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The S&P/BMV IPC Turns 40

A benchmark index represents the performance of a specified securities market, market segment, or asset class. The [S&P/BMV IPC](#) seeks to measure the performance of the largest and most liquid stocks listed on the Mexican Stock Exchange (Bolsa Mexicana de Valores; BMV). The index is designed to provide a representative, investable, and replicable measure of the Mexican equities market.

The S&P/BMV IPC was launched on Oct. 30, 1978, as part of a Mexican market revolution, and it has been the icon of the Mexican equity market ever since. In the middle of a long inflationary period, between the devaluation of the Mexican peso and changes in monetary policy regarding the exchange rate, 1978 was a decisive year for the Mexican economy. The country's central bank implemented new economic and financial policies, marking a new regulatory environment that included tax exemption on capital gains, the approval of the revaluation of certain assets to support listed companies facing a delicate financial situation, and the "Mexicanization" of foreign capital through the stock exchange.¹

INDEXING IN MEXICO

The need to measure the evolution of the Mexican equity market existed even before the launch of the Índice de Precios y Cotizaciones (IPC), which is now the S&P/BMV IPC. The first attempt of one of the S&P/BMV IPC's predecessors, the Promedio de hechos de la Bolsa index from 1910, was calculated as the annual arithmetic average of the values traded by each listed company. However, this first approach was unstable due to the lack of liquidity in the market and the frequent change of listings.

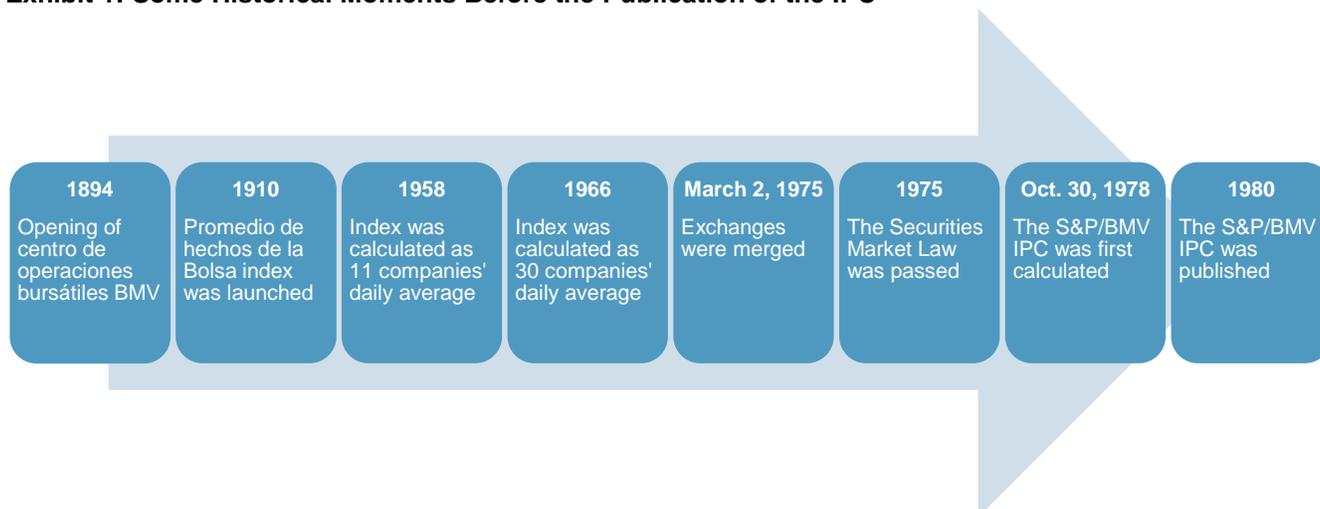
Later on in 1958, the universe was restricted to 11 industrial companies, and the calculation was based on the daily average price. As the capital market grew, the sample of 11 companies became rather unrepresentative. As a result, in 1966, the sample size was changed to 30 constituents, and the calculation methodology was changed to link the average price with the previous value and to introduce adjustments for corporate actions such as splits.²

¹ Banco de Mexico, Mexico, D.F. (1979). "INFORME ANUAL 1978." <http://www.banxico.org.mx/publicaciones-y-prensa/informes-anuales/%7B791F127D-1C3E-42A0-05B9-B6D699D3EEBA%7D.pdf>.

² Bolsa Mexicana de Valores, S.A.B. de C.V. (July 30, 1993). "Folletos informativos de la Bolsa Mexicana de Valores." Section: "Principales Índices de Precios." ISBN 968-6887-04-0.

In October 1978, the BMV started the calculation of the IPC in parallel, making it public on September 1980. Over the course of the past 40 years, the index has evolved, keeping its representation and objectives aligned with the market. In this paper, we highlight the four decades of index history and major milestones, in addition to examining the characteristics of the [S&P/BMV IPC](#) as the iconic symbol of the Mexican equity market.

Exhibit 1: Some Historical Moments Before the Publication of the IPC



Source: Bolsa Mexicana de Valores, S.A.B. de C.V. México, D.F. (1994). "CIEN AÑOS DE LA BOLSA DE VALORES EN MÉXICO 1894-1994." <http://www.bmv.com.mx/es/escuela-bolsa-mexicana/biblioteca>. Chart is provided for illustrative purposes.

