Article

Percentage change in the INPC, food basket and minimum wage in Mexico, January 2002-June 2020

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Abstract

In Mexico, the National Council for the Evaluation of Social Development Policy uses the term income poverty, for this purpose it uses the minimum welfare line, which refers to people whose income is insufficient to acquire the recommended basic basket, equivalent to the value of the food basket per person and that of the welfare line, similar to the previous denomination of patrimonial poverty, equivalent to the value of the food and non-food basket per person per month. Constitutionally, the minimum wage must cover the needs of a family in the material, social and cultural aspect and to provide education. The study period was from January 2002 to June 2020. The information was processed in the statistical program SAS®. The objective of this paper was to estimate the percentage change rate of the national consumer price index, prices of the rural and urban food basket and of general minimum wage to explain the differential between the latter and verify its effect when being above or below the percentage change of the national consumer price index and the VPPCA. In episodes of high inflation, mainly in the food aspect, periods 2004, 2007-2009, 2012-2013 and 2017, the SMG barely compensated part of the increase, with the panorama accentuating in 2017; however, significant increases that occurred since 2015 and in recent periods (2019 and 2020) in the nominal SMG by 16 and 20% have been important in reducing the gap between the real SMG.

Keywords: economy, minimum wage, prices, vulnerability.

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Introduction

The national consumer price index (INPC) is an economic indicator that facilitates the making of economic decisions inherent to the behavior of prices, this is because it provides information to the government, companies and families on the changes that the cost of living has in the country (Flores, 2017), by following the behavior of retail prices of a basket of goods and services, where its increase or percentage change (VP) corresponds to the most used measure for inflation (Alonso and Rivera, 2017). In the methodology of the National Institute of Statistics and Geography (INEGI), for the base year of reference to be the second half of July 2018= 100, 55 cities (located in the 32 entities of the country) were quoted, to collect on average 159 500 prices fortnightly, grouped into 299 generic consumption concepts, which cover 91 branches of economic activity.

The quotations are processed, to give rise to price indices, from which the official national indices that consider concepts of family consumption according to a certain basket of goods and services, which considered the total consumption expenditure of households, are derived, since the weighting structure (updated to the second half of July 2018, via relative prices [the expenditure of each generic product is updated according to the variation of their respective price indices]) was obtained from the expenses reported in the National Survey of Household Expenditures (ENIGH) 2012 and 2013 (survey taken for two consecutive years in 64 000 households, with a survey based on an internationally comparable expenditure catalogue), in complementation with the ENIGH 2014 (INEGI, 2018). One of the most important aspects is the component of the non-core INPC (excludes food and energy prices), of which government authorities are interested in measuring its trends, in this category, the prices of some goods that are very volatile are found, which indicates that price changes are sometimes temporary (Dornsbusch *et al*., 2009).

In the period of the highest year-on-year inflation observed until October 2017, the percentage change of the INPC (VPINPC) was 6.37%, being higher by 3.31 percentage points in relation to the same reference month 2016 (3.06%). Within the core index, the prices of goods and services had a year-on-year change of 5.97% and 3.75% respectively, on the other hand, the non-core index (11.40%), agricultural products reported a variation in prices of 8.37% standing at 3.12 percentage points above that recorded in the same period 2016 (5.25%), with respect to energy products and tariffs authorized by the government, they showed an increase in their prices of 13.36%, being higher by 11.84 percentage points in relation to the one presented in 2016 when it was 1.52% (CEFP , 2017).

Meanwhile, the National Council for the Evaluation of Social Development Policy (CONEVAL) mentions that the main factor affecting the identification of poverty is precisely the purchasing power of household income, precisely in terms of food.

The measurement of poverty in Mexico carried out by the CONEVAL uses the denomination of income poverty, under a methodological scheme induces and evaluates a food basket of prices of products in the rural and urban environment, that is, the measurement of poverty uses two income lines: extreme income poverty line (LBM) , which is equivalent to the value of the food basket (CA) per person per month and income poverty line (LB), which is equivalent to

the total value of the food and non-food basket per person per month. In the last years 2014, 2016 and 2018, the population with income below the LBM has been 24.6, 21.4 and 21 million people, figures that represented 20.6, 17.5 and 16.8% of the population, while the behavior in the LB has been 63.8, 62 and 61.1 million people, being 53.2, 50.6 and 48.8% of the population (CONEVAL, 2020).

