and housing are the most important component of the value of the construction sector of the country with almost half of the total. On the other hand, construction in the following sectors adds up to the other half: transportation, electricity and communications, oil and petrochemical, as well as water, irrigation and sanitation.

During the financial crisis in December 2009, the value of construction reached a minimum of $2.281 billion from that date it began to steadily recover to a maximum of $2.686 billion in September 2012, with continuous ups and downs over the next three years in the gap of $2.4 to $2.6 billion to decline thereafter. The overall performance of the REITs, during their first five years of operation, was strongly aligned with the behavior of the value of the production of the construction companies in Mexico. After that, the performance of the REITs detached itself from this indicator, the main reason is that the value of the production of construction other than the building began to drop noticeably from 2015 to date (Figure 6).

Figure 6 Evolution of the production value of construction companies in Mexico 2006-2020
(Source: INEGI, 2020a)

Mexico's interest rate began a downward phase starting during the 2009 financial crisis; it remained at 4.5% for 3 years, and in 2013 it fell again at 3.5%, persisting at this level between 2014 and 2015. This long period, characterized by low interest rates, favored the construction industry, as credit rates are referred to short-term rates plus a primum depending on the issuer.

Hence, during the abovementioned period REITs experienced a sustained growth: low credit rates were available, and the returns offered by REITs to investors were superior to the market average. Generally, business risk for a real estate company include choice of the right location and volume of space leasing to tenants, gathering rents, financing as well as making decisions to sell, refurbish and adjust rents (Brueggeman & Fisher, 2011; Xie, & Milcheva, 2020).

In this context, REITs Index in the Mexican Stock Exchange reached, in two years of operation, 241.44 points on 17 May 2013. The performance of the S&P/BMV-REITs Index showed a support slightly inferior by 200 points and a resistance just above 250 points, reaching its highest value in the last seven years of 263.84 points precisely, on 17 January 2020, breaking the resistance and reaching 155.29 points on 23 March 2020. which is the date when the suspension of school activities was officially declared in Mexico (Figure 7).

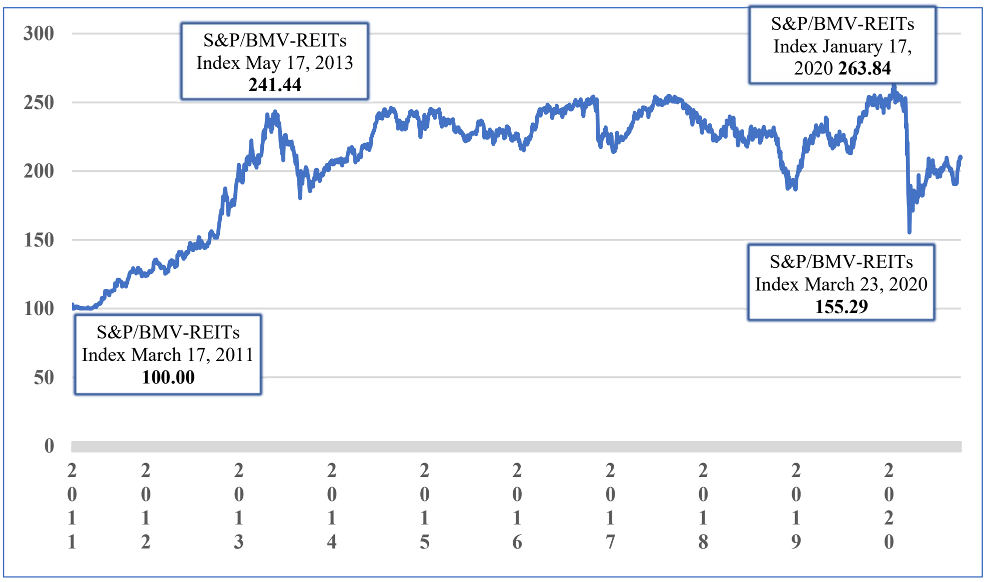


Figure 7 Evolution of the REITs Index of the Mexican Stock Exchange 2011-2020
(Source: Mexican Stock Exchange, 2020)

3.2 REITs Price Performance and COVID-19 Impact

At the end of 2019, the fifteen REITs listed in the Mexican Stock Exchange had 1,842 properties with a net area of 24.63 million square meters in office buildings, shopping malls and industrial parks and 19,045 hotel rooms, with accumulated assets of US $25,502.3 million, average occupancy of properties was 82.9%, the number of CBFI´s stock certificates was US $12,418.6 million, the average capital gains obtained during 2019 reached 13.3%, the capital gain of the S&P/BMV-REITs Index in 2019 remained at 31.5%, the average distribution for each CBFI was $0.074, with was a total distribution of US $919.0 million for investors in these instruments, and the average rate of return per certificate was 7.25%.

Regardless of the added value of the capital gain in the S&P/BMV-REITs Index, detailed information for each of the fifteen REITs issuers at the end of 2019, in terms of properties, size, asset value, occupancy rates, number of certificates in circulation, annual capital gain and revenue distribution, can be found in Table 4.