A Brief History of the Mexican Stock Exchange

In 1975, the Securities Market Law (Ley del Mercado de Valores) was issued and published in the Official Gazette of the Federation, establishing a framework to consolidate and promote the development of Mexico's capital markets, offering security and new instruments to investors and issuers of financial securities.³

The BMV was the result of the merger of the Bolsa de Valores de Occidente (Stock Exchange of the West), the Bolsa de Valores de Monterrey (Stock Exchange of Monterrey), and the Bolsa de Valores de México (Stock Exchange of Mexico), with the goal of eliminating the regional fragmentation of the stock market. However, the Securities Market Law of 1975 allows multiple exchanges to exist. On Feb. 3, 1976, the new organization under the name of the Bolsa Mexicana de Valores was officially established.⁴

³ "LEY del Mercado de Valores." (Feb. 1, 1975). http://www.dof.gob.mx/nota_detalle.php?codigo=4738228&fecha=02/01/1975

⁴ Bolsa Mexicana de Valores, S.A.B. de C.V. (July 30, 1993). "Folletos informativos de la Bolsa Mexicana de Valores." Section: "La Bolsa Mexicana de Valores." ISBN 968-6516-01-8.

CONSTITUENT COUNT: IS THE S&P/BMV IPC REPRESENTATIVE OF THE MEXICAN EQUITIES MARKET?

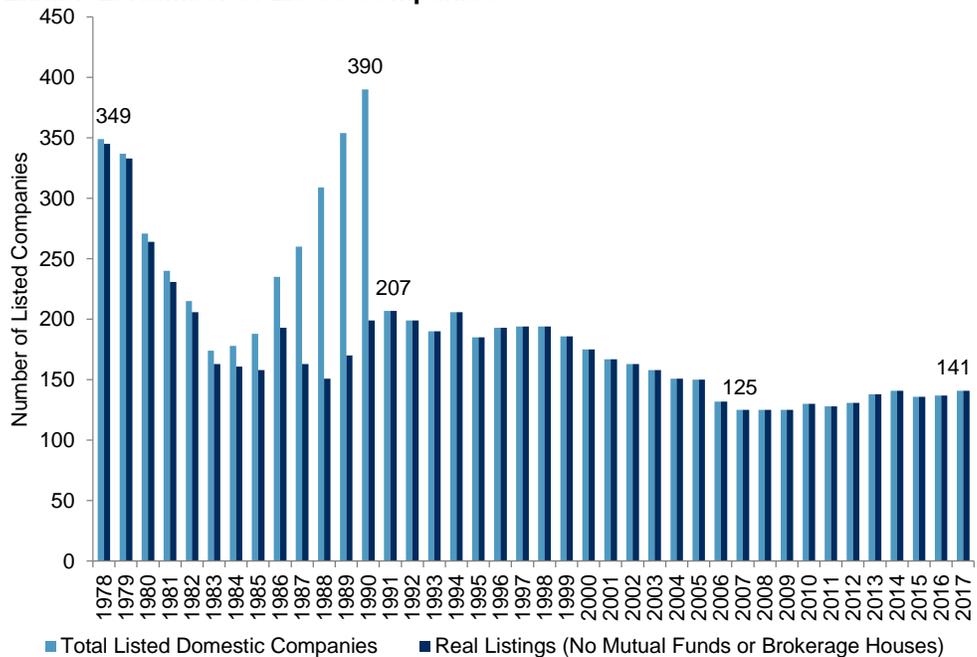
When thinking about the [S&P/BMV IPC](#), the number of components that often comes to mind is 35. However, this number has not always been 35, nor has it always been fixed. As mentioned in the video, "[The Past, Present, and Future of the Iconic S&P/BMV IPC](#)", the index had 42 constituents at its launch. According to the 1993 "Main Price Indices" brochure published by the BMV, in the 1990s, the number of index constituents ranged between 35 and 50.

When thinking about the S&P/BMV IPC, the number of components that often comes to mind is 35.

The number of companies on the BMV in 1978 was higher than those in recent years. The original 42 constituents of the S&P/BMV IPC accounted for 12% of the listings. The number of companies listed has decreased considerably over time, from 345, excluding mutual funds, in 1978 to 141 in 2017. The 35 constituents currently included in the S&P/BMV IPC represent almost 25% of companies listed. Also of note, of the 345 companies listed on the BMV in 1978, the average number of companies traded was 63, representing only 18% of companies listed.

The abrupt decrease in the number of listings stems from changes in the regulatory environment. Prior to 1991, mutual funds were also considered equity listings. From 1978 to 1990, the number of mutual funds listed increased from 4 to 191.

