

# Absolute and relative surplus value in Mexico (1993-2020)

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## Abstract

This study examines the methods of extracting surplus value in Mexico. Marxist theory identifies two: absolute and relative, assuming that the latter is capitalist. In the case of Mexico, however, it is concluded that the relative mechanism dominates during periods of higher accumulation and the absolute mechanism dominates during periods of lower growth. In order to confirm this, a method has been proposed to decompose the exploitation rate and measure each method's impact. Since the 2008 crisis, the absolute method has become the basic method of extracting surplus value, and therefore, the procedures adopted are described in detail.

**Keywords:** theory of value; exploitation; absolute surplus value; surplus value.

## 1. INTRODUCTION

Marxist theory assumes that capitalist exploitation is fundamentally increasing due to the increase in labor productivity, i.e., it is possible for the exploitation rate, real wages and living standards (relative surplus value) to increase. Given that there has been less economic growth and technical change since the 1990s, the exploitation rate is expected to grow as a result of what Marx (2000) called absolute surplus value: an increase in working hours and a decrease in real wages. Therefore, it is necessary to evaluate the methods of surplus value extraction in Mexico and answer the following question: Which method has been dominant, and what are the modalities in which it manifests itself?

The specialized literature on the increase in the rate of surplus value in Mexico is extensive; for example, studies have been carried out by Martínez (1999), Martínez (2005), Isaac *et al.* (2014), Silva (2016), Martínez *et al.* (2019), Palacios (2019), Valenzuela (2021), Valle and Martínez (2017). The studies confirm that the rate of surplus value has increased and that, since the 1980s, it has been accompanied by wage restraint (interpreted as absolute surplus value), and that underdeveloped countries are more exploited than developed ones. However, they do not develop a procedure that permits the breakdown of the increases in the rate of surplus value into absolute and relative mechanisms. This paper takes a step in that direction by proposing a methodology that measures the impact of each method.

The paper is divided into five sections: this introduction is the first. The second section discusses how to calculate the exploitation rate and statistical difficulties. Subsequently, a methodology is presented for estimating the methods of

extracting surplus value, in which it is observed that no one method consistently predominates but rather depends on the economic context. The fourth section establishes how absolute surplus value has been presented, and finally, we draw conclusions.

## 2. THE EXPLOITATION RATE AND ITS MEASUREMENT

One of capitalism's central objectives is to increase labor's exploitation rate and mass surplus value, thus ensuring the profitability of its investments. Capital has various methods of extracting surplus value, two of which are predominant. The first is to increase the working day without increasing wages, which is known as absolute surplus value (Marx, 2000a). The second expresses the competitive nature of capitalism. By introducing methods that improve productivity for a given wage and working day, more surplus value can be extracted if workers produce the equivalent of their means of reproduction in less time, known as relative surplus value. There is a third option, called abnormal, which occurs when the real wage is less than the value of labor. The methods of extracting surplus value are not alternatives between which the employer has to choose; in reality, both methods coexist and complement each other according to the valorization requirements. As Marx points out, the rate of surplus value is determined by three factors:

[...] 1. the length of the working day, or the extensive scale of the work; 2. the normal intensity of the work, or its intensity such that a certain amount of work is expended in a certain amount of time; 3. finally, the productive power of labor, such that, depending on the degree of development of the conditions of production, the same amount of labor expended in the same amount of time yields a greater or lesser amount of product. *Obviously, very different combinations [of the three] are possible [...]* (2000a, pp. 269-270, own emphasis).

Marx's hypothesis (2000a) is that, given capitalism's productive nature, the surplus value rate is fundamentally determined by its relative share. In this way, two hypotheses can be established: 1) that the exploitation rate increases over time and 2) that the relative part predominates in determining surplus value. The higher the productivity, the higher the exploitation.

### How can the level of exploitation of the work force be measured?

According to Marx (2000, chap. IX), the exploitation rate is the relationship between the mass of surplus value produced ( $p$ ) and the variable capital invested ( $V$ ), i.e.,  $p' = p/V$ . Calculating it for Mexico requires, first, locating which sectors of the economy are productive—those that create, transform, and transfer value—and second, identifying the sectors that are not purely capitalist. This phenomenon occurs in subsistence agriculture and self-employment. Concerning the former, workers in this type of agriculture are not proletarians; they only sell their labor to supplement their income, working mainly on their own plots of land. Meanwhile, the latter refers to self-employed workers who do not have a salaried relationship with a company and do not hire salaried workers.

Both sectors can be measured by the rate of proletarianization of the economy: the percentage of the workforce<sup>1</sup> in salaried employment. Although this rate is lower in underdeveloped countries, the process has historically advanced (Guerrero, 2002). In highly industrialized countries, self-employment and non-capitalist agriculture are of little importance.<sup>2</sup>

The data consulted from the INEGI national accounts system consider the remuneration of the productive branches as variable capital. Still, they are not adjusted for self-employment because, as Valle and Martínez (2017) point out, the statistics may hide salaried relationships, such as professional service providers, who, when paid on a fee basis, are not considered as such, when in reality they represent variable capital but, through the legal framework, it is possible to make their contractual situation more precarious. As we will see later, these form part of the modalities adopted by absolute surplus value.

Self-employment, reported as mixed income, does not necessarily express subsistence units but can produce a small economic surplus. Although, from the point of view of the method of production, these forms of work are not purely capitalist, from the point of view of socio-economic formation, they are relevant for reproduction since they end up using and creating the value of the goods produced in the capitalist part. Thus, the rate of surplus value is calculated as follows:

$$p' = \frac{P}{V} = \frac{PIN - W_p}{W_p} \quad (1)$$

Where  $PIN$  is the actual net domestic product of the economy (monetary value of living labor),  $W_p$  is real productive remuneration.<sup>3</sup> For this research, we start with the definition of productive labor proposed by Guerrero (1990, 1999 and 2000), where the goods produced are material and immaterial, such as some branches of services.<sup>4</sup> Definition (1) is a general starting point to which adjustments can be made according to productive and autonomous work discussions.

In the case of Mexico, several papers have explored the issue; for example, Martínez (1999), Martínez (2005), Mariña and Moseley (2000 and 2001) and Lima (2005) show that there has been a growing trend in the rate of surplus value since the 1980s and have corroborated that the economic restructuring following the stagflation crisis led to greater exploitation of the work force. These papers focus on two lines of research. The first refers to the methodology for estimating rates of surplus value based on national accounts, while the second deals with international differences in rates between developed and underdeveloped countries. In general, both lines of research find that workers in underdeveloped countries are more exploited, a conclusion opposed to that of Marx, for whom the work force of more developed countries would be more exploited because of their higher productivity.

However, the dominant method of estimating surplus value, which could shed light on international differences, is not among the concerns of the literature above. For example, if absolute surplus value carries more weight in underdeveloped countries, this could explain the disparities. Therefore, the remainder of this article focuses on the line of research that studies methods of extracting surplus value.

An exception is the work of Valenzuela (1993 and 2021), in which he argues that a decrease in the hourly value of the work force (remunerated value for each hour worked or real hourly wage) decreased in Mexico between 1988 and 2001 (Valenzuela, 2021), translating into a predominance of absolute surplus value. Silva (2016) follows the same line of argument, reinforcing the idea of a decrease in the hourly value of the work force, at least until 2014. However, he does not clarify whether this presupposes the absolute method. Meanwhile, Palacios (2019) mentions that the decrease in real wages has led to a distribution of income in favor of employers and an increase in levels of labor exploitation, but he does not refer to the methods of extracting surplus value.