Table 4 Market performance of REITs on the Mexican Stock Exchange in 2019
(Source: Own elaboration with data from each issuer)
* REITs that make up the indexS&P/BMV-REITs

REIT	Number of Properties	Area	Assets (Mi $)	Occupancy rate	CBFI Million	Goodwill in 2019	Distribution x CBFI	
							US Dollars	%
Macquarie*	251	3,195,865 m^2	2,214.5	95.6%	785.5	39.1%	0.13	9.5%
Prologis*	191	3,238,810 m^2	2,316.6	97.6%	649.2	38.2%	0.15	8.1%
Fibra Educa	59	449,196 m^2	1,465.6	100.0%	1,227.3	37.5%	0.10	10.1%
Uno*	641	10,130,400 m^2	8,695.7	94.5%	3,928.2	34.1%	0.12	9.2%
Terrafina*	299	3,818,315 m^2	2,514.4	96.3%	790.6	32.8%	0.15	10.6%
Danhos*	19	917,077 m^2	3,398.5	92.2%	1,560.8	23.5%	0.14	9.1%
Shop*	19	782,486 m^2	1,058.1	96.0%	505.5	16.0%	0.06	8.9%
Fibra Nova	97	342,737 m^2	317.8	100.0%	241.8	8.6%	0.08	8.2%
Fibra Plus	16	280,339 m^2	388.3	94.1%	373.0	4.5%	0.00	0.0%
HD*	41	309,857 m^2	354.2	93.8%	427.8	1.1%	0.04	9.0%
Monterrey*	58	699,928 m^2	919.0	96.6%	964.2	1.0%	0.06	9.1%
Fibra Upsite	5	358,345 m^2	88.2	0.0%	102.1	0.0%	0.00	0.0%
Fibra Storage	21	105,091 m^2	230.5	63.2%	198.3	0.0%	0.02	4.5%
Hotel*	86	12,560 rooms	921.5	64.6%	794.5	-10.5%	0.04	6.7%
Inn*	39	6,485 rooms	619.4	58.4%	518.3	-26.0%	0.02	5.8%
Totales	**1,842**	**24,628,446 m^2**	**25,502.3**	**82.9%**	**13,067.1**	**31.5% index gains S&P/BMV-REITs in 2019**		

Among the listed REITs on the Mexican Stock Exchange, UNO REIT stands out, originally integrated by 13 properties in the industrial, retail and office space sectors and with an IPO of US $299.7 million. At the end of December 2019, this REIT had 641 properties and an asset value of US $8.695 billion which make it the largest REIT in Mexico, with one third of the assets of all real estate trusts. Educa REIT is also relevant: it has been in the stock market for less than two years and manages 59 properties in the education and office space sectors with a total assets value of US $1.465 billion. However, in assets terms the REITs market is concentrated: Two REITs (UNO REIT and Educa) with Macquarie, Terrafina, Danhos and Prologis concentrate 80.8% of the total assets of the Mexican REITs market.

On the other hand, except for three REITs, which had negative capital gains, 2019 was a good year for the real estate market in Mexico. The start of the new year presented optimistic prospects, the REITs-Index reached an all-time high level on 17 January 2020; however, with the announcement of the first cases of COVID-19 in the country, CBFIs prices have significantly decreased starting in March.

The analysis in this paper considers the dates when the COVID-19 pandemic began to affect economic activities in Mexico, such as the first contagion at the end of February, the first confinement measures in the last week of March and the restart of non-essential activities in early June. Table 5 shows the prices of REITs Certificates with data corresponding to the last day of February, March and June; it also shows the lowest value within the confinement period, which changes from one REIT to another, and that in most cases was presented on March 23th. 2020; a percentage comparison is made with the previous value for those months, another from June to December 2019 and the latter of the lowest value compared with February 28 (Bloomberg, 2020). As a result, the price of REITs Certificates would be affected by the investors' confidence in the recovery capability of the cash flow REITs (Deloitte, 2020). Also, considering the REITs-Index and the average Mexican pesos per US dollar exchange rate, the Mexican peso has been established as the currency reference for comparisons, since the value of the Mexican peso in terms of US dollars experienced important fluctuations during the first half of 2020.

Table 5 Comparison of REITs CFBI´s prices by 2020 (in Mexican pesos)
(Source: Own elaboration with data from each issuer)
* REITs that make up the S&P/BMV-REITs Index

No.	REIT	Dec 31. 2019	Prices of certificates in 2020 (Mexican pesos)									
			Feb 28.	% (Feb/Dic)	Mar 31.	% (Mar/Feb)	Jun 3.	% (Jun/Mar)	% (Jun/Dic)	Low	Date	% (date/Feb)
1	UNO*	29.29	29.51	0.8%	18.59	-37.0%	18.25	-1.8%	-37.7%	15.69	Mar 23.	-46.8%
2	Hotel*	8.92	8.03	-10.0%	4.61	-42.6%	4.65	0.9%	-47.9%	3.74	May 21	-53.4%
3	Macquarie*	24.60	26.32	7.0%	19.70	-25.2%	23.59	19.7%	-4.1%	17.15	Mar 23.	-34.8%
4	Inn*	7.26	7.59	4.5%	5.74	-24.4%	5.20	-9.4%	-28.4%	4.56	Jun 04.	-39.9%
5	Terrafina*	31.02	30.10	-3.0%	26.24	-12.8%	26.75	1.9%	-13.8%	19.52	Mar 23.	-35.1%
6	Shop*	9.45	9.90	4.8%	8.30	-16.2%	6.25	-24.7%	-33.9%	6.25	Jun 30.	-36.9%
7	Danhos*	28.03	26.91	-4.0%	19.44	-27.8%	21.84	12.3%	-22.1%	17.06	Mar 23.	-36.6%
8	Prologis*	41.68	41.73	0.1%	35.75	-14.3%	41.11	15.0%	-1.4%	30.88	Mar 23.	-26.0%
9	Monterrey*	12.05	12.00	-0.4%	8.70	-27.5%	9.84	13.1%	-18.3%	8.23	Apr 22.	-31.4%
10	HD*	8.27	8.65	4.6%	6.00	-30.6%	5.18	-13.7%	-37.4%	4.00	May 26.	-53.8%
11	Plus	12.00	12.49	4.1%	11.48	-8.1%	11.40	-0.7%	-5.0%	10.50	Apr 01.	-15.9%
12	Nova	19.60	19.01	-3.0%	19.50	2.6%	19.00	-2.6%	-3.1%	18.99	Mar 23.	-0.1%
13	Upsite	37.00	37.00	0.0%	37.00	0.0%	37.00	0.0%	0.0%	37.00	-	-
14	Educa	27.50	28.00	1.8%	27.50	-1.8%	29.00	5.5%	5.5%	26.50	Jun 06.	-5.4%
15	Storage	15.40	15.41	0.1%	15.40	-0.1%	15.40	0.0%	0.0%	15.39	May 22.	-0.1%
S&P/BMV-REITs Index		**246.04**	**245.17**	**-0.4%**	**184.83**	**-24.6%**	**198.04**	**7.1%**	**-19.5%**	**155.29**	**Mar 23.**	**-36.7%**
Exchange rate (Mexican pesos/dollar)		**$19.12**	**$18.84**	**-**	**$22.38**	**-**	**$22.30**	**-**	**-**	**-**	**-**	**-**