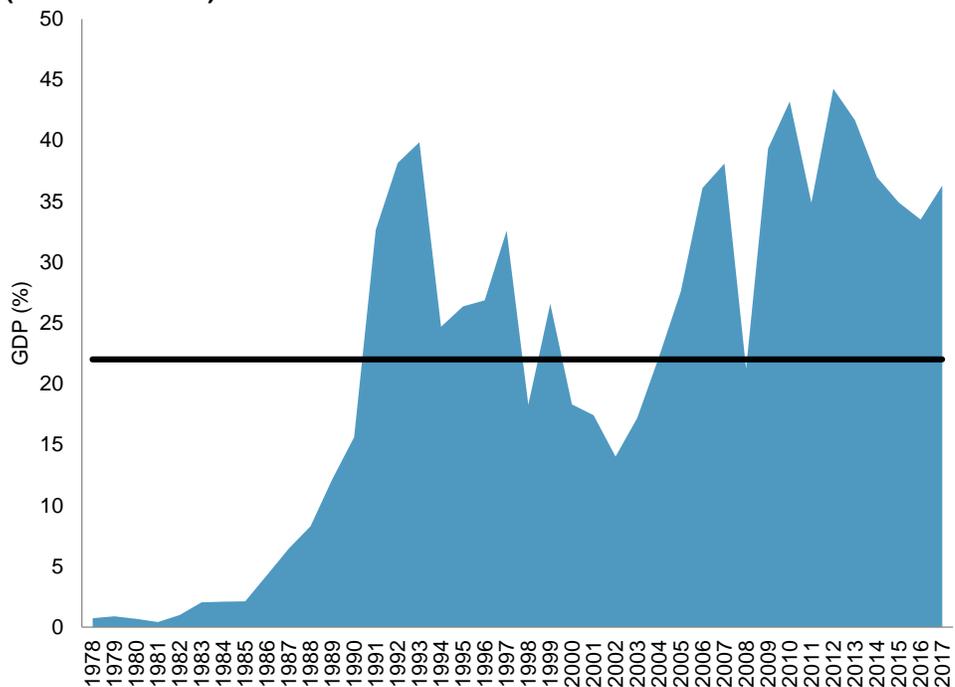
Exhibit 2: Number of Listed Companies



Source: World Bank Group, World Development Indicators, and BMV yearbooks. Data as of 2017. Chart is provided for illustrative purposes.

Despite the decrease in the number of companies listed, we find that the S&P/BMV IPC represents a sizable portion of the Mexican economy, as measured by the gross domestic product (GDP) (see Exhibit 3). From 1978 to 2017, the average market capitalization of listed domestic companies over that period accounted for about 22% of the country’s GDP, reaching a maximum of 44.24% in 2012 and closing 2017 with 36.32%—according to the 2016 preliminary figures of Instituto Nacional de Estadística y Geografía (INEGI).⁵

Exhibit 3: Market Capitalization of Listed Domestic Companies (Percent of GDP)



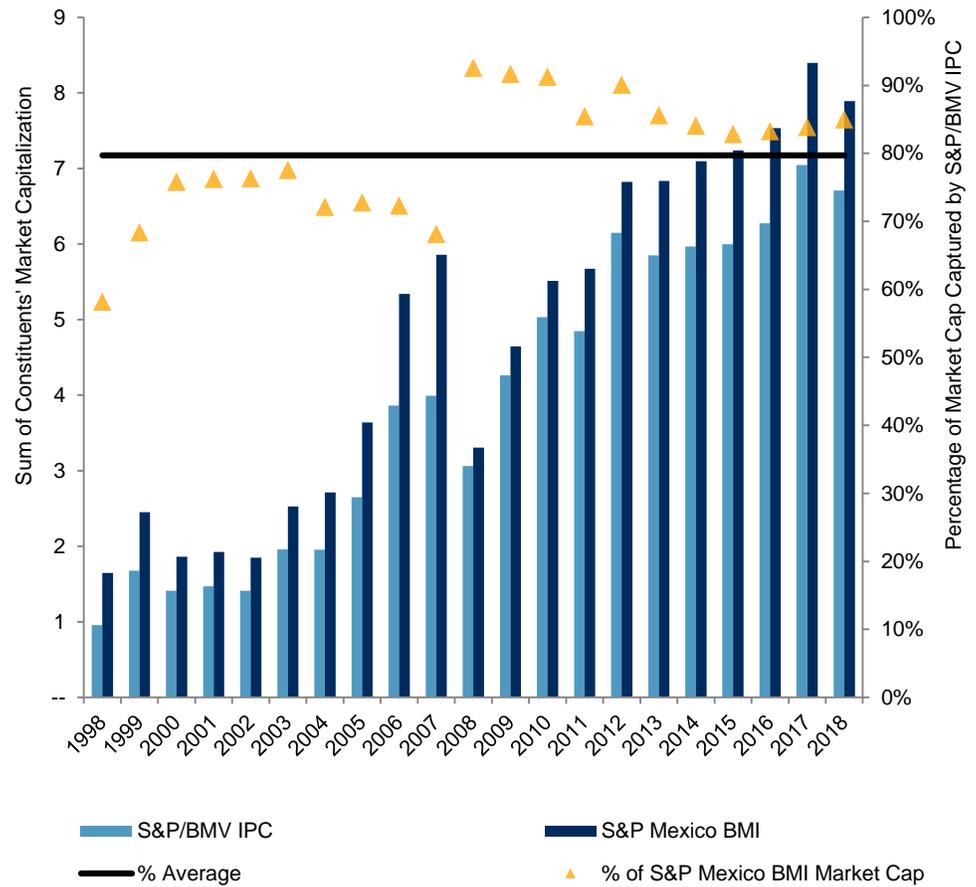
Source: World Federation of Exchanges database. Market capitalization (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic companies. Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded. Data are year-end values as of Dec. 31, 2017. Mexico GDP information for 2017 is from INEGI, preliminary numbers. Chart is provided for illustrative purposes.