The hypothesis is that absolute surplus value has predominated in Mexico because 1) real wages have fallen and 2) labor productivity has not grown significantly. However, in no case is a method shown that allows the breakdown of the increase in exploitation due to technical change (relative) and job insecurity (absolute). As mentioned, the methods do not exist in isolation but are interlinked and complement each other. Therefore, the question would be the following: what primarily explains the increase in the rate of surplus value: the absolute or the relative route?

### 3. EXPLOITATION RATE AND SURPLUS VALUE EXTRACTION METHODS IN MEXICO

This section examines what has happened to the exploitation rate in Mexico. For this purpose, the panorama is generally established and the hypothesis regarding the increasing surplus value rate is verified. A proposal is then made to identify the methods of extracting surplus value. This allows us to observe that the two methods defined by Marx have coexisted and that the relative one is not always dominant. Furthermore, the predominance of one of them will depend on the accumulation process, expressed in greater or lesser difficulties to stimulate productivity.

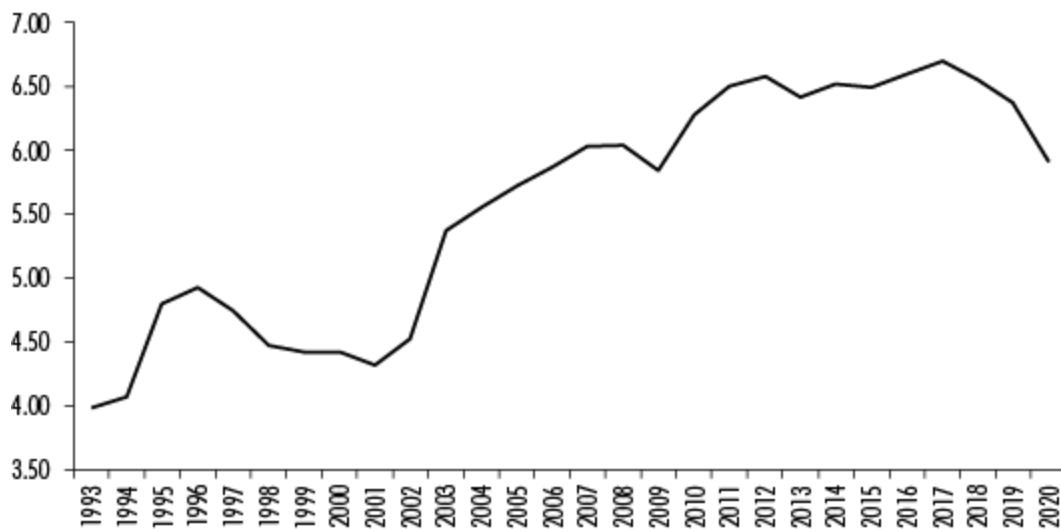
#### The rate of surplus value: 1993-2020

One feature of Mexican capitalism since the 1990s has been wage restraint. According to INEGI (2023), in pesos (MXN) from 2020, the average monthly salary has remained unchanged. In 1993, workers were paid \$11,619. Fourteen years later, in 2007, they earned \$12,269, an increase of only 5.6%. In 2019, it rose to \$12,776, just 4.1% more, meaning that wages have remained stagnant. The minimum wage, which in 1993 was \$104, fell to \$82 by 2007, and it was only in 2010 that it recovered slightly, reaching \$84. By 2017, it had risen to \$123, but such a recovery was minor as it did not affect the average wage because, between 2005 and 2020, 6% of all workers were earning a wage equal to or less than the minimum wage.

There has also been a decline in the number of employees earning between three and five minimum wages and those earning more than five minimum wages. In 2005, 10.5% of workers fell into the latter category. By 2020, only 2.8% were in this situation, indicating a significant increase in job insecurity. However, while the recovery of the minimum wage benefits the lowest-paid workers, it gives the capitalists room to cut the wages of those in higher income brackets. The recovery of the minimum wage does not guarantee the recovery of the average salary.

Figure 1 shows the exploitation rate between 1993 and 2020, and we can see that the trend is upward. Even though productivity increased in 27 years, workers were more exploited in 2020 than in 1993. This confirms that capitalism is a contradictory economic system in which increased productivity does not translate into a general improvement in living conditions.

Figure 1. Rate of surplus value in Mexico, 1993-2020

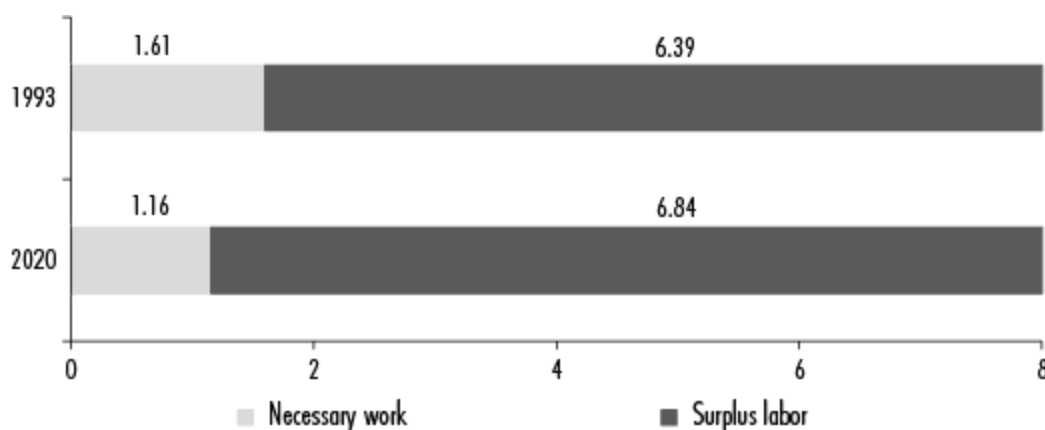


Source: prepared by the author using data from INEGI (2023).

While in 1993, the rate of surplus value was 4, in 2020, it was 5.9. In the first year, capitalists received four units of paid wages as profit for each paid wage unit. In the most recent year, they received 5.9 pesos for each paid wage unit, i.e., exploitation increased by 47.5%. To better understand this, an eight-hour working day can be divided into necessary labor ( $NL$ ) and surplus labor ( $SL$ ). The utilization rate would be  $p' = SL/NL$ . If we divide the working day into  $NL$  and  $SL$ , then  $WD = SL + NL = p'NL + NL = SL + SL / p'$ . If the rate of surplus value is known, we will know how it is distributed between  $SL$  and  $NL$  for any working day ( $WD$ ), where  $NL = WD / (p' + 1)$  and  $SL = p' WD / (p' + 1)$ .

Figure 2 shows the division between  $NL$  and  $SL$  for an eight-hour working day during the study period 1993-2020. It shows that  $NL$  has been reduced due to the boost in production and wage moderation. Workers work less than two hours for themselves during an eight-hour working day, whereas by 2020, only 1.16 hours will correspond to workers.

Figure 2. Necessary and surplus labor in an 8-hour day

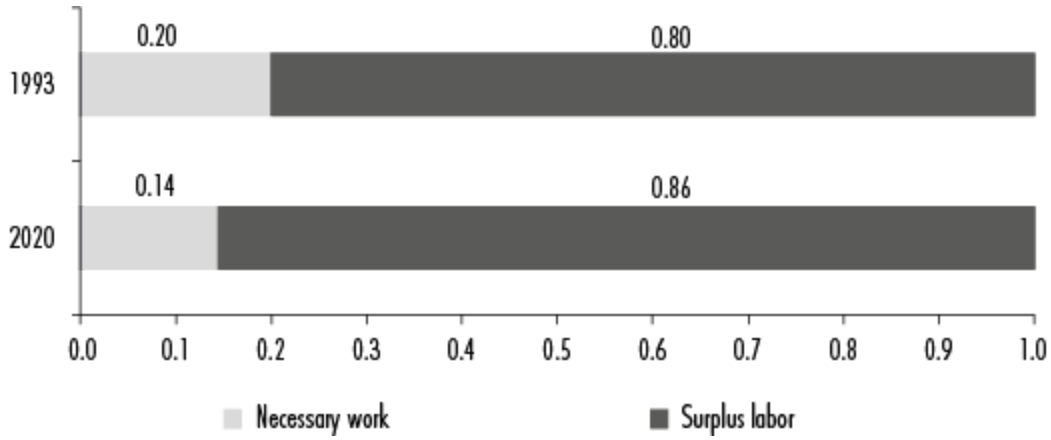


Source: prepared by the author using data from Figure 1.

