

# CORRUPTION AND DEMOCRACY IN MEXICO: AN EMPIRICAL ANALYSIS

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## Introduction

For decades, Mexico's single party government and concentration of power in a presidential figure prevented the country from developing strong institutions that support the rule of law. The system governing the administration of justice functioned as an arm of the executive branch and was often used against critics of the government. Even when Mexico democratized in the late 1990s and early 2000s, its judicial institutions remained weak. Mexico's government maintained a stranglehold over the economy, organizing it as a corporatist system.<sup>1</sup> The country's parastatal economy created an environment in which government loyalists received benefits that were unavailable to critics.<sup>2</sup> The weak judicial system and the corporatist economy fostered corruption with no independent institutions to check it. Today, despite progress in building institutions—such as a stronger congress, an independent Supreme Court, a strong Central Bank, an autonomous National Electoral Institute, a freer press, and numerous regulatory commissions—there has been little progress in fighting corruption, and Mexico's democracy remains fragile. In fact, corruption levels have increased over time. The primacy of corruption as an issue in Mexico was a significant component in the election of Andrés Manuel López Obrador to the presidency in 2018, as he pledged to end corrupt practices in the government.

The paradox of López Obrador's administration is that while he promised to end corruption, he has also advocated a return to a more centralized political power and a stronger government role in the economy—the very things that may have fostered the levels of corruption in Mexico today. This puts Mexico in a delicate position because the two structural sources of corruption—a state-led economy and a powerful executive—are the very instruments that López Obrador believes can help him fight it. In addition, this return to a centralized government affects Mexico's democracy too, as does López Obrador's policy of confronting autonomous institutions and trying to weaken them. This leads to serious questions: if democracy in Mexico is threatened and reduced, how does this affect corruption? Is there a relationship between these two variables in Mexico, and if so, how do they interact with each other? Given Mexico's history, and López Obrador's strategy, it is necessary to disentangle the relationship between democracy and corruption. This research paper aims to answer these questions, specifically if democracy has an effect on corruption in Mexico and what functional form this relationship has.

## Corruption and Democracy

To understand the relationship between corruption and democracy, we must first define corruption. This is not easy. There is hardly any universal definition of corruption,<sup>3</sup> but it is broadly understood as the misuse of public office for private gains.<sup>4</sup> Given this definition, many studies indicate that countries with high levels of corruption seem to share certain characteristics, including low income levels, closed economies, low levels of education, inequality, and a lack of democracy.<sup>5</sup> Indeed, a critical factor that could be related to corruption is democracy.

Democracy has developed in many countries since the 1970s. However, this tendency has stopped in recent years, and some countries have moved from a democracy to a nondemocratic regime. According to the Economist Intelligence Unit's (EIU) Democracy Index 2018, 45% of the countries of the world are considered democracies, representing 48% of the world's population.<sup>6</sup> This index rates countries using five categories: electoral process and pluralism, the functioning of government, political participation, democratic political culture, and civil liberties. Mexico ranks low in this index, with a score of 6.2 (partial democracy) out of 10 (full democracy).<sup>7</sup> At the same time, it ranks high in corruption, as Rodriguez-Sanchez pointed out.<sup>8</sup> This pattern is common among many different countries: higher levels of democracy are correlated with lower levels of corruption.<sup>9</sup> To be sure, this relationship is complex, and the process by which democracy affects corruption and the linearity of this relationship varies across countries. However, once democracy is well established, corruption is generally lower.<sup>10</sup> Interestingly, well-established democracies with lower levels of power centralization show lower levels of corruption compared to more centralized regimes. Thus, the way in which democracy affects corruption is complex and difficult to measure, but these findings suggest that democracy reduces corruption.<sup>11</sup>

The effects of corruption on democracy, the opposite case, have been also examined, and the evidence generally indicates that a high level of corruption lowers democracy. Corruption diverts resources intended for public works, democratic institutions, and infrastructure into private hands or political groups. But again, this relationship is not clear. Some studies show mixed and inconclusive results about how corruption affects democracy.<sup>12</sup> Some studies report a negative correlation between these two variables (some with no robust negative correlation), while others do not find a significant relationship at all.<sup>13</sup> In general, however, the evidence shows that democracy and corruption are negatively interrelated.

### The Case of Mexico

In recent years, most international and national measures of corruption show an increase in both the perception of corruption and actual corruption in Mexico. The country's international ranking has deteriorated dramatically, placing it at the bottom in lists of corrupt countries in almost every survey.<sup>14</sup> Transparency International ranked Mexico 135 out of 180 countries according to its Corruption Perceptions Index (CPI) of 2017. The Americas Society and the Council of the Americas and their new Capacity to Combat Corruption Index (CCC) ranked Mexico as one of the worst countries in Latin America with the least capacity to combat corruption, only above Venezuela and Guatemala.<sup>15</sup> The World Justice Project placed Mexico at 102 out of 113 countries, and it was among the 10 most corrupt countries according to the project's Rule of Law Index (RLI). The World Justice Project also estimated the RLI and the absence of corruption (AC) for each state in Mexico, which shows that corruption varies throughout the country and the most corrupt states are Quintana Roo, Mexico State, Guerrero, and Mexico City.<sup>16</sup>

National surveys also confirm that corruption is a major problem within Mexico. The National Institute of Statistics and Geography (INEGI) developed the National Survey of Quality and Government Impact (ENCIG), which showed that Mexicans considered corruption to be the second-most important national concern in 2017, just below security. The National Survey on Regulatory Quality and Government Impact on Enterprises, also conducted by INEGI, found that the costs of corruption for Mexican firms were approximately \$84 million in 2016, and 1,317 out of 10,000 large firms experienced at least one corrupt act.<sup>17</sup>