At the end of February, the price of five REITs Certificates were below the December 2019 value. By the last day of March, all certificates were virtually priced lower than February. By June, two-thirds of REITs Certificates showed increases of prices compared to March. On the last day of June 2020, only Educa REIT was 5.5% above the value of December 2019; Upsite and Storage REITs remained unchanged the entire period as they are newly created, and their assets are under construction. The other twelve REITs performed negatively with percentages under 30% in four cases. The REITs Index was below 19.5% as early as June 2020 compared to December 2019.

In 23 March 2020, the impact of COVID-19 on the value of certificates was noticeable in most trusts, when school suspensions were announced, and investors were already awaiting the closure of non-essential activities. Five REITs related to shopping centers and retail, industrial and office space sectors reported reductions from 26% to 47%. The impact for hotel REITs occurred at the end of May. REITs, specialized in the commercial sector, persisted with negative performance because shopping centers were opened to the public starting on 8 July 2020. Most REITs in mid-July still do not have an improvement in quotes compared to the values of the end of 2019, with the exception of Macquarie and Prologis REITs, that have shown a recovery in the price of the certificate compared to February 2020, and which exceed the value of the December 2019 price. This performance is explained because they have a major investment in the industrial sector linked to the foreign trade with the United States and a significant proportion of their income is in US dollars through long-term contracts.

As of July, levels of certificate prices on the Mexican stock market did not show a clear difference between the prices of specialized sectors REITs and the ones that may be diversified in several sectors. In a previous study based on the Capital Asset Pricing Model (CAPM) stated that there were no conclusive results demonstrating higher returns between diversified and specialized REITs. The findings showed that there was a greater market risk for specialized REITs (Ro & Ziobrowski, 2011). In this regard, it is anticipated that hotel and commercial properties will be the ones that record the biggest drops in their indicators and results. In the hosting sector stand out Hotel and Inn REITs that have had occupancy levels below 50% during confinement, while in the commercial sector the most impact, for the closing of places for three months, are Shop, Danhos, HD and Uno REITs. Our findings reveal that pandemic disease interacts negatively with stock market returns, specifically, stock returns related to both the daily growth in total confirmed cases and the daily growth in total cases of death caused by COVID-19 (Al-Awadhi et al., 2020).

Also, the fall in the prices of REITs Certificates due to confinement was reflected in the market capitalization of each broadcaster, as well as in the total capitalization of REITs which decreased by 24.5% in March compared to December 2019 and still in June remained below 21.2%. At the end of June 2020, only Educa REIT was above the market capitalization of December 2019, and Upsite and Storage REITs remained unchanged the entire period as they are newly created, and their assets are under construction. The other twelve REITs performed negatively market capitalization in percentages under 20% in six cases, all linked to office buildings, shopping malls and hotels properties (Table 6).

Table 6 REITs market capitalization

REIT	CBFI Million	31-Dec-2019		31-Mar-2020		% Mar/Dec	30-Jun-2020		% Jun/Dec
		Price of CBFI US dollars	Market capitalization US$ Million	Price of CBFI US dollars	Market capitalization US$ Million		Price of CBFI US dollars	Market capitalization US$ Million	
Uno	3,928.2	1.53	6,017.7	0.97	3,819.3	-36.5%	0.95	3,749.5	-37.7%
Danhos	1,560.8	1.47	2,288.4	1.02	1,586.9	-30.7%	1.14	1,782.9	-22.1%
Educa	1,227.3	1.44	1,765.2	1.44	1,765.2	0.0%	1.52	1,861.5	5.5%
Prologis	649.2	2.18	1,415.2	1.87	1,213.8	-14.2%	2.15	1,395.8	-1.4%
Terrafina	790.6	1.62	1,282.7	1.37	1,085.0	-15.4%	1.40	1,106.1	-13.8%
Macquarie	785.5	1.29	1,010.7	1.03	809.4	-19.9%	1.23	969.2	-4.1%
Monterrey	964.2	0.63	607.6	0.46	438.7	-27.8%	0.51	496.2	-18.3%
Hotel	794.5	0.47	370.6	0.24	191.6	-48.3%	0.24	193.2	-47.9%
Shop	505.5	0.49	249.9	0.43	219.5	-12.2%	0.33	165.3	-33.9%
Nova	241.8	1.03	247.9	1.02	246.6	-0.5%	0.99	240.3	-3.1%
Plus	373.0	0.63	234.1	0.60	224.0	-4.3%	0.60	222.4	-5.0%
Upsite	102.1	1.94	197.6	1.94	197.6	0.0%	1.94	197.6	0.0%
Inn	518.3	0.38	196.8	0.30	155.6	-20.9%	0.27	141.0	-28.4%
HD	427.8	0.43	185.0	0.31	134.2	-27.4%	0.27	115.9	-37.4%
Storage	198.3	0.81	159.7	0.81	159.7	0.0%	0.81	159.7	0.0%
Total			**16,229.1**		**12,247.2**	**-24.5%**		**12,796.5**	**-21.2%**