It is clear that it is not true that workers work first for themselves and then for the capitalists, as Marx (2002) points out, but rather that, from the point of view of the work process, the  $SL/NL$  split occurs every hour. Figure 3 shows the

above relationship for an hour of work, which can be interpreted in percentage terms. While in 1993, paid work accounted for 20% of the working day, in 2020, it was only 14% of the live labor input provided, and employers appropriated 84%, which shows the profound devaluation of the work force.

Figure 3. Necessary and surplus labor per hour worked



Source: prepared by the author using data from Figure 1.

In short, the degree of exploitation increased between 1993 and 2020, as reflected in the decline of the  $NL$ , which represents the value of the work force. Given the stagnation of real wages, the increase in exploitation was not only due to increased productivity. The increase in productive capacities did not improve the conditions of the proletariat, indicating the existence of absolute surplus value. However, to what extent does this explain the increase in the exploitation rate? Does it mean that relative surplus value has been less important?

### Absolute and relative surplus value

To analyze the different methods of extracting surplus value, its rate is broken down into its two components and ranked. From expression (1), it is known that the exploitation rate is equal to the surplus value divided by the mass of real wages in the productive branches. The mass of surplus value is represented as the share of profits ( $\rho$ ) (in real PIN:  $P = \rho * PIN$ ). Therefore:

$$p' = \frac{\rho * PIN}{W} \quad (1.1)$$

If the numerator and denominator are divided by total work, we obtain:

$$p' = \frac{\rho * \frac{PIN}{L}}{\frac{W}{L}} = \rho * \pi_L * w_h^{-1} \quad (2)$$

In expression (2),  $\pi_L$  represents labor productivity, and  $w_h^{-1}$ ,<sup>5</sup> which is the inverse of the average wage since

$$w_h = \frac{w[\$]}{L[hr]} \text{ is the number of hours the work force must work to obtain one unit of real wage } (w_h^{-1} = \frac{L[hr]}{w[\$]})$$

Therefore, if  $w_h^{-1}$  increases, the work force must work more to get the same wage. Now, the growth rate of expression (2) can be expressed as the sum of the variation rates of its three components:

$$\dot{p}' = \dot{\rho} + \dot{\pi}_L + w_h^{-1} \quad (3)$$

In expression (3), it is possible to identify the components that explain each method. Clearly, it can be argued that  $\dot{\pi}_L$  is the component of relative surplus value. Meanwhile,  $w_h^{-1}$  is a component of absolute surplus value. According to the usual way of conceptualizing absolute surplus value, it is proposed that it be expressed using an increase in the working day. This consideration originated from Marx's exposition (2000a) when there was no regular regulation of the maximum working day and overtime pay. Nowadays, in most countries, there are clear labor regulations, and there are no constant modifications that increase the typical daily working day. However, it should be considered that even if the working day is fixed, a reduction in real wages implies that the working day has increased in relation to pay. Let's assume that a worker receives MXN\$200 for an eight-hour working day, meaning their hourly wage is MXN\$25. Now, let's assume that wages change: for the same working day, now MXN\$180, the hourly remuneration is MXN\$20. If the worker wants to maintain their old wage level, they will have to work nine hours, either as overtime or in a different workplace. So, even with a constant working day, the proportion of unpaid work will have increased. Therefore, a reduction in real wages must be considered a component of absolute surplus value.

The case of  $\dot{\rho}$  is not direct: if  $\pi_L$  increases, with a constant wage,  $\rho$  will be higher, representing relative surplus value. Conversely, if  $w_h^{-1}$  increases, with  $\pi_L$  remaining constant, the change in  $\rho$  would represent absolute surplus value. The extreme cases are straightforward; empirically, nothing prevents the variables from changing simultaneously. Should  $\rho$  be computed as an absolute or relative surplus value? During the study period, the changes in  $\rho$  are minor, compared with  $\pi_L$  and  $w_h^{-1}$ , in no year is the exploitation rate fundamentally explained by  $\rho$ . However, on average, it contributed 11% of the changes in the rate of surplus value. For this reason, this percentage has been distributed, as relative or absolute, according to the relative weight of the changes in the other variables:

$$|\dot{\rho}| = \frac{|\dot{\pi}_L|}{|\dot{\pi}_L| + |\dot{w}_h^{-1}|} * \dot{\rho} + \frac{|\dot{w}_h^{-1}|}{|\dot{\pi}_L| + |\dot{w}_h^{-1}|} * \dot{\rho} = Rel_{\rho} + Abs_{\rho} \quad (4)$$

The first summand in expression (4) is the relative surplus value and the second expression is the absolute, so each extraction method is represented as its contribution to the total change in the exploitation rate. Given that a variable can increase or decrease, it is assumed that the total contributions are equivalent to the sum of the absolute value of the growth rates of  $\rho$ ,  $\pi_L$  and  $w_h^{-1}$ :

Absolute surplus value:

$$= \frac{|w_h^{-1}|}{|\pi_L| + |w_h^{-1}| + |\dot{\rho}|} + Abs_{\rho} \quad (5.1)$$

Relative surplus value:

$$= \frac{|\pi_L|}{|\pi_L| + |w_h^{-1}| + |\dot{\rho}|} + Rel_{\rho} \quad (5.2)$$

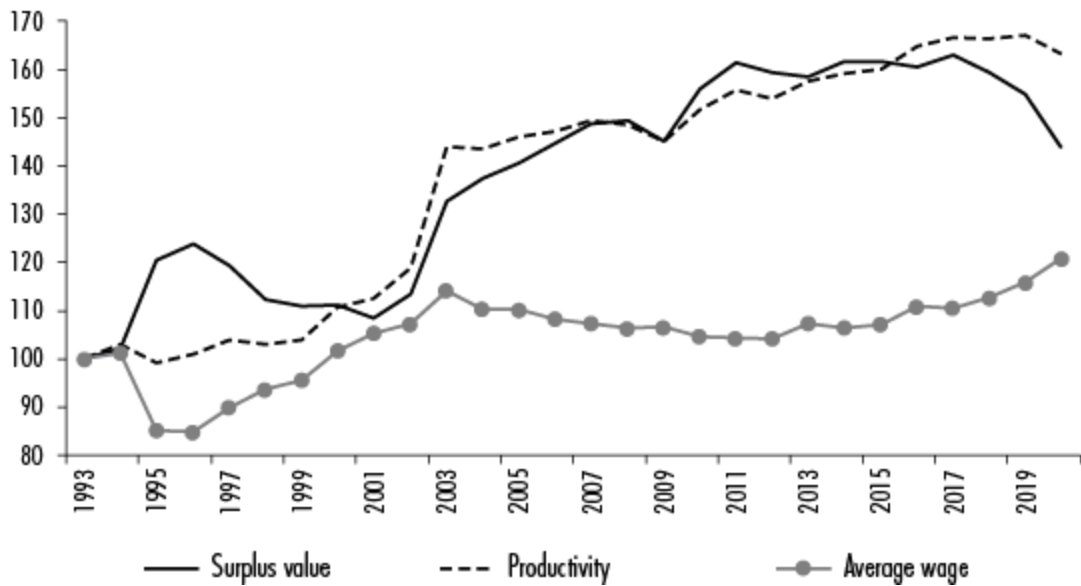
Expressions (5.1) and (5.2) establish the weight of each method over time. The measurements are represented in absolute values because the exploitation rate does not always show positive growth. What is important is the weight of each element in the total change (positive or negative). If the absolute method dominates, the way to extract more surplus will be through wage restraint, which presupposes less capacity for accumulation and increasing productivity. Regardless of the meaning of the variations, the predominance of one method or the other indicates the state of the economy. Greater difficulties in boosting growth will make accumulation depend on wage restraint and vice versa.