The construction of the food basket serves as a reference to obtain the value of the extreme income poverty line, within the generalities of the methodology, the selection of the reference population stratum (EPR) is considered, whose approximation of consumption coincides with some nutritional recommendation, the consumption pattern and the list of products and quantities consumed by the stratum are analyzed according to the items contained in the ENIGH 2016; likewise, it classifies food into 45 items and a percentage of the frequency of consumption and expenditure on food is obtained, selecting those products whose percentage of frequency of food consumption with respect to their item is superior to 10 and that the percentage of expenditure on each food with respect to the total is superior to 0.5%.

For the value of the CA, a base of implicit prices was generated from the information of the ENIGH, where the implicit price of each item was calculated as the geometric mean of the ratios between the expenditure and the amount per item of all the households, to later generate the cost of the basket by multiplying the price by the consumption of each food and thus obtain the monthly cost by adding the costs of all the foods that integrate it, multiplied by 30 (CONEVAL, 2018).

This work aimed to analyze the wage difference and the way in which it is related to the pace of price levels, being the VPINPC one of the most important variables that have influence the growth or decrease of wages, which is perceived by any class, where it is possible to observe how in some episodes of time, it has a possible effect of loss of purchasing power as it is located below headline inflation and PCA, over the years in Mexico.

Materials and methods

The rate of change or percentage inflation (VP) of the INPC (INEGI, 2020), rural and urban PCA (CONEVAL, 2020) and the SMG (CONASAMI, 2020) were considered. According to INEGI (2020) and Brambila (2011), the following equation was used to determine the percentage change rate for the period. $VP= \left[\left(\frac{VF-VI}{VI}\right)\right]*100$; where: VP= percentage change (giving rise to the variables); VPINPC= percentage change in INPC; VPPCA= percentage change in rural and urban PCA; and VPSMG= percentage change in SMG (nominal and real); VF= final value; and VI= initial value. The study was also based on Noriega (2019), which segments periods of food inflation, mainly where abrupt movements occur, which raise the indicators. With the innovation of comparing the different indices with respect to the rate of growth of the VPSMG, to discover if the policy of wage increase has really compensated part of the price increase in Mexico. The information and data were processed in the statistical program SAS®.

Results and discussion

Table 1 shows a description of the base INPC 2018, rural and urban PCA, and average SMG, as well as the VP of each one in the period 2002-2020. In nominal terms, Table 1 shows high inflation events in the PCA as in 2004, 2007-2009, 2012 and 2017. At the beginning of 2006, there was a marked trend in price increases that lasted until 2009.

Table 1. Average value and percentage change (VP) of the nominal INPC, PCA and SMG.

INPC[1/]			Rural PCA		Difference	Urban PCA		Difference	SMG		Difference
Year	INPC (unit)	VPINPC (%)	Value ($/pers-month)	VPPCA (%)	VPPCA-VPINPC (%)	Value ($/pers-month)	VPPCA (%)	VPPCA-VPINPC (%)	Value ($/pers-month)	VPSMG (%)	VPSMG-VPINPC (%)
2002	51.92	5.03	427.67	4.61	-0.42	618.94	4.95	-0.08	1 192.2	5.78	0.75
2003	54.28	4.55	451.26	5.53	0.98	649.98	5.02	0.47	1 245.9	4.5	-0.05
2004	56.83	4.69	483.97	7.22	2.53	694.2	6.78	2.09	1 298.9	4.25	-0.44
2005	59.09	3.99	509.93	5.54	1.55	732.72	5.65	1.66	1 357.2	4.49	0.5
2006	61.24	3.63	509.93	5.54	1.91	732.72	5.65	2.02	1 411.5	4	0.37
2007	63.67	3.97	572.66	6.96	2.99	814.98	6.41	2.44	1 466.4	3.89	-0.08
2008	66.93	5.12	610.6	6.64	1.52	869.92	6.74	1.62	1 525.2	4.01	-1.11
2009	70.48	5.3	673.63	10.38	5.08	952.09	9.48	4.18	1 595.7	4.62	-0.68
2010	73.41	4.16	697.93	3.68	-0.48	990.78	4.11	-0.05	1 673.1	4.85	0.69
2011	75.91	3.41	723.15	3.63	0.22	1 029.1	3.87	0.46	1 741.8	4.11	0.7
2012	79.03	4.11	790.6	9.34	5.23	1 112.6	8.12	4.01	1 815	4.2	0.09
2013	82.04	3.81	838.22	6.09	2.28	1 180.9	6.19	2.38	1 893.6	4.33	0.52
2014	85.33	4.02	873.49	4.21	0.19	1 244.7	5.4	1.38	1 967.4	3.9	-0.12
2015	87.65	2.72	908.8	4.06	1.34	1 279.5	2.81	0.09	2 049.9	4.19	1.47
2016	90.13	2.82	955.06	5.1	2.28	1 337.3	4.52	1.7	2 191.3	6.9	4.08
2017	95.57	6.04	1 021.9	7.02	0.98	1 433.9	7.23	1.19	2 401.2	9.58	3.54
2018	100.3	4.9	1 064.7	4.26	-0.64	1 500.8	4.72	-0.18	2 650.8	10.39	5.49
2019	103.9	3.64	1 112.3	4.5	0.86	1 566.30	4.38	0.74	3 080.4	16.21	12.57
2020	106.5	2.48	1 243.6	4.85	2.37	1 632.94	4.19	1.71	3 696.6	20	17.52