3.3 COVID-19 Economic Impact in Mexico

Mexico is currently facing two main issues, which can be related: The control of the pandemic as well as the recovery of the economy. The origin of the current economic recession is largely due to the social isolation measures that have been adopted by several countries around the world in order to restrict COVID-19 contagion, including confinement and business closures. This effect has been amplified since the pandemic has affected many nations almost simultaneously, disrupting the trade chains of the world. The impact has been even more severe due to the rigorous way most countries applied standards during March and April, followed by gradual easing according to the levels of reduction of the pandemic effects.

Many countries have assigned large monetary resources to mitigate the repercussion of the recession. The actions have been diverse, including unemployment benefits, cash transfers, credit guarantees, deferral and tax cuts, corporate backings to maintain payroll, among others. In terms of GDP, the size and opportunity of the packages have been remarkable, as is the case with: United States 10%, Canada 3%, China 6%, France 1.9%, Italy 1.5% and Japan 20% (JLL, 2020).

Mexico represents an exceptional case with modest support programs compared to international ones. The actions announced included: the advanced payment of social retirement pension, disability aid and public housing credit covering three months of debt. In addition, loans were provided for small businesses that have not laid off workers (0.1% of GDP), supplementary loans from development banks (0.2% of GDP) and specific credit lines for the informal sector, that represents 55% of employment in Mexico (0.1% of GDP). As well, the Central Bank (BANXICO) announced measures to promote the operation of financial markets, strengthen credit channels, provide liquidity in foreign currency and lower the interest rate.

Despite aid programs, the Mexican economy was severely affected by confinement, activity suspensions, global economic recession, and dropping oil prices. In April and May alone, 3.72 million jobs were lost in the formal sector and 8.46 million jobs were lost in the informal sector (Banxico, 2020). Tourism revenues collapsed, as economic conditions and travel restrictions in major countries of origin reduced travel. At the start of the crisis, the Mexican peso depreciated abruptly in the same way as the currencies of other emerging market economies and foreign trade declined 35.8% in April and 52.0% in May.

The activities that performed the worst during the confinement period were lodging services as well as food and beverages, that decreased in April 70.4% and in May 72.1%, construction fell 38.4% and 35.9%, manufacturing had a loss of 35.6% in both months. The retail and wholesale trade sectors, transport and media and cultural and recreational services fell by around 30% in all cases. Figure 8 shows the performance of economic activities in April and May 2020 in Mexico.

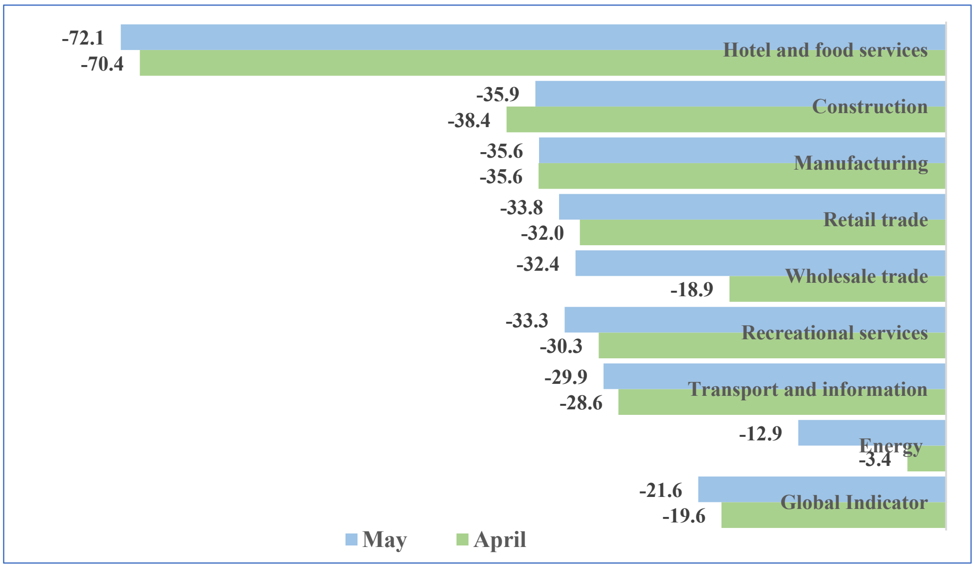


Figure 8 Economic activities in April and May 2020 in Mexico
(Source: INEGI, 2020a)

The figures of May 2020 of the Global Indicator for Economic Activity (GIEA) highlight the largest economic recession in the modern history of the country. This recession proved to be twice as high as the 1995 Tequila Crisis. This is the most severe production crash since there is annual registration. With this result, the economy accumulated a 13-month decline, having done so since May 2019, according to GIAE data. Confinement by the coronavirus pandemic caused stronger losses to the economy than the crisis observed in the past three decades. The 21.6% fall in May this year was twice as large as the 10.3% crash in October 1995, and stronger than the 8.3% decline in May 2009, caused by the global financial crisis and the influenza A(H1N1) pandemic initiated in Mexico. Industrial production fell sharply by 29.7%, which contributes one-third of GDP and is more linked to foreign trade, while household consumption-related activities, which contribute two-thirds of GDP, fell by 19.1% (Figure 9).