The data was adjusted for the number of hours worked to calculate the methods for extracting surplus value. Although the wage per worker increased slightly, this was not necessarily due to the recovery of the wage since the loss of purchasing power forces workers to work longer hours, i.e., the increase in the average wage per worker is not considered as such when the number of hours it has cost them to achieve it is taken into account. A similar thing happens with productivity. If it is measured in terms of employment, it may underestimate that each worker will work fewer hours if the job does not change, but there are technical improvements.

Figures 4 and 5 show the real exploitation rates (1993=100), productivity and wages. The difference is that they were adjusted by the number of hours worked in the second figure.<sup>6</sup> Although it has decreased for some years, the wage per worker has not been close to its 1993 level since 2000 and has been recovering since 2015. When adjusted per hour, the interpretation is different, as it returned to the 1993 level between 2010 and 2018, indicating that, although the economy is more productive, the standard of living is the same as it was 26 years ago. Although there was a slight increase in 2019, it was insignificant. Figure 5 is more consistent since wages have been falling and stagnating since 2008 due to the global crisis and the need for profitability.

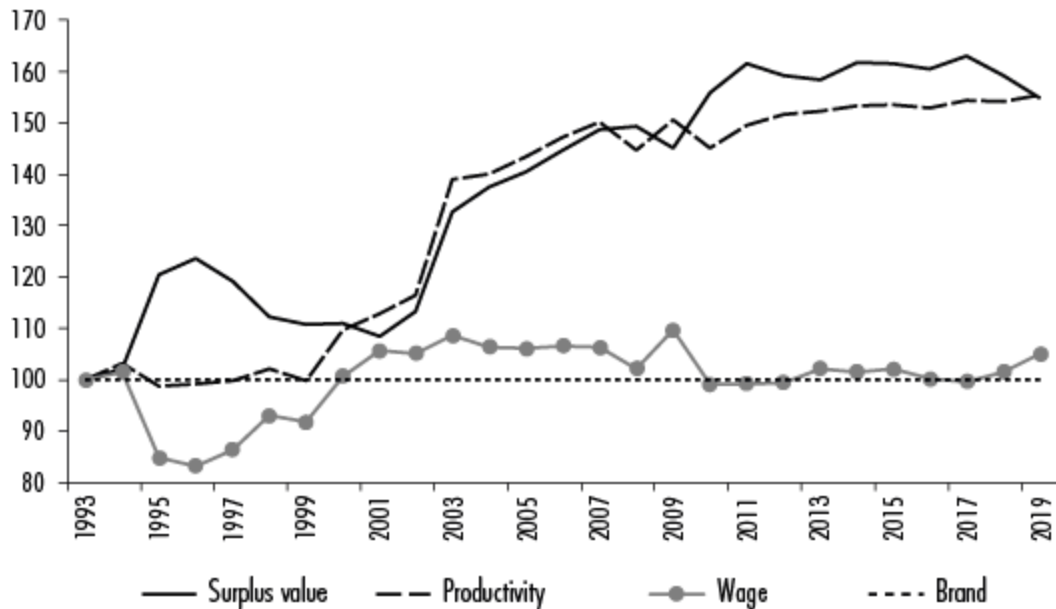
In both calculations, productivity is increasing, but with two nuances. Between 1995 and 1999, it stagnated due to the currency and economic crisis. Therefore, it was not until 2000 that the hourly wage recovered and slightly exceeded its level of 1993. Furthermore, after 2009, adjusting for hours worked overestimated the change in productivity, indicating that recent accumulation in Mexico has been extensive, i.e., with zero technical change. Figure 4 shows that the reduction in the exploitation rate in recent years is the result of a wage recovery. However, this is an illusion, as shown in Figure 5, since real hourly wages did not change and only recovered minimally until 2019, remaining below pre-crisis levels. If the surplus value rate fell, it was because productivity stagnated. Therefore, the only way to grow is to mobilize more labor, expressed in the increase in the number of hours worked, a component of absolute surplus value.

Figure 4. Actual exploitation, productivity and wage indices per worker. Mexico, 1993-2020



Source: prepared by the author using data from Figure 1.

Figure 5. Actual exploitation, productivity and wage indices per hour. Mexico, 1993-2019

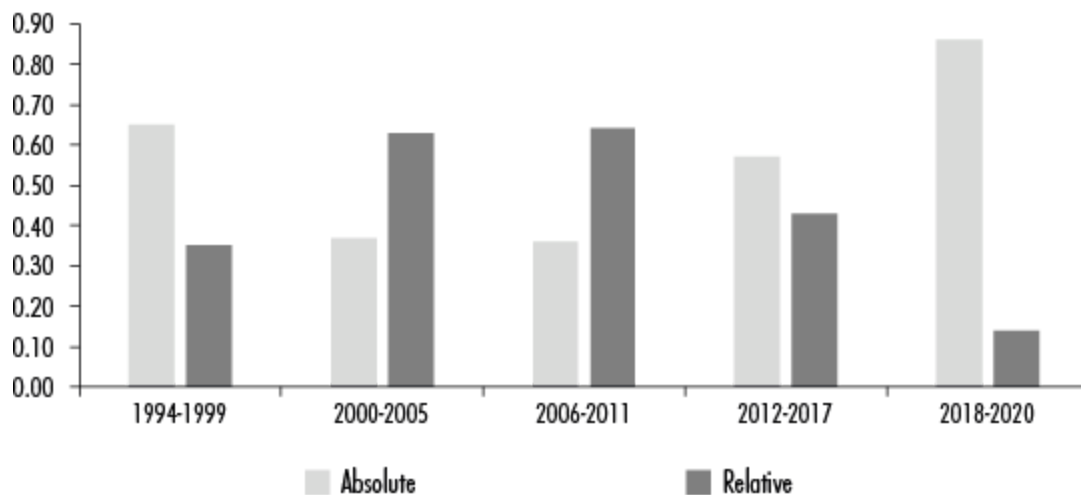


Source: prepared by the author with data from Figure 4 and adjusted with OECD data (<https://data-explorer.oecd.org>) for the hours worked.

Figure 6 shows the calculation of the methods for extraction of surplus value for five-year periods. There is no single method, only periods in which one is predominant. The first conclusion is that methods for extracting surplus value always coexist, but what determines which dominates? Of the five sub-periods, there are two in which the relative method dominates and three in which the absolute method dominates. Since 1993, the absolute mechanism has accounted for the rate of surplus value most of the time. The periods of greatest relative surplus value were those of most significant accumulation when the economy recovered from the 1994 crisis until the global crisis in 2008. During this period, more than 60% of the variations in the rate of surplus value can be explained by the effects of

labor productivity. Since the global crisis, exploitation has (increasingly) depended on the absolute route, which between 2012 and 2017 explained 57% of the variations and, in the last two years, determined 86% of the rate of surplus value. The absolute approach, as well as becoming consolidated, has become fundamental for capitalists.