[1/]Base 2018=100. Source: with data from INEGI (2020); CONEVAL (2020).

The inflationary balance was interrupted when the prices of staple crops increased in the world market, however, in 2008 in the world, prices of agricultural inputs and oil fell, while inflation maintained high growth rates (CEDRSSA, 2017). In the difference obtained from the percentage variation, or inflation of consumer prices, and the price inflation of the food basket, it can be noted that in marked years of inflation of the food basket, it sometimes exceeded up to four points, with respect to headline inflation, being the most notorious year 2009 and 2012.

When analyzing the period 2007-2009, the rural and urban VPCA reached more than six percentage points in the first year, being higher than the headline inflation (3.97%), almost twice as much as the latter. In 2009, headline inflation was 5.31% while the percentage of variation in the rural and urban food basket was 10.38% and 9.48% on average, behaving above the headline inflation (5.31%), with meager increases in the SMG of 4.62%.

An improvement was noted in 2010 and 2011 in the rural and urban VPPCA, reaching 3.68 and 4.11% in the first year, while in the second year 3.63 and 3.87% respectively, also the VPSMG, because it reported increases of 4.85 and 4.11% for the referenced period. In 2015, the rural VPCA continued behaving like in previous years (4.06%), on the contrary the urban VPCA had significant improvements (2.81%), a year in which the headline inflation remained at its lowest level (2.72%).

Faced with such a scenario, in 2015 the VPSMG reached 4.19%, precisely in this year, the salary barely adjusted to the increases of the INPC and PCA to acquire this basket; however, PCAs increased more than the SMG. However, 2017 was the year when the headline inflation reached its highest level 6.04%, being above the inflation target (3%) of BANXICO, an impact that was reflected in rural and urban CA (7.02 and 7.23%) respectively. Considering such a scenario and because the value of a CBA is per person and per month, according to CONEVAL's concept of extreme poverty, which refers to a person who shows insufficiency to obtain this basket despite making use of all their income to buy it, if so, assuming that they are head of household, the population had difficulty in meeting their basic needs and those of their family precariously.

For those who perceive an SMG, from 1999 to 2014 it was insufficient, it barely covered the acquisition of the CA, from 2015 the purchasing power of the SMG began to improve in terms of this basket and in 2019 with the increase from $88.36 to $102.68 pesos per day, it was possible to reach this basket at 100%, an action that made that a person who perceives it exceeded the LBM (CONASAMI, 2020).

Figure 1 shows a comparison of the different VP or inflation from January 2002 to June 2020 (2002:01-2020:06), where it was observed that before 2015, the nominal VPSMG was at levels lower than the price inflation of rural and urban CA. Price levels have been higher than the growth rate of the SMG; however, the best years have been 2010, 2011 and 2015; it is also in the latter that the percentage change rate of the nominal SMG begins to be above price levels.