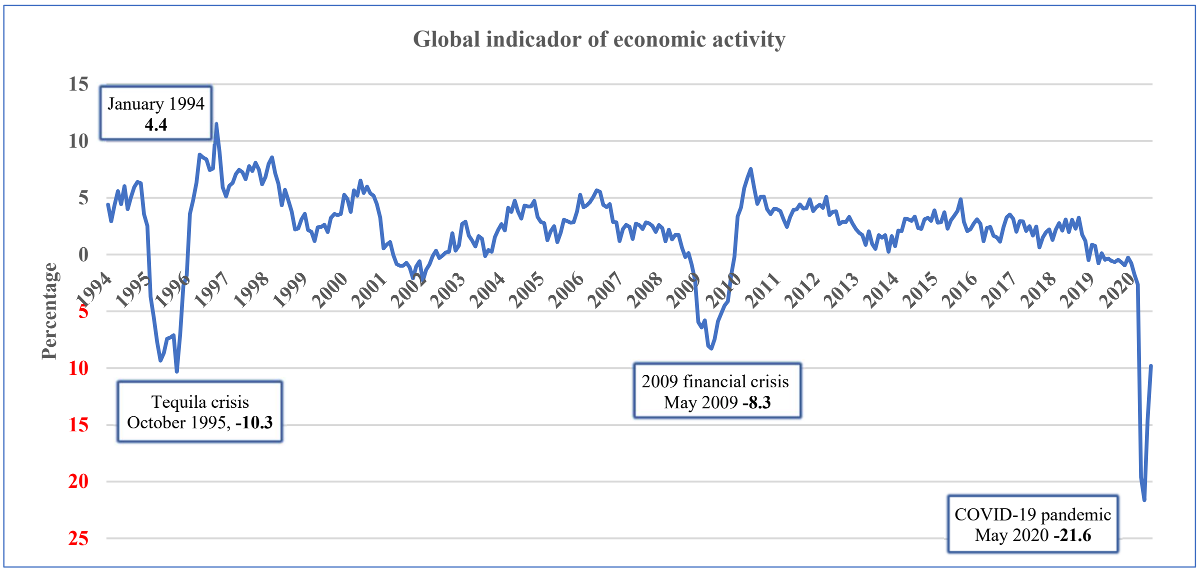


Figure 9 Global indicator for economic activity 1994-2020
(Source: INEGI, 2020a)

International agencies such as the International Monetary Fund (IMF), the World Bank and the Organization for Economic Cooperation and Development (OECD) predict that the pandemic will hit Mexico hard, due to a highly open economy that possesses large exposures to trade, tourism, global supply chains, oil prices and money transfers from Mexican workers abroad. It is estimated that GDP will fall from 7% to 10% by 2020. In particular, the OECD sets out two projections: a scenario that assumes that confinement measures are gradually lifted by the end of May, in which the economy contracted 7.5% in the year, and another double impact scenario, if there is a posterior outbreak, reaching 8.6% this year. In both scenarios, the recovery will be gradual until the end of 2021 and the level of GDP would remain lower than in 2019, as the tourism and export sectors will take some time to return to pre-pandemic levels (OECD, 2020).

For their part, private banks and Mexico's Central Bank have been declining economic growth forecasts by 2020. By the beginning of 2019, they pointed at an approximate increase of 2.0% and by the end of the year, they had lowered it to values close to 1.0%. In February 2020, the study of the country's private banks projected a 2.8% drop, while the Central Bank still handled growth of 0.9%. However, since March, these estimates began to drop quickly and by June 2020 it is among -9.0% and -9.3% (Figure 10).

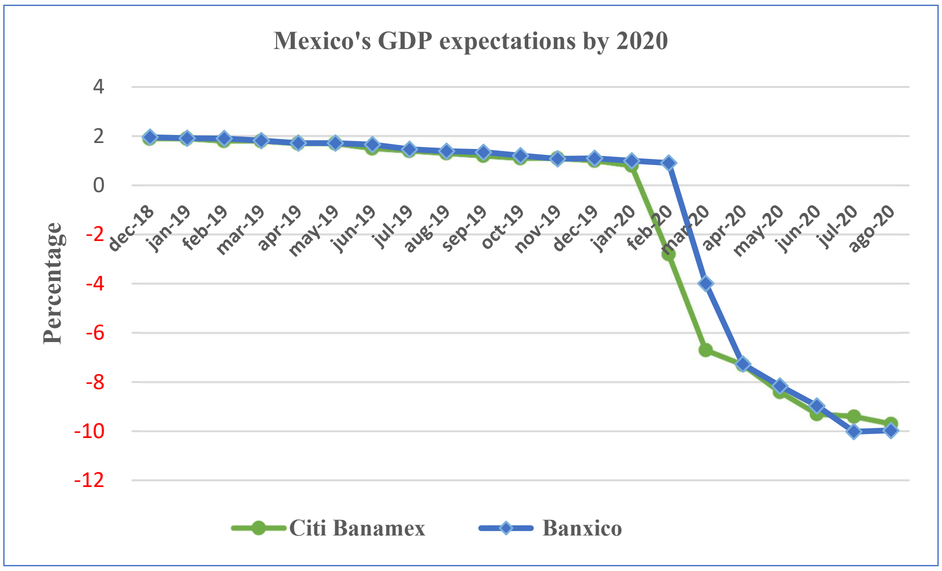


Figure 10 Mexico's GDP expectations by 2020
(Source: Banxico, 2020; Citibanamex, 2020)

The country's economic performance showed a continued drop in the four quarters of 2019. For this reason, the pandemic outbreak surprised the Mexican economy in a situation of great weakness. Thus, in the first quarter of 2020, GDP had an additional reduction of 2.2% at an annualized rate. By the second quarter, the Mexican economy collapsed 18.9%, manufacturing had a 26.0% drop, and consumer-related services fell 15.6%. GDP performance during the first two quarters of the year reinforces projections by international agencies and local experts that the economy will fall by around 10% by 2020, which will undoubtedly affect all the country's economic activities, including the real estate sector.