Figure 6. Methods for the extraction of surplus value in Mexico, 1994-2019 (adjusted per hour)



Source: prepared by the author with data from the previous figures.

Increasing productivity allows capitalists to make surplus independent of both wages and the length of the working day, thus reducing  $NL$  and allowing workers to maintain their standard of living. As Marx (1971) says, relative surplus value insofar as it expresses the real subsumption of labor under capital is the purely capitalist form of exploitation. When there is difficulty in innovating, employers resort to absolute mechanisms so accumulation can only continue by mobilizing more workers, increasing the working day or reducing wages. In Mexican capitalism, the working class's reproduction conditions have deteriorated.

#### 4. THE MODALITIES OF ABSOLUTE SURPLUS VALUE IN MEXICO

As mentioned above, the absolute surplus value has dominated in recent years due to economic stagnation and slower growth in productivity. This situation means that expanding the mass of surplus value depends on the wage control exercised by companies. It demonstrates weakened capitalism that can only exist by passing on the costs to the workers.

Marx considers that absolute and relative surplus value can be associated with the formal and real subsumption of labor under capital. He argues that the latter expresses the specifically capitalist nature of the search for more surplus value since it requires the development of productive forces so that the workers are subordinate to the machine. Capitalists can also subordinate labor to capital in other ways, concerning the formal relationship that workers have as salaried workers. This mechanism for obtaining increased surplus value can occur through forms of production that are not strictly capitalist, as happened during the development of manufacturing at the dawn of capitalism (Marx, 1971). These forms of subordination are absolute surplus value, Marx points out:

[...] [On the] basis of a pre-existing form of working, i.e., a *given* development of the productive force of labor and the corresponding modality of labor, which relies on the *extension of working*

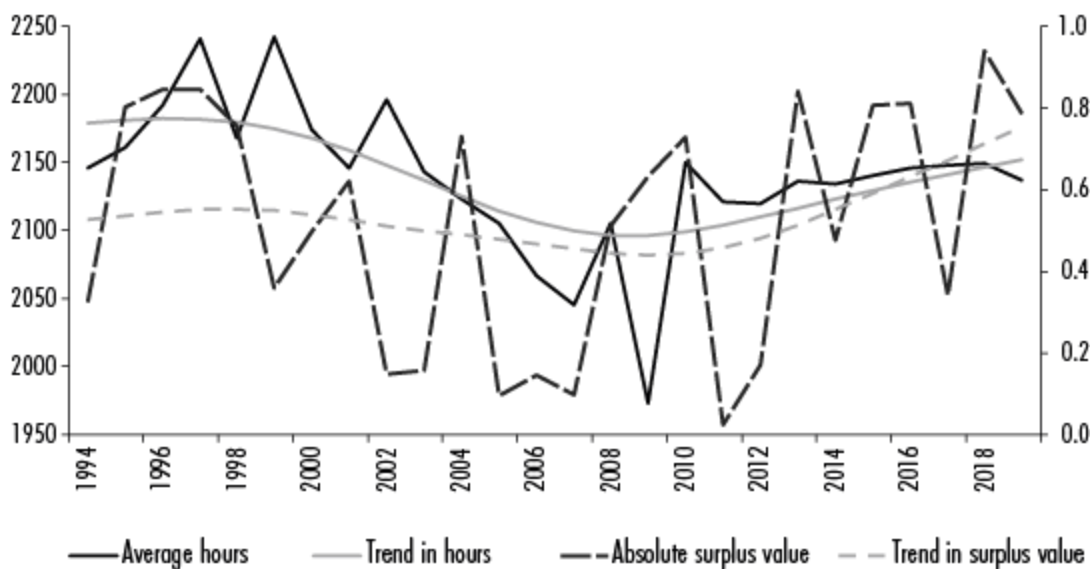
time, i.e., in the form of *absolute surplus value*. As the only way to produce surplus value, this modality corresponds to the *formal subsumption of labor under capital* (1971, p. 56, emphasis in the original).

When technical change is taken into consideration, it can be related to the real subsumption of labor: "Just as the production of absolute surplus value can be regarded as the material expression of the formal subsumption of labor under capital, so the production of relative surplus value can be regarded as that of the real subsumption of labor under capital" (Marx, 1971, p. 60).

The extension of the difficulties of innovation and accumulation leads to a worsening of the living conditions of the workers. Since the mechanisms of absolute surplus value correspond to formal subsumption, they have a delay component because they are more draconian. Unlike real subsumption (relative surplus value), wages can only be increased by working more hours subject to worse conditions than before.

Figure 7 shows the average number of hours worked per year and the share of the rate of surplus value explained by its absolute component. After 2000, the number of hours worked declined and increased significantly after the crisis. Meanwhile, the increase in productivity between 2000 and 2007 permitted a recovery in real wages per worker and a reduction in the annual working day. However, as wages stagnated after the crisis, workers were forced to increase their working hours: since 2009, the oppressed have worked more and earned less.

Figure 7. Absolute surplus value and average hours worked (right axis) in Mexico, 1994-2019



Source: Figure 6 and the OECD (<https://data-explorer.oecd.org>) for hours worked.

Returning to Figure 4, we can see that the wage per worker increased, especially after 2018 when the policy of minimum wage recovery began. However, living conditions have not improved because the higher wage bill is due to longer and more intense working hours. Since 2009, accumulation has been extensive: the only way to grow is to

increase the amount of work. If we define  $PIN = \frac{PIN}{L} * L$ , its growth rate shall be  $\dot{PIN} = \pi_L + \dot{L}$  and, therefore, the increased difficulties of innovating drive the need to mobilize more labor. Between 2010 and 2019 (from recession to recession), productive employment grew on average 1.4% per year and PIN 2.6%. The difference

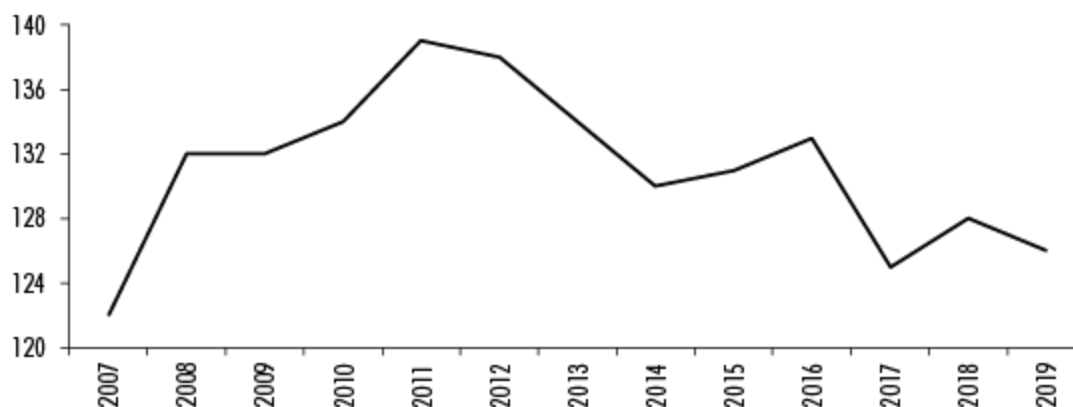
between the two is not explained by the increase in hourly productivity, which increased by only 0.3%. The difference is explained by the fact that each employee had to work more hours. The growth rate of total hours worked (productive employment) was 2.3%, which, together with the productivity growth, explains the increase in the PIN. As Marx (1971) points out, in order to mobilize more work, capitalists will always prefer to make existing workers work harder rather than hire more, both for legal and cost reasons (in the case of layoffs), as well as for political reasons, since bringing together more workers implies greater possibilities for organization.