However, the deterioration that the purchasing power of the SMG had in the last four decades, mainly during the eighties and nineties of the twentieth century, was so high (close to 80%), that the recovery of the real SMG in recent years ends up being marginal (Díaz, 2020). High inflation rates in 2017 and events that occurred in the same year, such as the reduction of the government subsidy on gasoline and the beginning of price liberalization, increased this indicator, accompanied by high volatility in the exchange rate, having an impact on the food sector (CEDRSSA, 2017).

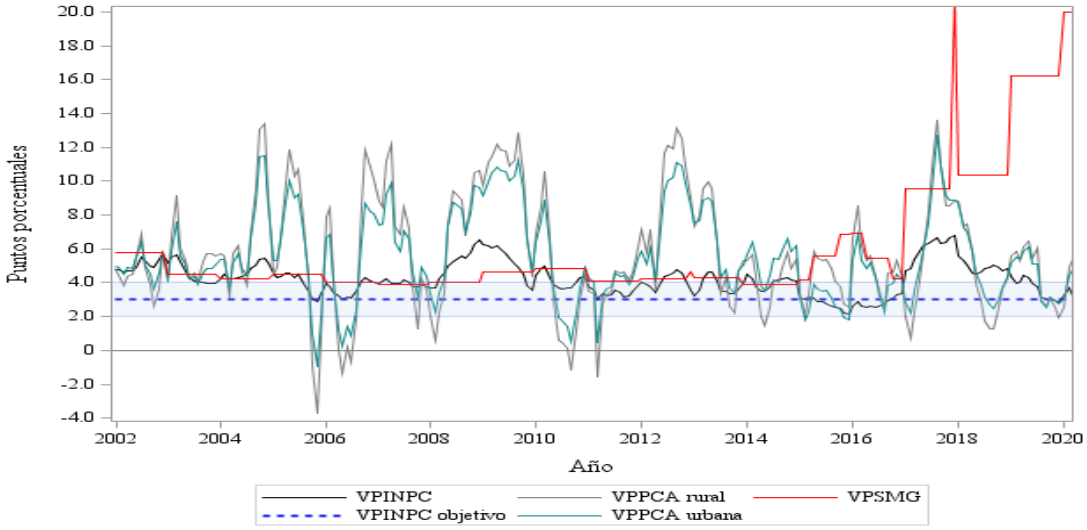

Figure 1. Percentage change (VP) of INPC, PCA and nominal SMG, 2002:01-2020:06. The blue band is the inflation range (3% ±1%) of BANXICO. With data from INEGI (2020); CONEVAL (2020); CONASAMI (2020).

In real terms, the SMG has suffered a profound deterioration for several decades to the point that its amount does not comply with the rules of the Constitution (Moreno *et al*., 2014). The large gaps of separation that Mexico has experienced with respect to the percentage increase in prices, when these have exceeded wage increases, can be considered as a loss of purchasing power in the years in which it occurred, impacting the most unprotected people who truly live with that remuneration in very basic matters. Likewise, the minimum capacity that the SMG has on headline inflation is reiterated, as long as it is high and exceeds the bands of the margin of motion of BANXICO, which must be accompanied by good practices in policy implemented since 2001 by this central bank, which have positively impacted on inflation control, mainly at the beginning of 2015 with low levels until October 2016; however, these have not been sufficient to be reflected in the real SMG.

In 2020, the VPINPC in March, April and May has been 3. 25, 2.15 and 2.84% lower than last year; however, given the outlook of the health crisis due to COVID-19, consumption patterns, use of goods, services and mainly food prices may have new behaviors (Figure 2).

In periods after the highest level of inflation (year 2017), it is seen how during 2018-2020 the nominal SMG increased 39.45%, while the real SMG only increased by 31.31%. Nevertheless, in the last two years, 2019 and 2020, the increase in the nominal SMG has been significant, being 16.21 and 20%, as in the case of the real SMG 12.13 and 17.11%, respectively (Figure 1 and 2). According to Díaz (2020), in 2020 the nominal SMG should have been $320.00 pesos; that is, more than double of that recorded in this same period ($123.22 pesos), to compensate for the lag or stagnation that the real SMG has maintained; however, large increases must be gradual in order to reduce the gap between the two.