3.4 COVID-19 Economic Impact in REITs in Mexico

To examine how growth rates of COVID-19 affect firms differently through their asset portfolio, we distinguished two variables: The geographic distribution of COVID-19, and the REITs property types and their geographic location. The geographic spreading of COVID-19 in Mexico is related to the fact that the country is highly centralized and urbanized. Mexico has 127.09 million inhabitants, 80.2% living in the cities. The Metropolitan Area of the Valley of Mexico (MZVM, also referred as the Valley of Mexico) is the economic, financial, political and cultural center of Mexico. About its population, it is the third largest metropolitan area in the OECD and one of the largest in the world outside Asia. According to the most widely used Mexican delimitations, the MZVM covers about 7,866 km^2 (almost five times the size of the Greater London region), comprising the 16 counties of Mexico City, 59 municipalities in the state of Mexico and a municipality in the state of Hidalgo. Mexico City and the surroundings have 21.581 million inhabitants (ONU, 2018).

Figure 11 Geographic distribution of COVID-19 in Mexico (the darker the red, the higher infected cases)

The Metropolitan Zone of Guadalajara (MZG) is the geographical area resulting from the conurbation that has had the capital of the State of Jalisco along with the surrounding municipalities as the capital of the state is the most populous city with the greatest historical relevance in the Central Region of Jalisco. It has more than 5 million inhabitants so it is placed as the most populous metropolitan area of Mexico, after the Metropolitan Zone of the Valley of Mexico, according to data from the National Institute of Statistics, Geography and Informatics (INEGI) of the 2015 census. It was decreed that the Metropolitan Area of Guadalajara (MAG) would consist of the following municipalities: Guadalajara, Zapopan, San Pedro Tlaquepaque, Tlajomulco de Zúñiga, Tonalá, El Salto, Zapotlanejo, Ixtlahuacán de los Membrillos and Juanacatlán; these nine municipalities bring together 5 million inhabitants.

The Metropolitan Zone of Monterrey (MMZ) is the urban area formed by the city of Monterrey, its municipality of the same name, and eleven more municipalities in the state of Nuevo León. According to the last official count and delimitation carried out in 2015 together by México INEGI, the Metropolitan Zone of Monterrey grouped a total of 4,689,601 inhabitants an area of 6357 km2, placing it in Mexico's third most populous, behind the metropolitan areas of the Mexico Valley and Guadalajara and the second with the largest territorial extension in Mexico.

These three cities have the most important group of properties dedicated to office buildings and shopping centers. As stated by Ling et al. (2020), REITs that focus their investments on datacenters, cell towers, self-storage and warehouses properties produced good returns during the pandemics, which mainly occurred in Mexico City, Guadalajara and Monterrey.

In México REITs office buildings are properties for rent to corporations. These assets are usually the most desired on the market due to their excellent location, high level of design, amenities, technological systems and management, usually they are Smart Buildings, have LEED Certification and are new high-rise towers. These buildings have a high degree of technology and added value in management, which set it apart from the rest. The corporate image is a fundamental element for these cases. The market-leading Class A+ and A office buildings attracts international customers with solid economic power. In smaller industrial cities the properties can be Class B, with free plants of more than 150m2, high or very high qualities, but in location that is not considered as premium as Class A and Class A+ offices, however they suffered the impact of the pandemic, not as severe as other REITs (Deloitte, 2020).

UNO REIT 2020 second quarter report fell below estimates in revenue and in its Net Operating Income (NOI). This was due to the impact of COVID-19 and the REIT's support for its tenants, in order to help them overcome the crisis. UNO REIT has the advantage of being the largest in the country. It possesses 647 properties and a Profitable Gross Area of 10.3 million square meters, implying an annual increase of 18.6 percent. However, the occupancy rate did reflect a drop by falling 1.4 percentage points (vs. 2Q19) to 93.8 percent. The biggest fall was the factor of offices 7.2 percent to 81.8 percent, due to the locking of working centers with employees sent to do home office, and competitiveness of the sector. To reduce the impact that health contingency will have on its tenants, UNO REIT developed customized strategies for its clients, including deferral of rents, but not omission of them; some of the steps they have taken go in the sense of deferral of rents, for example: they give three months off to pay in the next 6 months, which hypothetically would be three months of 20% discount to pay in 6 months with 10% more to recover that 60% that is offered.