Absolute surplus value is considered to be anything that reduces workers' wages or forces them to work longer hours. Although each of the absolute modalities is not usually broken down (for example, Isaac *et al.* (2014) speak in general terms about the regressive or absolute mechanism), at least five forms can be identified as they represent the formal subsumption of work: 1) labor flexibilization (Garavito, 2001), 2) longer working hours (Foladori and Melazzi, 2009, chap. 6), 3) informality (Wilson, 2020), 4) gender pay gaps (Cockshott, ch. 9), 5) child labor, and 6) anomalous or abnormal surplus value (Marx, 2000a, p. 313).

Although the issue of labor flexibility is broad, it can be linked to lax regulation that allows companies to reduce their dismissal costs and to introduce mechanisms that convert part of the salary per working day into a piecework salary depending on individual performance, which forces workers to work more intensively at the risk of a lower wage. Cheap dismissals make formal employment fragile.

The flexibility of work, together with the increase in hours worked, leads to a more intense working day. Generating a work intensity index is not easy because it is specific to each process and depends on the technical possibilities of the machinery and the business control within the production units. One way to estimate intensity is to look at the incidence of work-related accidents. The more intense the working day, the greater the risk of making mistakes due to stress or fatigue. Figure 8 shows the number of accidents per 10,000 workers and includes accidents in the workplace and those that occur while traveling to and from work. Control, supervision and work-related stress lead to a greater propensity for accidents.

Figure 8. Work-related accidents per 10,000 workers, 2007-2019



Source: prepared by the author based on data from the Ministry of Labor and INEGI.

Due to the prevalence of absolute surplus value, accidents at work increased between 2007 and 2012. They subsequently decreased but did not return to pre-crisis levels. The working day has become more intense, and its effects can also be seen in the incidence of disease in Mexico, not as a result of "bad habits" but because low wages

and less time available prevent people from taking care of their health; junk food (with less nutritional value) is easier to obtain and consume.

The informal sector (where there is no job security, severance pay or social security) is complex from a Marxist point of view because, although it includes self-employment, there is also salaried labor. Activities such as trading in street markets or the retail sale of products are clearly capitalist in nature, where employers take advantage of deregulation to hire workers informally to produce surplus value.

Although the analysis of these activities requires a separate study, it can be noted that informality in the Mexican case represents part of the absolute surplus value in two ways: 1) it exerts downward pressure on wages since workers are engaged in less productive activities and receive lower wages, consolidating a latent industrial reserve army (the double threat of unemployment and informality); and 2) they will not be able to access a pension (or will find it challenging to do so). Therefore, they will have to remain in the work force even after age 65, creating greater competition among workers and making older workers willing to work for low wages (age becomes a reason for discrimination and exclusion). Furthermore, it allows employers to avoid paying retirement social security contributions, which are part of the wage fund. Due to informality and the reforms of the Mexican Social Security Institute (IMSS) in 1997 and the Institute of Security and Social Services for State Workers (ISSSSW) in 2007, the decrease in access to pensions has transferred these resources to capitalist profits.

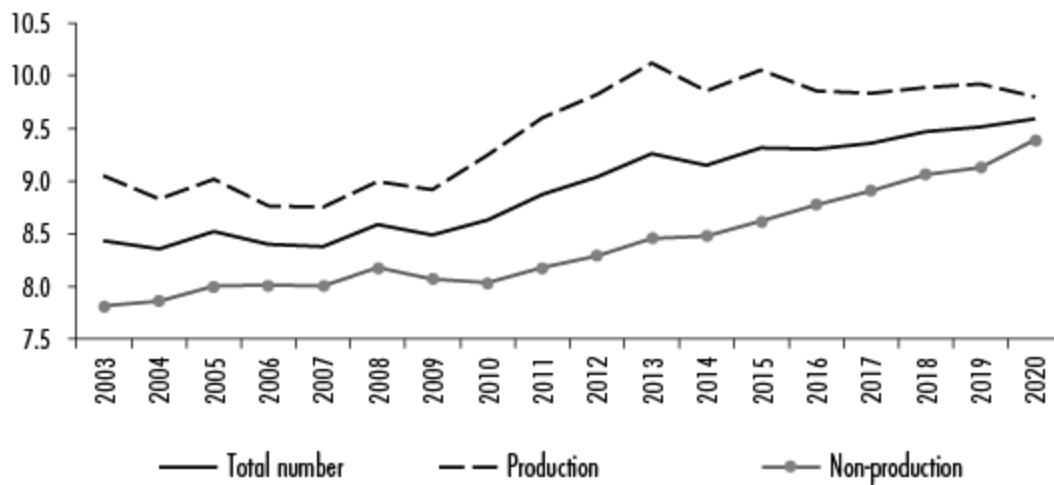
According to Wilson (2020), the flexibilization and precarization of work are part of absolute surplus value and show a return to the dominance of the formal subsumption of labor:

Both precarious and informalized workers constitute a “disposable” work force that can be hired during periods of economic expansion and discarded during recession and economic contraction [...]. Both enable an increased capital accumulation through cutbacks in the wage bill by employing only “core” workers [...]. This is the “flexibilization” goal and policy of capitalist firms to enhance competition and realize greater profits (p. 477).

[...] Since the workers in outsourced plants in the periphery earn a wage much lower than core workers in the core capitalist countries (and even less than most peripheral workers in core capitalist countries), the absolute surplus value increases. In some ways this means a regression to the formal subsumption of labor [...] (p. 480).

In Mexico, more than half of all workers are in the informal sector: without access to health care or protection against dismissal, they are also unable to generate the stability that would allow them to increase their wages based on their seniority. Furthermore, employers have managed to evade some of their contractual responsibilities. As shown in Figure 9, the proportion of subcontracted workers (those who work most of the time at a different location from where they were hired or who are hired on a fee basis)<sup>7</sup> has increased since 2007. The percentage of production workers is higher than that of non-production workers because this group of workers produces surplus value. Fee-based workers, on the other hand, are disguised wage earners who bear the monetary cost of filing taxes and are forced to spend part of their free time doing so.

Figure 9. Employees not dependent on the head office % of the total, 2003-2020



Source: prepared by the author with data from INEGI.

So far, it has been assumed that all workers are exploited to the same extent. However, capital uses other differences to exploit them even more, such as gender. Women's wages are usually lower than their male counterparts, implying a gap in remuneration and part of the absolute surplus value. Although they are equally productive, they are paid less. An objection to this reasoning could be that women work in less productive activities, hence their lower wages. However, according to the INEGI economic censuses, the distribution of the male and female workforce is similar: 75% of both groups work in the same activities.<sup>8</sup> The lower remuneration is explained by the lower participation rate in the labor market<sup>9</sup> of women compared to men, 44.8% and 77.3%, respectively, in 2019.

Between 2005 and 2019, women earned 29% less than men. Furthermore, the inequality in the distribution of wages was more significant for women: while 12.1% of male workers received an income below the minimum wage in 2018, the figure for women was 22.1%. Meanwhile, 5.1% of workers received an income greater than five minimum wages (the maximum considered by INEGI), while only 3.5% of female workers received this.

Job insecurity and increased exploitation have been more severe for female workers for reasons unrelated to productivity. Therefore, a reasonable hypothesis is that the female workforce is exploited more than the male workforce, a significant feature of absolute surplus value. Further research should focus on understanding the dynamics of such gaps and their bearing on absolute value.