The main objective of the S&P/BMV IPC is to measure the performance of the largest and most liquid stocks listed on the BMV.

The main objective of the [S&P/BMV IPC](#) is to measure the performance of the largest and most liquid stocks listed on the BMV. Based on historical 10-year figures, the S&P/BMV IPC captured about 80% of the market capitalization on average. Exhibit 4 shows a comparison of the market capitalization of the constituents of the S&P/BMV IPC versus the S&P Mexico BMI (Broad Market Index) in MXN, which is another broad-based benchmark from the S&P BMI Series and is designed to measure the performance of the Mexican equity market.

⁵ Instituto Nacional de Estadística y Geografía. 2016. <http://www.inegi.org.mx/est/contenidos/proyectos/cn/informal/>

Exhibit 4: Market Capitalization of the S&P/BMV IPC Compared With the S&P Mexico BMI



Source: S&P Dow Jones Indices LLC. Values in Mexican pesos as of last trading date each year from 1998 to 2018. Chart is provided for illustrative purposes.

Frequent rebalancings can potentially result in excessive index turnover, driving up the cost of replication.

With respect to small- and mid-cap companies, the [S&P/BMV IPC CompMx](#), launched on Oct. 16, 2006, serves as the universe from which the size indices, [S&P/BMV IPC LargeCap](#), [S&P/BMV IPC MidCap](#), and [S&P/BMV IPC SmallCap](#), are constructed. Within the S&P DJI benchmarks, one could say that the [S&P/BMV IPC](#) is to the [S&P 500®](#) as the [S&P/BMV IPC CompMx](#) is to the [S&P Composite 1500®](#).

INDEX REBALANCING FREQUENCY MATTERS

Rebalancing frequency of an index is a key aspect of index design, as it impacts the cost of replicating the index. Frequent rebalancings allow the index to maintain a composition that is more aligned with the original objective in terms of constituent selection and weighting. However, frequent rebalancings can potentially result in excessive index turnover, driving up the cost of replication.

The S&P/BMV IPC originally rebalanced twice per month. In its early days, the S&P/BMV IPC was regarded more as an indicator measuring the economic well-being of the local equity market, rather than as a reference

for an investment vehicle through which market participants can gain exposure to the market.

As mentioned in the BMV Index Brochure of 1993,⁶ the index was later rebalanced once every two months until 1999, when the rebalancing frequency changed to semiannual.⁷ The change makes it easier for market participants to monitor and create portfolios that track the IPC. These changes led to the launch of the first ETF with the objective of replicating the performance of a major benchmark in Latin America, the IPC, in April 2002.

To fulfill the requirements of maximum concentration constraints and to keep the weights of the top five constituents within the limits, the weights are adjusted two additional times per year.

From 2012 to 2017, index composition reconstituted annually in August, using reference data from the end of July and changes effective at the open the first business day in September.⁸ The index also reweighted quarterly in December, March, and June.

In the current methodology, the S&P/BMV IPC rebalances semiannually. To fulfill the requirements of maximum concentration constraints and to keep the weights of the top five constituents within the limits, the weights are adjusted two additional times per year.

⁶ Bolsa Mexicana de Valores, S.A.B. de C.V. (July 30, 1993). "Folletos informativos de la Bolsa Mexicana de Valores." Section: "Principales Índices de Precios." ISBN 968-6887-04-0.

⁷ Bolsa Mexicana de Valores, S.A.B. de C.V. (1999). Annual Report. <http://www.bmv.com.mx/docs-pub/informeAnual/uexa53npgqiso03a3q38.pdf>.

⁸ Bolsa Mexicana de Valores, S.A.B. de C.V. (April 11, 2012). "Índice de Precios y Cotizaciones (IPC) Nota Metodológica, Metodología vigente desde el 11 de abril de 2012".

THE CURRENT S&P/BMV IPC

Exhibit 5 summarizes pertinent index construction rules of the [S&P/BMV IPC](#).