REITs concentrated in industrial properties fell but only 1.1 % to 96.2 % of occupation rate. Prologis REIT is focused on acquiring, owning and managing Class-A logistics and manufacturing facilities, with a strong relationship with Prologis Inc., a leading American developer. This allows to capitalize on future growth by acquiring high-quality properties strategically located in Mexico's most important markets. Their portfolio is planned to capitalize on their locations that possess good infrastructure, deep labor markets and access to large concentrations of population, transportation and communication networks; 83% of properties are located in master-planned parks. Manufacturing facilities are in the border cities with USA, Ciudad Juárez, Reynosa and Tijuana and near the consumption cities of México City, Monterrey and Guadalajara, and central México (El Bajío) in the states of Querétaro, Aguascalientes, Guanajuato and San Luis Potosí. The industrial REITs are linked to trade with USA and locations generally are outside the cities, in consequence they are less exposed to workers' contagions and have better sanitary conditions. Even though the industrial activity has also suffered a severe operational blow from the closure of some companies, sectors such as automotive, mining and construction have already begun to gradually resume their activities. Despite the pandemics, UNO and Prologis REITs are increasing their portfolio with more industrial properties in order to satisfy the demand of storage and logistic services due to e-commerce.

Educa REIT is a Mexican REIT, mainly dedicated to the purchase, development, ownership, and income beneficiary from the lease of a diverse range of properties predominantly dedicated to educational spaces. Educa has a portfolio with 55 properties, with a total gross area of 367,000 m2 achieving an occupancy of 100%. The universities and schools it leases serve a tuition of more than 250,000 students and 7,000 teachers, through 13 educational brands. None of their tenants have had problems to pay the leasing contracts. In contrast, the worst performers were hospitality and retail REITs (Deloitte, 2020).

According to a study by the World Travel & Tourism Council (WTTC, 2020), Mexico positions tourism as its largest sector. Mexico's tourism activity contributed 8.7% to the country's Gross Domestic Product (GDP) and generated 2.3 million jobs, representing 6.0% of the national total. The National Institute of Statistics, Geography and Informatics (INEGI, 2020b) noted that accommodation services accounted for 28.1% of value. Transport contributed 18.7%, restaurants, bars and nightclubs participate with 15.2% and the production of handicrafts and other goods support with 11.7%. This sector also contributed tourist trade to tourism GDP, at 8.1%; sports and recreational services, with 1.1%; cultural ones, with 1.0%; travel agencies and other booking services, with 0.8%, and the rest of the services, with 15.3%. The institution noted that in 2018 it amounted to US $3 billion dollars; the consumption expenditure made by tourists within the country (indoor consumption). It detailed that consumption for resident tourism accounted for 82.7% of domestic consumption and the spending of visitors from other nations accounted for the remaining 17.3%. The coasts of Mexico have 11,122 km, exclusively on its mainland and not including island coastlines, of which 7,828 km belong to the Pacific Ocean and 3,294 km to the Gulf of Mexico and the Caribbean Sea (INEGI, 2019). In the Pacific Ocean there are important Touristic locations, specifically Baja California (La Paz, Los Cabos) and in the Cortés Sea the Nautical Stair. Also, Mazatlán, Puerto Vallarta, Ixtapa, Acapulco and Huatulco Bays. In the Caribbean Sea, the Mayan Riviera in the state of Quintana Roo. is located in the eastern part of the Yucatan Peninsula. Geographically it extends along the coast, from Isla Blanca to the north, to the town of Punta Allen to the south, about 140 km. It is estimated to have around 405 world-class hotels, five stars and other categories, offering at least 43,500 rooms. The most important touristic centers in México are in the states more affected by the pandemics.

During the pandemic, the hospitality sector was required to close hotels, restaurants, bars, night clubs, recreational services and additionally, all transportation services were cancelled, airlines and land transport. These conditions produced a very severe impact in the sector. Due to the worst crisis of the aviation industry in the country, Aeroméxico, the country´s flagship airline to enter Chapter 11 and look for a bankruptcy loan of US$ 1 billion dollars (El Financiero, 2020). The low-cost airlines begin its financial recovery. The hospitality industry navigates through unprecedented challenges from the effects of COVID-19. In April and May, most hotels were temporarily closed and started reopening throughout June, subject to restrictions. To this day, the hotels opened with an average occupancy in July to date of 17%. REITs have invested in technology, protection and sanitization equipment and implemented hygiene and safety protocols in all hotels. With this model, the firms can reach a breakeven point at the hotel level at 25% to 30% of occupancy. The priority continues to be the safety and the well-being of the guests. Hotel REITs are the hardest hit by the new COVID-19, keeping occupancy levels below 50%, such as Hotel and Inn REITs.

Retail REITs like SHOP REIT the retail real estate investment trust, recorded a decline in reported revenue in the second half of the year with 21.18 % less than during the same period in 2019, after the closure of shops and shopping malls due to the coronavirus pandemic. In his report sent to the Mexican Stock Exchange, the owner of Puerta Texcoco, Plaza Cibeles and UC Juriquilla, informed an Ebitda 20.93 % less than in 2019; while the NOI margin stated a 20.97 % drop. The profit for CBFI resulted in 17.19 cents. Currently, Shop REIT portfolio consists of 18 properties located in twelve states of the Mexican Republic. In addition, retail REITs, face the closure of units, is the case of Shop, Danhos, HD and UNO REITs.

There are huge differences across sectors and firm locations. Visitors derive low or negative utility from visiting places with COVID-19 exposure and those pay less visits to those places, this could lead to a negative impact on property user's revenue (Milcheva, 2020). The indoor space of public spaces are the greatest risks due to higher population density and usually inadequate conditions of ventilation and space for social distancing, this happens in shopping centers, clubs with gymnasiums, mixed uses buildings with cinemas, retail, casinos, while residential buildings are relatively less risky (Xie & Milcheva, 2020).

■4.0 CONCLUSIONS

Real Estate Investment Trusts (REITs), which started their operation in Mexico in 2011, became in a very short time in financial instruments that attract funds to the stock market to invest in the acquisition of properties that generate capital gains and rental income in sectors such as office space, hotels, shopping centers, industrial warehouses, hospitals and educational facilities.