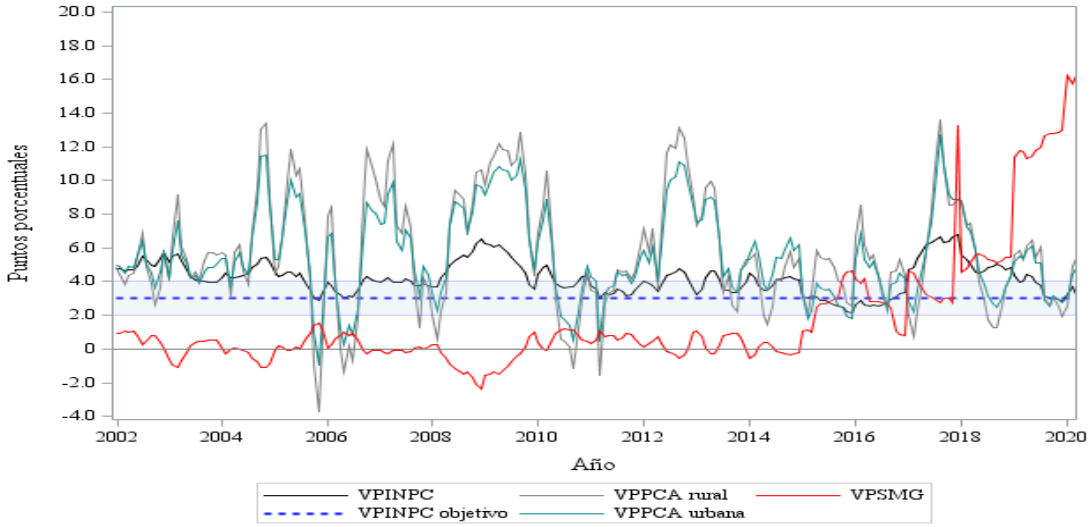

Figure 2. Percentage change (VP) of INPC, PCA and real SMG, 2002:01-2020:06. The blue band is the inflation range (3% ±1%) of BANXICO. With data from INEGI (2020); CONEVAL (2020); CONASAMI (2020).

According to Galicia and Martínez (2020), the behavior of the VPINPC during 2018 remained outside the objective of the Bank of Mexico (BANXICO). However, in subsequent periods it has remained low, where core inflation barely varied 0.94 percentage points, in contrast to non-core inflation, which does not omit volatile prices such as fuels, among other goods, that is between 6.99 and 9.15%.

The inflation associated with energy products and authorized government tariffs registered a rebound from the second quarter of 2018 extending until September, with the behavior of the component of agricultural products being the opposite; however, despite the increasing pace observed during 2018, the VPINPC began to decline at the beginning of September 2018, coinciding with the performance of the non-core sub-index, specifically that of the energy products, a situation that has impacted with improvements to the headline inflation target in 2019 at a slower pace associated with slow economic growth.

However, the trends of expectations that have been downward since 2018 in headline inflation have been pressured by the external environment and the change in government administration. Particularly, the evolution of fuel prices must be monitored because they have a high impact on inflation, worsening if the exchange rate deteriorates, since 70% of the national consumption of gasoline and diesel comes from abroad, where at least 50% of the price at which they are sold in the market is explained by the payment of distributors to suppliers (Galicia and Martínez, 2020).

A key aspect during the six-year period 2013-2018, in the social development sector program, mentioned that the increase in food prices is among the main causes of the high levels of poverty of the population, which has impacted on the purchasing power of household income (SEDESOL, 2018), being the main explanation for the disconcerting behavior of income poverty indicators

(Noriega, 2019). In this way, Noriega (2019) assumes that as food production recovers mainly in the United States of America (USA) and the prices of staple crops in the world fall, inflation decreases slightly, a figure that represents less than half of previous years.

In Mexico, the behavior of the prices of energy products, fruits and vegetables, other services, processed foods and livestock products mostly direct the rate of rise or decrease in the INPC, in the composition of this index, agricultural products represent 5.1%, products such as tomato, potato and other tubers, beans and apple contribute with the largest participation, while livestock products 6.6%, with beef, chicken, pork and egg contributing the most (SIAP, 2020).

However, it is observed that a true price policy has not been implemented, with repercussions of price increases mainly in the agricultural sector, which is where products are truly affected by seasonality and climatic uncertainty, impacting on consumption habits of individuals and families, who can barely afford to buy the necessary products that provide their bodies with the necessary energy.