Exhibit 5: Mechanics of the S&P/BMV IPC	
Objective	The index is designed to measure the performance of 35 of the largest and most liquid stocks listed on the BMV. Index constituents are weighted by float-adjusted market capitalization, subject to diversification requirements as detailed in Selection Universe.
Index Universe	The index universe consists of all stocks in the equity market listed on the BMV, excluding real estate investment trusts (REITs; Fideicomiso de Inversión en Bienes Raíces [FIBRAs]) and mortgage trusts.
Number of Constituents	The constituent count is fixed at 35.
SELECTION UNIVERSE	
Investable Weight Factor (IWF)	Stocks must have an IWF of at least 0.10.
VWAP Float-Adjusted Market Capitalization	The volume-weighted average price (VWAP) float-adjusted market capitalization must be at least MXN 10 billion (MXN 8 billion for current constituents). The VWAP float-adjusted market capitalization is calculated by multiplying the number of shares outstanding by the assigned company's IWF and by the VWAP over the prior three-month period.
Trading History	Stocks must have a trading history of at least three months. Stocks must have traded on at least 95% of the available trading days over the prior six-month period. For stocks with less than six months of trading history (e.g., initial public offerings [IPOs]), the 95% threshold is applied to the available trading history.
Multiple Share Classes	If a company has multiple share classes, the most liquid share class based on the MTRV over the prior six-month period is selected.
Liquidity Criteria	Stocks must have a median daily traded value (MDTV) of at least MXN 50 million (MXN 30 million for current constituents) over the prior three-month and six-month periods. Stocks must have an annualized median traded value ratio (MTRV) of at least 25% over the prior three-month and six-month periods.
Buffer Rule	Current index constituents remain eligible if they have an annualized MTRV of at least 15% over the prior three-month and six-month periods.
Constituent Selection	If there are more than 35 eligible stocks, then the eligible stocks are ranked, in descending order, based on a combined ranking of VWAP float-adjusted market capitalization and six-month MDTV. The stocks with the greatest rankings are excluded until the constituent count reaches 35.
WEIGHTING SCHEME	
Constituent Weightings	The index is weighted based on float-adjusted market capitalization.
Caps	No single stock's weight can exceed 25%. The aggregate weight of the five largest stocks cannot exceed 60%.
REBALANCING	
Reconstitution	Index composition is reconstituted semiannually , effective after the market close on the third Friday of March and September. The rebalancing reference date is the last business day of January and July, respectively.
Additional Reweightings	In addition, the index is reweighted outside of the semiannual rebalancings, effective after the market close on the third Friday of June and December.
Index Shares Calculation	Index shares are calculated using closing prices 12 business days prior to the respective March and September rebalancing effective date and seven business days prior to the respective June and December rebalancing effective date.
Return Type	Price return and total return (S&P/BMV IRT)
More Indices Available	Leverage and inverse versions of the index are also available.

Source: S&P Dow Jones Indices LLC, [S&P/BMV Indices Methodology](#). Data as of Aug. 6, 2018. Table is provided for illustrative purposes.

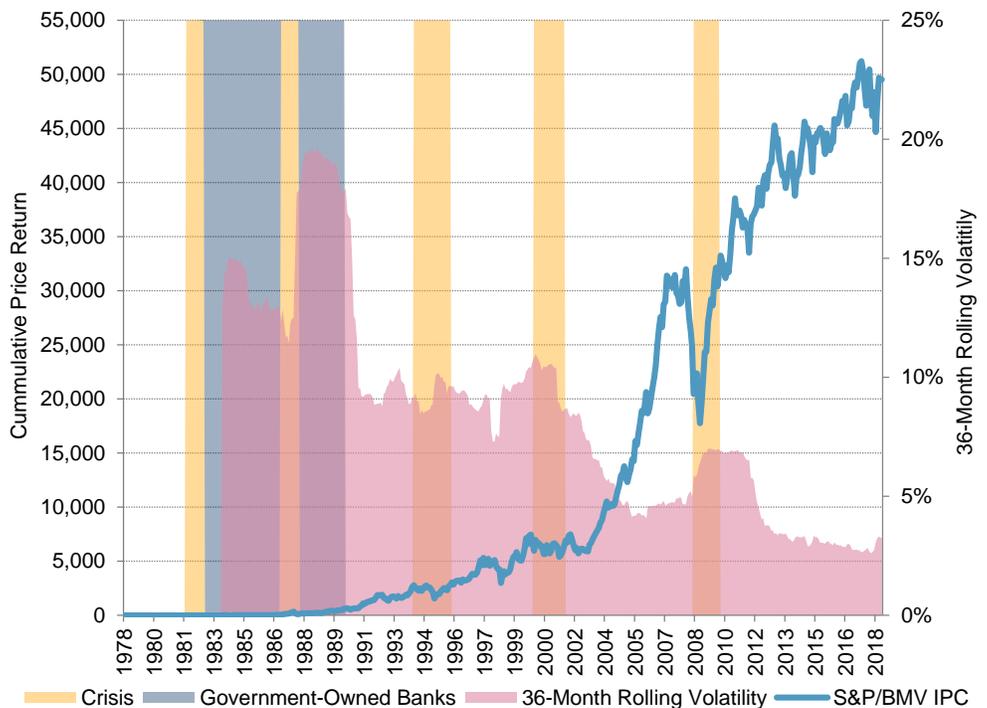
ANALYZING INDEX PERFORMANCE

The initial value of the [S&P/BMV IPC](#) started at 0.78, and increased over time to 781.62 until 1991, when index values were divided by 1,000.⁹ The index included dividends until July 2002, when the S&P/BMV IPC methodology calculation changed to make it a price return index. Simultaneously, the total return version, the S&P/BMV IRT, was created. Historical values for the S&P/BMV IPC were then adjusted accordingly.