REITs consolidation in such a short time was due to three factors: the growth in foreign trade in the country, the increase of construction in productive building and low interest rates. Currently, REITs manage almost 2 thousand properties with a net area of 25 million square meters and 20 thousand hotel rooms. The value of real estate total assets is more than US $25 billion, a figure representing one-fifth of the GDP of the country's real estate sector.

In 2019, REITs Certificates achieved an average of 13.3% increase in price and an average distribution of 7.3%, which is equivalent to a total annual return of 20.6% per certificate. The total annual distribution for investors was US $919 million, each certificate on average distributed $0.074. The increase of the S&P/BMV-REITs Index was the highest in the history for this indicator with an increase of 31.5% in 2019. Over nine years, this indicator has had an increase in price of 153.15%, which is equivalent to a CAGR (Cumulative Annual Growth Rate) 10.9%, profit five times higher than the price index and quotes of the Mexica Stock Exchange in the same period.

The pandemic and the measures of social isolation, confinement and business closures adopted in the country to reduce the contagion of COVID-19 severely affected the Mexican economy. They had an important effect on the prices of the REITs Certificates. The S&P/BMV-REITs index fell 36.7%, between 28 February and 23 March 2020, just three weeks after the first contagion was announced, while the Certificate prices of most REITs had also an unfavorable performance in the same period, with declines of between 8% and 42%. On the last day of June 2020, only Educa REIT was 5.5% above the December 2019 value. Upsite and Storage REITs price remained unchanged the entire period as their assets are under construction. The other twelve REITs performed negatively with percentages greater than 30% in four cases and the REITs Index was below 19.5% compared to December 2019. Properties generating higher people concentrations (shopping malls, stadiums, theaters, concert halls and hotels) will be the most affected in this crisis and will be forced to implement innovative schemes to operate in order to generate earnings in the future (Deloitte, 2020).

Data up to this day suggest that hotel facilities and shopping centers, malls and retail properties will record the greatest reductions in their financial results; in the hospitality sector stand out Hotel and Inn REITs that had occupancy levels below 50% during confinement, while in the retail sector, the impact due to the closing of malls and shopping centers for three months, put down Shop, Danhos, HD and UNO REITs. On the other hand, by the end of July 2020, Macquarie and Prologis REITs have shown a recovery in the price of the Certificate compared to February 2020 and exceed the value of the quote in December 2019. This performance is explained because they have an important participation in the industrial sector linked to foreign trade, and they are increasing their portfolio in the sector.

Our findings like those of Ling et al.'s (2020) evidence that the key drivers are the property type and the geographic allocation of assets. The best performing property types were industrial and high-tech facilities because many people are working remotely from home. Industrial REITs had 95% occupancy during the 2 initial quarters of the year, they have announced they will have an income increase of 12% in 3Q because e-commerce clients demand more storage and logistic space (Vector Research, 2020) The worst performers were hospitality and retail REITs because several effects of the shelter in place orders, imposed closure, cancelled travels specially in the beach resorts, and in the main cities of the country. Some offices were less negatively affected because they have long term leases but other are in mixed uses properties and were closed during the lockout period.

The effects of the COVID-19 pandemic have severely affected the country's economic and social development. GDP fell in the first quarter of 2020 by -2.2% and fell further in the second quarter by -18.9%, anticipating an annual drop of about -10%. Moreover, the available information suggests that the impact of the pandemic could be longer in Mexico as the epidemiological curve has not changed, increasing the risks of reversing the reopening of productive activities thus, increasing the possibility of a sharper drop in GDP than those identified by the recent projections.

Currently, fighting the COVID-19 outbreak should remain the top priority for the Mexican authorities in the short term, which involves allocating sufficient resources to strengthen health system, including the provision of evidence, the adequacy of facilities, as well as the availability of medicines and other supplies.

In conclusion, the reduced support provided in proportion of GDP suggests that the social damage from Mexico's current recession has been poorly reduced by public and fiscal policy. A redirection of government management is essential in order to avoid further aggravation of poverty rates. The country's finances allow some space for additional actions, which could take the form of income support for informal and formal workers who have lost jobs through an unemployment insurance scheme, temporary tax cuts for small and medium-sized companies, and interest rate cuts. The impact and the depth of the crisis originated by COVID-19 in the real estate sector is still uncertain, some changes in the consumer's behavior can reduce the value of some REITs properties.

Notes:

(1) A sentinel surveillance system is used when high-quality data are needed about a particular disease that cannot be obtained through a passive system. Selected reporting units, with a high probability of seeing cases of the disease in question, good laboratory facilities and experienced well-qualified staff, identify and notify on certain diseases. Whereas most passive surveillance systems receive data from as many health workers or health facilities as possible, a sentinel system deliberately involves only a limited network of carefully selected reporting sites. For example, a network of large hospitals might be used to collect high-quality data on various diseases and their causative organisms, such as invasive bacterial disease caused by Hemophilus influenzae type b, meningococcus or pneumococcus. Data collected in a well-designed sentinel system can be used to signal trends, identify outbreaks and monitor the burden of disease in a community, providing a rapid, economical alternative to other surveillance methods. Because sentinel surveillance is conducted only in selected locations, however, it may not be as effective for detecting rare diseases or diseases that occur outside the catchment areas of the sentinel sites (WHO, 2020).

(2) A ring fence is a virtual barrier that segregates a portion of an individual's or company's financial assets from the rest. This may be done to reserve money for a specific purpose, to reduce taxes on the individual or company, or to protect the assets from losses incurred by riskier operation.

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