According to Noriega (2019), the income level of more than 20% of the national population is compacted, by allocating the largest proportion to food, being affected by the staggered increase in prices, he ends this comment with what was stipulated by SEDESOL (2018) in the sectoral program of social development, mentioning that in most of the period 2005-2013, the growth rate of the value of food baskets was higher than average inflation, resulting in lower purchasing power for food, with effects particularly on families with lower income, which spend a greater proportion of their total expenditure on food purchases.

Article 123 of the Constitution of the United Mexican States prescribes that 'the general minimum wages must be sufficient to meet the normal needs of a head of household, in the material, social and cultural order and to provide with the compulsory education of children' (Guerrero and Lomelí, 2017). However, in that article it refers to one individual per family, in this way, this salary has been insufficient for two people.

CONEVAL's efforts to measure poverty, based on the evolution of the value of the CA, provide valuable information to monitor precisely income poverty lines of the population and to know their behavior precisely, since CONEVAL defines in the extreme income poverty line to those who can only or are in position to acquire the CA, while the income poverty line are those who can or are in position to acquire the expanded CA (food basket and non-food basket), being the first more vulnerable and to whom a wage compensation policy must be implemented to help their income and meet their basic vital needs, accompanied by social development programs and actions.

According to Heath (2012), in recent years the percentage increase of CA is higher than inflation, which so far is used to determine wage increases. Mexico faces the health contingency in conditions of vulnerability, the humanitarian crisis due to COVID-19 puts advances in social development at risk and may affect vulnerable groups to a greater extent, income poverty could rise between 7.2 and 7.9%, with an increase in extreme income poverty between 6.1 and 10.7 million people by 2020 (CONEVAL, 2020).

Currently, in the face of the global panorama, it is sought to prevent the COVID-19 health crisis from becoming a food crisis, where the main channels of transmission of the impacts of the pandemic are: demand, supply and international trade; in addition, changes in income and consumption patterns are reiterated, under these circumstances the inequality that preceded the pandemic would worsen, as households with lower incomes consume more grains, breads and cereals and less dairy, meat and eggs than households with more incomes. International markets respond well, but their resilience is not assured if the pandemic extends over time, so far, they show a favorable situation (CEPAL and FAO, 2020).

Conclusions

It was verified how the prices of the CA grow at a faster rate than the SMG. This situation reflects that, in some episodes, people have found themselves below the food poverty line, such as that shown in the period 2002-2020, where they have not been in favorable conditions to improve their economic situation, showing reduced purchasing power. However, due to anticipated recurring increases in the nominal SMG in December 2017 and new reforms in subsequent years implemented by CONASAMI in 2019 and 2020, increases of 16.21 and 20% have been achieved, these actions in the face of a new model of gradual and sustained recovery of the SMG, which has helped it to be at least above the headline inflation and the prices of the rural and urban CA.

By investigating periods subsequent (2017) to the highest level of inflation, it is shown how during 2018-2020 the nominal SMG increased by 39.45%, while the real SMG only 31.31%. However, in the last two years, 2019 and 2020, the increase in the nominal SMG has been significant, being 16.21 and 20%, as well as the real SMG 12.13 and 17.11%, individually. However, to compensate for the lag that the latter has maintained, the nominal SMG had to be around more than the double of that recorded in 2020 ($123.22 pesos) to achieve the reduction of the gap between the two, where such efforts will depend on the stability in inflation and that this does not conflict with the SMG to reduce the large differential gap existing between the real SMG.

Cited literature

Alonso, J. C. y Rivera, A. F. 2017. Pronosticando la inflación mensual en Colombia un paso hacia delante: una aproximación 'de abajo hacia arriba'. Revista de Métodos Cuantitativos para la Economía y la Empresa. 23:98-118.

Brambila, P. J. 2011. Bioeconomía: instrumentos para su análisis económico. 1ª (Ed.). Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA). 313 p.

CONEVAL. 2018. Consejo Nacional de Evaluación de la Política de Desarrollo Social. Metodología para la medición multidimensional de la pobreza en México. Anexo único de los 'lineamientos y criterios generales para la definición, identificación y medición de la pobreza'. 68 p.