The S&P/BMV IPC has experienced significant drawdowns a few times in its history (see Exhibit 6). From April 1979 to May 1982, the maximum drawdown was -70.30%, taking 53 months to recover by September 1983. The second-largest drawdown of -69.24% was in a shorter period, from September 1987 to December 1987, taking 21 months to recover by June 1989. Both of these periods were during times of local crisis. The third-largest drawdown of -44.48% was during the global financial crisis, from May 2008 to February 2009, taking until December 2009 to recover.

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Exhibit 6: Crisis Periods – Volatility and Cumulative Price Returns of the S&P/BMV IPC



Source: S&P Dow Jones Indices LLC. Price returns in MXN. Monthly data from Oct. 31, 1978, to Sept. 28, 2018. S&P Dow Jones Indices initiated calculation of the S&P/BMV IPC on June 5, 2017. Prior to that date, the legacy index was calculated by the BMV. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

⁹ Bolsa Mexicana de Valores, S.A.B. de C.V. (July 30, 1993). "Folletos informativos de la Bolsa Mexicana de Valores." Section: "Principales Índices de Precios." ISBN 968-6887-04-0.

The total return of an equity investment can be broken down into price changes (capital appreciation) or income (dividends and distributions). Therefore, there is a need for both price return and total return indices in order to serve as benchmarks for various types of investment products. The differences between the risk/return profiles of the [S&P/BMV IPC](#) and S&P/BMV IRT are shown in Exhibits 7 and 8.

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Exhibit 7: Risk/Return Profile the S&P/BMV IPC and S&P/BMV IRT

PERIOD	S&P/BMV IRT	S&P/BMV IPC
ANNUALIZED RETURN (%)		
5 Years	6.2782	4.2594
10 Years	8.9773	7.1183
15 Years	15.1937	13.0889
Since June 28, 2002	15.2351	13.1396
ANNUALIZED VOLATILITY (%)		
5 Years	11.0710	11.0529
10 Years	15.4085	15.3593
15 Years	16.0551	15.9868
Since June 28, 2002	16.0290	15.9533
RETURN/RISK		
5 Years	0.5671	0.3854
10 Years	0.5826	0.4635
15 Years	0.9464	0.8187
Since June 28, 2002	0.9505	0.8236

Source: S&P Dow Jones Indices LLC. Monthly data as of Sept. 28, 2018. Index performance based on returns in MXN. S&P Dow Jones Indices initiated calculation of the S&P/BMV IPC and the S&P/BMV IRT on June 5, 2017. Prior to that date, the legacy index was calculated by the BMV. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 8: S&P/BMV IPC and S&P/BMV IRT Index Levels



Source: S&P Dow Jones Indices LLC. Monthly data from June 28, 2002, to Sept. 28, 2018. Index performance based on total returns in MXN. S&P Dow Jones Indices initiated calculation of the S&P/BMV IPC and the S&P/BMV IRT on June 5, 2017. Prior to that date, the legacy index was calculated by the BMV. Past performance is no guarantee of future results. Chart is provided for illustrative purpose.

S&P/BMV IPC CHARACTERISTICS

Sectors

In this section, we will examine the sector behavior in the [S&P/BMV IPC](#), using Global Industry Classification Standard® (GICS®), to describe the Mexican economy in a broad way. GICS is an enhanced industry classification system jointly developed by Standard & Poor's Financial Services LLC and MSCI in 1999. GICS was developed in response to the global financial community's need for one complete, consistent set of global sector and industry definitions and has become the standard widely recognized by market participants worldwide. It sets a foundation for the creation of replicable, custom-tailored portfolios and enables meaningful comparisons of sectors and industries globally.¹⁰

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The most recent change to GICS was announced in November 2017 by S&P Dow Jones Indices and MSCI, with changes impacting the Consumer Discretionary, Information Technology, and Telecommunication Services sectors. Those changes to the GICS structure were implemented on Sept. 28, 2018.¹¹

As of Sept. 28, 2018, eight sectors considering the new mapping¹² were represented in the S&P/BMV IPC. Ranked by their weight in the index, Consumer Staples had the highest weight, with nine companies representing 30.54%. The second-biggest sector is Financials, which had seven companies representing a weight of 20.18%; followed by Communication Services with 17.24% and three companies; Materials represented 17.07% with six companies; Industrials, on the other hand, had six companies but a weight of 10.99%; then Consumer Discretionary added 2.03% with two companies; Utilities represented 1.59% with a single company; and finally, Health Care contributed the remaining 0.37% with just one company representing the sector.