Another aspect of absolute surplus value is the unfortunate existence of child labor. According to the National Survey on Child Labor, in 2019 nearly 2.2 million children between the ages of 5 and 17 worked, 7.5% of the child population in that age group. Their jobs are more precarious, and they receive lower wages in more strenuous conditions, not only because of the nature of the work but also their physical development. Of the children who work, just over 30.1% work more than 36 hours, i.e., full-time. Many work in physically demanding jobs such as agriculture or extractive industries. The future health of these children is compromised, and it also prevents them from attending school and receiving a quality education. Although these young workers are not the majority, they do represent a major tragedy: children belong in school and at play, not in dark and dreary exploitation centers.

The last form (the least studied) is anomalous or abnormal surplus value. The name concerns the established assumption from which Marx (2000) wrote: labor-power is paid for at its value. It is known that not all wages are equal; therefore, a discussion must be established with respect to the segment of the work force that earns a wage

below its value. According to Marx, this mechanism is based on competition between workers and capitalists. The former are not allowed to reject such low wages; for the latter, it becomes an instrument of competition that increases their ability to reduce costs and set lower prices. Marx (2000a, pp. 312-313) says:

[...] If one laborer does the work of one and a half or two men, the supply of labor increases, although the supply of labor power on the market remains constant [...]. The unpaid part of the labor price need not be reckoned in the price of the commodity; it may be presented to the buyer as a gift. This is the first step to which competition leads. The second obligatory step is to exclude from the commodity's selling price at least a part of the abnormal surplus value created by the working day. In this way, an abnormally low selling price of the commodity arises, at first sporadically, becoming gradually fixed, which from now on becomes the constant basis of a miserable wage and an excessive working day [...].

Abnormal surplus value results from the same mechanisms that allow for absolute surplus value and competition. Unlike the previous modalities, they will not be developed in this study. According to Marx (2000b), the payment of workers below the value of their labor power is not only a counteracting cause of the decline in the rate of profit but also escapes general analysis and essentially corresponds to an empirical analysis. To calculate the share of workers who provide this surplus value, one must consider the basket of goods and services that comprise the work force's value. This basket is not unique; it varies geographically and between social classes, requiring a broad discussion of the very notion of the value of the work force.

However, what we know about Mexico's high poverty rates, gender wage gaps, and child labor allows us to suggest that it is an important feature of Mexican capitalism. Consequently, an in-depth study of these and all the other issues mentioned so far is imperative. Exploitation in Mexico has increased and become more violent since the 1990s, forcing workers to work even harder. Likewise, capitalism has continued to exploit women and children more. Therefore, the public policies of wage recovery in recent years should not be overestimated. Moreover, economic stagnation and low productivity growth make it more likely that the squeeze on living conditions will not only continue but worsen.

## 5. CONCLUSION

The rate of surplus value in the Mexican economy has increased, and the method of explaining it has changed: from 1994 to 1999, it was the absolute method, from 2000 to 2011 it was the relative method, and since then, it has returned to the absolute method. This shows that during crises, the ability to generate more surplus falls on the wage fund. Meanwhile, the period of dominance of the absolute method was accompanied by profound economic stagnation. The reduction in the exploitation rate in 2019 and 2020 was due to the decline in productivity. However, real hourly wages have increased and are at their 1993 level, lower than that observed in the years of dominance of the relative method.

The modalities of absolute surplus value in Mexico have been studied, as observed in greater job insecurity and flexibility, accompanied by more hours worked and an intensified working day. In this way, it was observed that the wage gaps between male and female workers and child labor are part of this method. Finally, the existence of abnormal surplus value was discussed, which operates when the wage is less than the value of the labor.

Finally, this paper leaves an important research agenda pending. An in-depth study of the absolute surplus value modality and an estimate of its contribution are required. Some methods require their own research, such as wage gaps and abnormal surplus value. Research would contribute to understanding the consequences of exploitation on the workforce and other issues, such as international comparisons of surplus value rates. The preponderance of absolute surplus value could be key to explaining the reasons that lead to the observation that less developed countries are more exploited.

## STATISTICAL ANNEX

The INEGI national accounts system was used to calculate the surplus value rate. However, since there is no homogeneous series from 1993 to 2020, the goods and services accounts base of 2008 (1993-2015) and 2013 (2003-2020) were used. Even though the sector classifications are the same, the years in which both databases share data differ in the results. Even though the trend is the same, the level changes, being, on average, 3.1% higher when using the 2008 database. Therefore, in order to have a single series, the 2013 base was taken as the main base and the 2008 base was used to complete the 1993-2003 period as follows:

Starting with the definition of growth rate:

$$\dot{p}'_t = \frac{p'_t - p'_{t-1}}{p'_{t-1}} = \frac{p'_t}{p'_{t-1}} - 1 \rightarrow p'_{t-1} = \frac{p'_t}{1 + \dot{p}'_t}$$

Thus, the growth rate of the 2008 base and the last year for which data is available in the 2013 base can be combined. In other words, it would be assumed that the growth rates in both bases are similar, thus adjusting for the discrepancy. Based on the information in Table A.1, the missing data for 2002 was calculated using column III as the base year and column II as the assumption for the growth rate, with the exact calculation being:  $(5.37/(1+0.19)) = 4.52$ , for 2001, the base value is now 4.52, and so on until the observations are complete. Column V corresponds to the values used in the figures in the article.

Based on the information in Table A.1, the missing data for 2002 were calculated using column III as the base year and column II as the growth rate assumption. The exact calculation would be:  $(5.37/(1+0.19)) = 4.52$ , for 2001 the base value is now 4.52, and so on until the observations are complete. Column V corresponds to the values used in the figures in the article.

Tabla A.1. Surplus value tax adjustments

Year	I	II	III	IV	V
	<i>p'</i> 2003 Base	Rate of growth	<i>p'</i> 2013 Base	Missing years (III/(1+II))	<i>p'</i> Used
1993	4.1			3.98	3.98
1994	4.2	0.02		4.07	4.07
1995	5.0	0.18		4.80	4.80
1996	5.1	0.03		4.93	4.93
1997	4.9	-0.04		4.75	4.75
1998	4.6	-0.06		4.47	4.47
1999	4.6	-0.01		4.42	4.42
2000	4.6	0.00		4.42	4.42
2001	4.5	-0.02		4.32	4.32
2002	4.7	0.04		4.52	4.52
2003	5.5	0.19	5.37		5.37
2004	5.8		5.55		5.55
2005	5.8		5.72		5.72
2006	6.0		5.87		5.87
2007	6.2		6.03		6.03
2008	6.2		6.04		6.04
2009	6.1		5.84		5.84
2010	6.5		6.28		6.28
2011	6.8		6.50		6.50
2012	6.5		6.58		6.58
2013	6.6		6.42		6.42
2014	6.8		6.52		6.52
2015	6.8		6.49		6.49
2016			6.60		6.60
2017			6.70		6.70
2018			6.55		6.55
2019			6.37		6.37
2020			5.91		5.91

Source: prepared using data from the INEGI national accounts system, Economic Information Bank.

Table A.2 shows the absolute and relative surplus value calculations according to (5.1) and (5.2). Column I shows the contribution of the variation in wages, II that of productivity, III that of the change in the distribution associated with wages, and IV that of productivity. Columns V and VI show the absolute and relative methods, respectively.