CONEVAL. 2020. Consejo Nacional de Evaluación de la Política de Desarrollo Social. La política social en el contexto de la COVID-19 en México. 24 p.

CONEVAL. 2020. Consejo Nacional de Evaluación de la Política de Desarrollo Social. Evolución del valor de la canasta alimentaria. Valor de la canasta alimentaria y no alimentaria. https://www.coneval.org.mx/medicion/mp/paginas/lineas-de-bienestar-y-canasta-basica.aspx.0.

CEPAL y FAO. 2020. Comisión Económica para América Latina y el Caribe y Organización de la Naciones Unidas para la Alimentación y la Agricultura. Cómo evitar que la crisis del COVID-19 se transforme en una crisis alimentaria: acciones urgentes contra el hambre en América Latina y el Caribe. 33 p.

CEFP. 2017. Centro de Estudios de las Finanzas Públicas. Evolución de precios. Cámara de Diputados. LXIV Legislatura del Congreso de la Unión de México. 3 p.

CONASAMI. 2020. Comisión Nacional de los Salarios Mínimos. Tabla de salarios mínimos generales y profesionales por áreas geográficas. https://www.gob.mx/conasami/documentos/tabla-de-salarios-minimos-generales-y-profesionales-por-areas-geograficas.

CONASAMI. 2020. Comisión Nacional de los Salarios Mínimos. Informe mensual del comportamiento de la economía. 131 p.

CEDRSSA. 2017. Centro de Estudios para el Desarrollo Rural Sustentable y la Soberanía Alimentaria. Resultados del índice de la tendencia laboral de la pobreza nacional y rural del tercer trimestre de 2017. Cámara de diputados LXIII Legislatura del Congreso de la Unión de México. 18 p.

Díaz, C. M. 2020. El salario real en México 2015-2019. Economía Actual. 13(1):17-20.

Díaz, C. M. 2020. Inflación y salarios reales en México 2015-2019. Economía Actual. 13(2):11-14.

Dornsbusch, R.; Fischer, S. y Startz, R. 2009. Macroeconomía. 10 (Ed.). Mc Graw Hill. 607 p.

Flores, C. L. 2017. Pronóstico del Índice Nacional de Precios al Consumidor. Rev. Iberoamericana de Contaduría, Economía y Administración. 6(12):60-88.

Galicia, M. U. y Martínez, N. A. 2020. Un modelo no monetario de la inflación en México, 2007-2018. Rev. de Economía y Administración. 38:135-170.

Guerrero, C. y Lomelí, L. 2017. Reflexiones teóricas en torno a la propuesta de recuperación del poder de compra del salario mínimo en México. Contaduría y Administración. 62(3):958-971.

Heath, J. 2012. Lo que indican los indicadores: cómo utilizar la información estadística para entender la realidad económica de México. INEGI. 415 p.

INEGI. 2018. Instituto Nacional de Estadística y Geografía. Índice Nacional de Precios al Consumidor (INPC). Documento metodológico. Base 2da quincena de julio 2018. 137 p.

INEGI. 2020. Instituto Nacional de Estadística y Geografía. Índice Nacional de Precios al Consumidor. https://www.inegi.org.mx/temas/inpc/.

INEGI. 2020. Instituto Nacional de Estadística y Geografía. Calculadora de inflación. https://www.inegi.org.mx/app/indicesdeprecios/documentos/Calculadora_de_Inflacion.pdf.

Moreno, B. J.; Garry, S. y Monroy, G. F. 2014 El salario mínimo en México. Economía-Universidad Nacional Autónoma de México (UNAM). 11(39):78-93.

Noriega, A. E. 2019. La inflación alimentaria en 2018. Centro de estudios para el desarrollo rural sustentable y la soberanía alimentaria (CEDRSSA). Dirección de estudios sobre la soberanía alimentaria y nueva ruralidad. Cámara de diputados LXIII Legislatura. México. 23 p.

SIAP. 2020. Servicio de información Agroalimentaria y Pesquera. Secretaría de Agricultura y Desarrollo Rural (SADER). Índice Nacional de Precios al Consumidor (INPC). 4 p.

SEDESOL. 2018. Secretaría de Desarrollo Social. Programa Sectorial de Desarrollo Social 2013-2018. México. 100 p.