The three sectors that are not represented in the S&P/BMV IPC as of Sept. 28, 2018, were Energy, Information Technology, and Real Estate. However, there have been times when the Energy sector has appeared in the index. For example, from 1998 to 2002, there was representation from the Energy sector by Tubos de Acero de México S.A., which was then acquired in 2002 (see Exhibit 9).¹³

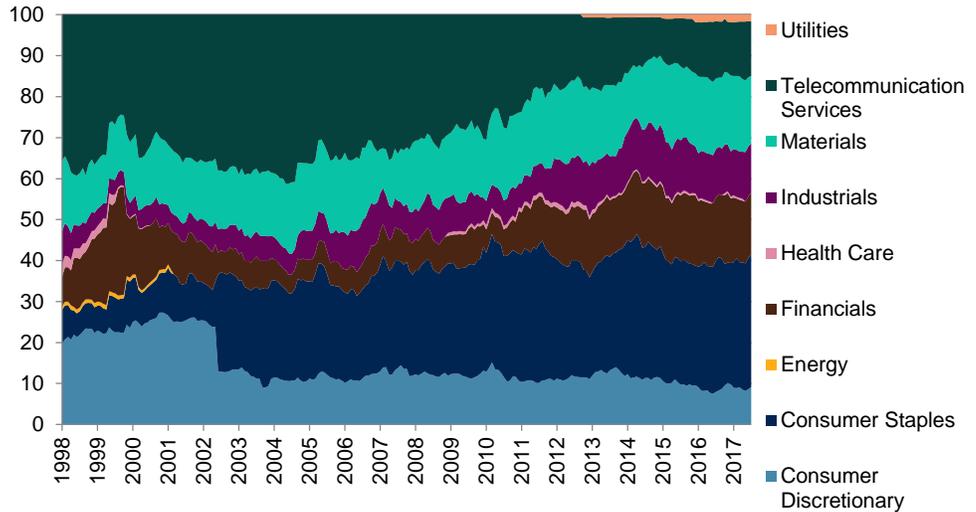
¹⁰ <https://www.spglobal.com/marketintelligence/en/documents/gics-history-brochure.pdf>.

¹¹ For more details, please see <https://spindices.com/documents/index-policies/20171115-gics-2018-revisions.pdf>.

¹² <https://spindices.com/documents/methodologies/methodology-gics.pdf>

¹³ Source: S&P Capital IQ, an S&P Global Market Intelligence tool, a division of S&P Global. Information consulted on July 10, 2018.

Exhibit 9: Historical Sector Weights of the S&P/BMV IPC



Source: S&P Dow Jones Indices LLC, and Factset. Data from Nov. 30 1998, to Aug. 31, 2018. Chart is provided for illustrative purposes.

Exhibit 10 shows the average annual contribution to return by sectors. We calculated the contribution to return on an annual basis from Dec. 31, 1999, to June 29, 2018, and then averaged the results.¹⁴

Exhibit 10: Average Sector Contribution to S&P/BMV IPC Return

SECTOR	AVERAGE WEIGHT (%)	PRICE CHANGE (%)	TOTAL RETURN	CONTRIBUTION TO RETURN
Consumer Discretionary	9.69	9.64	10.81	0.88
Consumer Staples	26.72	13.27	15.22	4.16
Energy	0.20	2.39	3.25	0.01
Financials	12.07	23.22	24.89	2.65
Health Care	0.26	1.01	1.01	-0.01
Industrials	8.01	16.32	18.48	1.06
Materials	15.60	17.21	19.98	2.51
Telecommunication Services	27.23	18.51	20.44	6.29
Utilities	0.23	3.40	4.14	0.02
Total	100.00	15.61	17.57	17.57

Source: S&P Dow Jones Indices LLC, and Factset. Data June 29, 2018. Table is provided for illustrative purposes.

¹⁴ The information shown in Exhibits 9 and 10 does not reflect the most recent changes in the GICS structure.

S&P/BMV IPC AS AN ECONOMIC INDICATOR

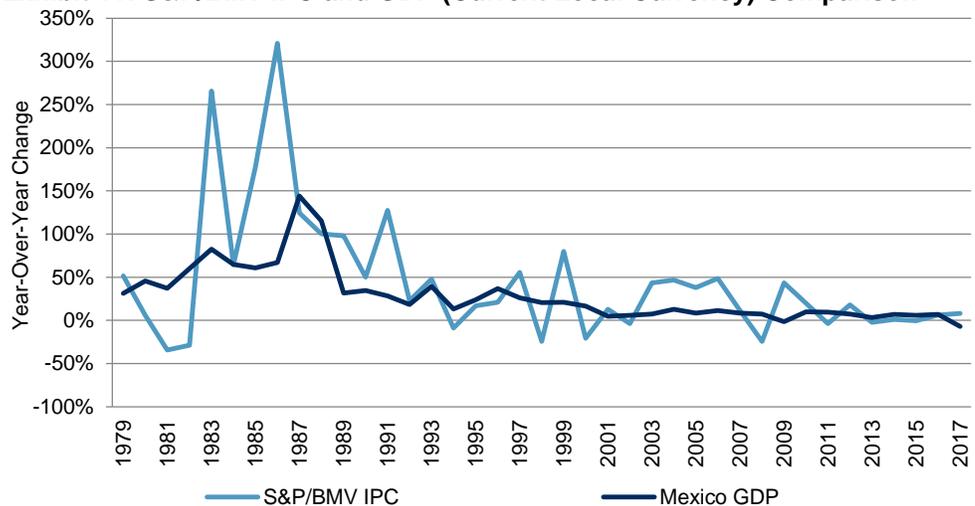
Equity performance of a country is often inseparable from its economic growth. In this section, we will explore the merits of this claim in the Mexican market, using the [S&P/BMV IPC](#).