**Tabla A.2. Methods of extracting surplus value in Mexico (as a percentage)**

	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
<i>Year</i>	<i>Contribution salary</i>	<i>Contribution productivity</i>	<i>Distribution by salary</i>	<i>Distribution by productivity</i>	<i>Absolute surplus value</i>	<i>Relative surplus value</i>
1994	30	62	3	5	33	67
1995	71	17	9	2	80	20
1996	70	14	14	3	84	16
1997	74	14	10	2	85	15
1998	68	22	7	2	76	24
1999	34	60	2	4	36	64
2000	50	50	0	0	50	50
2001	59	36	3	2	62	38
2002	12	70	3	15	15	85
2003	14	74	2	10	16	84
2004	62	23	11	4	73	27
2005	8	77	1	14	10	90
2006	13	76	2	9	14	86
2007	8	77	1	13	10	90
2008	51	49	0	0	51	49
2009	60	35	3	2	63	37
2010	68	25	5	2	73	27
2011	2	85	0	13	2	98
2012	16	75	2	8	17	83
2013	76	14	8	2	84	16
2014	41	45	6	7	48	52
2015	74	18	7	2	81	19
2016	74	17	7	2	81	19
2017	30	57	4	9	34	66
2018	82	5	12	1	94	6
2019	72	20	6	2	79	21

Source: prepared by the author based on the INEGI national accounts system, Economic Information Bank.

- Cockshott, P. (2019). *How the world works. The story of human labor from prehistory to modern day*. Monthly Review Press.
- Foladori, G. and Melazzi, G. (2009). *La economía de la sociedad capitalista y sus crisis*. Universidad de la República. Comisión Sectorial de Extensión y Actividades en el Medio (CSEAM).
- Garavito, R. (2001). Notas sobre las fuentes de ganancia en el nuevo patrón de acumulación. 1982-2001. *Análisis Económico*, 17(34). <https://analisiseconomico.azc.uam.mx/index.php/rae/article/view/939>
- Guerrero, D. (1990). Cuestiones polémicas en torno a la teoría marxista del trabajo productivo. *Política y Sociedad*, (5). <https://produccioncientifica.ucm.es/documentos/5d3999b129995206844507ea>
- \_\_\_\_\_ (1999). Nonproductive labor, growth, and the expansion of the tertiary sector. Thirty years after the publication of Marx and Keynes. *International Journal of Political Economy*, 29 (4). <http://dx.doi.org/10.1080/08911916.1999.11644000>
- \_\_\_\_\_ (2000). Insumo-Producto y teoría del valor trabajo. *Política y Cultura* (13). <https://www.redalyc.org/comocitar.oa?id=26701308>
- \_\_\_\_\_ (2002). *La explotación. Trabajo y capital en España (1954-2001)*. Ediciones El Viejo Topo.
- Isaac, J. et al. (2014). Tasa de plusvalía y desvalorización de la fuerza de trabajo en América Latina: México, Colombia, Brasil, Chile y Argentina. In Isaac, J. et al. (coord.). *Trabajo y explotación en América Latina: México y Brasil*. Editorial Plaza y Valdés.
- Lima, V. (2005), Crisis, tasa de plusvalía y valor relativo de la fuerza de trabajo en México (unpublished document).
- Mariña, A. and Moseley, F. (2000). The rate of profit in the postwar Mexican economy, 1950-1993. Baiman, R. et al. (eds.). *Political economy and contemporary capitalism: radical perspectives on economic theory and policy*. Editorial Sharpe.
- \_\_\_\_\_ and Moseley, F. (2001). La tasa general de ganancia y sus determinantes en México: 1993-1999. *Economía, Teoría y Práctica, Nueva época* (15).
- Martinez, G. (1999). Algumas evidências da superexploração nos países subdesenvolvidos: a atualidade do pensamento de Marini. *Revista da Sociedade Brasileira de Economia Política* (4).
- Martínez, G. (2005). Plusvalor, ingreso de trabajadores autónomos y diferencias nacionales de tasas de plusvalor. *Problemas del Desarrollo. Revista Latinoamericana de Economía* 36(142). <https://doi.org/10.22201/iiec.20078951e.2005.142.7588>
- Martínez, G. et al. (2019). Productividad y tasa de plusvalor a nivel internacional: evaluación empírica. *Problemas del Desarrollo. Revista Latinoamericana de Economía*, 50(196). <https://doi.org/10.22201/iiec.20078951e.2019.196.63004>
- Marx, K. (1971). *El capital. Book I. Chapter VI (unpublished). Resultados del proceso inmediato de producción*. Siglo XXI.
- \_\_\_\_\_ (2000a). *El capital. Book I. Volume I*. Editorial Akal.
- \_\_\_\_\_ (2000b). *El capital. Book III. Volume IX*. Editorial Akal.
- Palacios, V. (2019). Explotación, excedentes y crecimiento económico en México: 2003-2017. *Revista Panorama Económico*, 24 (28). <https://www.revistapanoramaeconomico.mx/index.php/PE/article/view/42>
- Silva, J. (2016). La tasa de plusvalía en México 1994 a 2014, una estimación introductoria. *Heterodoxus. Revista de Investigación y Análisis Económico*, 2(5). <http://heterodoxus.economia.unam.mx/pdfs/a2n5.pdf>

Valenzuela, J. (1993). Tasa de plusvalía: nivel y determinantes. *Investigación Económica*, (206)53. <https://www.jstor.org/stable/42870855>

\_\_\_\_\_ (2021). *Economía mexicana. Análisis y herramientas analíticas*. Centro de Estudios para el Desarrollo Alternativo.

Valle, A. and Martínez, B. (2017). *Los salarios de la crisis*. School of Economics, UNAM.

Wilson, D. (2020). Precarization, informalization, and Marx. *Review of Radical Political Economics*, (52)3. <https://doi.org/10.1177/0486613419843199>

## STATISTICAL SOURCES

INEGI (2023). Banco de Información Económica. <https://en.www.INEGI.org.mx/app/indicadores/?tm=0>

\_\_\_\_\_ (2019). Encuesta Nacional de Trabajo Infantil. <https://www.INEGI.org.mx/programas/enti/2019/>

<sup>1</sup> The work force is defined as the Economically Active Population (EAP) minus employers (capitalists); the ratio between the two is the proletarianization rate.

<sup>2</sup> In the United States, only 3% of the work force is engaged in agriculture, while the proletarianization rate in 1997 reached 91.5% of the EAP. In Mexico, according to the INEGI, in September 2022, 72% of the EAP was in salaried employment (higher than in 2005, when it represented 68%), while self-employment accounted for 24%.

<sup>3</sup> The productive branches are agriculture, animal husbandry and exploitation, forestry, fishing and hunting; mining, generation, transmission and distribution of electricity, water and gas supply; manufacturing industries, transportation, mail and storage; information in mass media; professional, scientific and technical services; cultural and sports recreation services; temporary accommodation and food and beverage preparation services; construction.

<sup>4</sup> “The most primary material support or body in all economic categories –i.e. concrete work–, as well as its result –use value– can take the form of a “physical” or “material” object or, on the contrary, simply consist of an activity that is not “materialized” in any external object (i.e. a “service”)” (Guerrero, 1990, p. 121).

<sup>5</sup> The inverse of the hourly wage was used, so that (2) remained in the product of three variables and when applying logarithms, it allows an expression of three addends and avoids a negative sign. This way of proceeding is only illustrative, any approach leaves intact the fact that  $w_h$  has an inverse relationship with  $p'$ .

<sup>6</sup> This was obtained by multiplying the average number of hours worked by an employee by the employment in each branch.

<sup>7</sup> The data for the Mexican economy underestimates the problem because it does not include security, cleaning, and gardening work. In these cases, subcontracting would be justified because they are supposedly “not part” of essential activities. These sectors have low wages, which worsens the living conditions of the workers. In the case of cleaning activities, the problem is twofold because it involves a female workforce that is generally paid less. These workers (both male and female) are subject to an abnormal form of surplus value.

<sup>8</sup> Manufacturing, retail trade, accommodation and food services, business support services, wholesale trade and other services excluding government.

<sup>9</sup> Employed population as a percentage of the economically active population by gender.