Like many indices around the world, the S&P/BMV IPC was initially used as an economic indicator. Although the S&P/BMV IPC does not seek to track the entire market, as there are many more public companies in the local market, debt instruments, commodities, real estate, etc., the evolution of the equity market has a close link to economic variables. A clear example of the S&P/BMV IPC being used as an economic indicator is INEGI's Mexican Economic Cycle Clock, which uses the S&P/BMV IPC deflated by the National Consumer Price Index.¹⁵

The evolution of the equity market has a close link to economic variables.

The correlation between the growth of the Mexican economy, shown by year-over-year changes in GDP, and the growth of the capital market, represented by the annual returns of the S&P/BMV IPC, is approximately 57% over the 36-year period studied.¹⁶ The figure illustrates the above average relationship between the Mexican equity market and Mexico's economic growth. Exhibit 11 shows that this relationship increased to 64% in 1987.

Exhibit 11: S&P/BMV IPC and GDP (Current Local Currency) Comparison



Source: S&P Dow Jones Indices LLC, World Bank national accounts data, and OECD National Accounts data files. Data from 1979 to 2017. S&P Dow Jones Indices initiated calculation of the S&P/BMV IPC on June 5, 2017. Prior to that date, the legacy index was calculated by the BMV. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

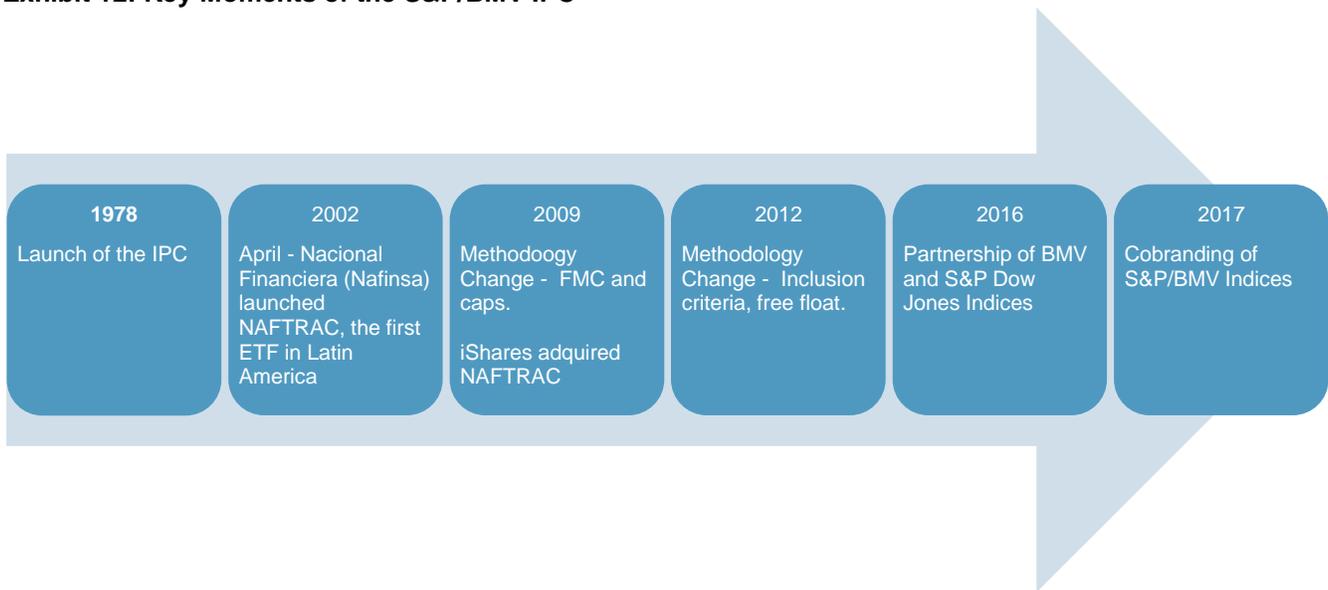
¹⁵ INEGI's [Mexican Economic Cycle Clock](#).

¹⁶ <https://data.worldbank.org/indicator/NY.GDP.MKTP.CN?locations=MX>, last update June 28, 2018.

CONCLUSION

Oct. 30, 2018, marks the fourth decade since the birth of the S&P/BMV IPC. The milestone offers an opportunity to revisit the important role the index plays in the Mexican capital markets. Since its launch, the index has evolved from being a financial market indicator to serving as the basis for index-linked, liquid investment products. Its growth and evolution are a testament to the symbolic role the index plays in the Mexican capital markets. Over the past 40 years, the S&P/BMV Indices have grown substantially to include strategies beyond traditional indices—such as broad-based, select, and size indices—to more sophisticated and advanced indices—such as the target risk and multi-factor indices.

Exhibit 12: Key Moments of the S&P/BMV IPC



Source: S&P Dow Jones Indices LLC. Chart is provided for illustrative purposes.

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