Democracy in Mexico is also weaker than it has been in the last two and a half decades. Indeed, the EIU reported that Mexico's democracy has been falling since 2010.<sup>18</sup> The Latin American Public Opinion Project (LAPOP) analyzed the perceptions regarding the protection of basic rights in Mexico as an element of its democracy. According to LAPOP and Latinobarómetro, satisfaction with democracy and public support for democracy are also falling.<sup>19</sup> LAPOP found that from 2004 to 2017, democracy showed a decrease (with the exception of 2012). Indeed, Mexico had one of the lowest levels of rights protections in Latin America.<sup>20</sup> Another example is Freedom House's analysis, in which Mexico moved from a free country to a partly free country in 2011 due to the deterioration of its political rights and civil liberties.<sup>21</sup> Mexican democracy remains fragile according to the Index of Democratic Development (IDD), as calculated by the Konrad Adenauer Stiftung. This index measures four dimensions of democratic development in Mexico as a whole and at the state level: citizen democracy (civil liberties and political rights), institutional democracy (quality of institutions and efficiency of the political system), social democracy (social welfare), and economic democracy (economic efficiency).<sup>22</sup>

The IDD ranks Mexican states from "high development," where there is political inclusion, freedom, and social welfare, to "minimal development," where there is low civic participation and ineffective governance. According to this index, Mexico scored a failing grade of 5.0 points out of 10 in 2018. Twenty of the 32 states are below the threshold of 6.0 points. The states with minimal development are Tlaxcala (2.95), Chihuahua (2.18), Puebla (1.53), Chiapas (1.15), Oaxaca (0.80), Veracruz (0.65), Morelos (0.08), and Guerrero (0). The states with high development are Queretaro (7.32), Campeche (8.01), Zacatecas (8.03), Mexico City (8.11), Guanajuato (8.33), Yucatan (8.62), Nayarit (8.88), Coahuila (9.69), and Aguascalientes (10).<sup>23</sup> Mexico's IDD has been below 6 points since 2010, with high volatility among the states, meaning that democracy throughout the country varies too. This raises questions about the relationship between corruption and democracy—most studies show that democracy in Mexico is falling and corruption is increasing, and these seem to move in tandem. However, the existence and functional form of this relationship must be verified since the linearity of this relationship varies across different documented cases in the literature, as discussed below.

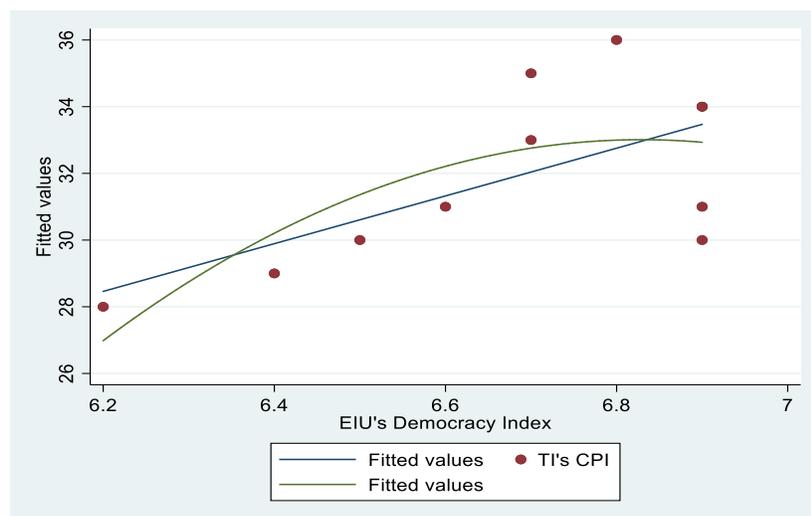
## Measuring the Relationship between Democracy and Corruption in Mexico

The relationship between democracy and corruption may be linear or not, and the causal mechanisms may be complex. According to Treisman, this relationship is likely linear since more politically open societies show less corruption.<sup>24</sup> Thus, corrupt acts are more likely to be exposed in democratic countries, since people in those countries have more freedom of association. Saha et al. suggest that democracy promotes competition among government officials, which should reduce corruption. This further indicates a linear relationship between the two variables.<sup>25</sup>

In contrast, others have identified a nonlinear relationship in the shape of an inverted U between corruption and democracy; that is, corruption increases with democracy up to a point and then decreases. Mohtadi and Roe show that democratization has such an effect on corruption. If there is no democracy or the level is low, some agents will benefit from this and act as rent seekers with an incentive to corrupt. If democracy starts to increase, these agents will act as monopolistic competitors at the beginning, and corruption will therefore increase up to a maximum level. If democracy continues to rise after that level of corruption occurs, the number of agents will also increase, and the competition between them will cause corrupt acts to decrease.<sup>26</sup>

A first way to analyze if there is a relationship between corruption and democracy, and its functional form, is to graph these variables and analyze the graph. In the case of Mexico, the relationship between democracy and corruption can be assessed using the CPI and the EIU for the period from 2006 to 2017 (Figure 1). Following Rodriguez-Sanchez,<sup>27</sup> I consider the perception of corruption as a good proxy for the experience of corruption in Mexico. While perceptions of corruption are not equivalent to corruption itself, there is evidence that these two are highly correlated.<sup>28</sup> As shown in Figure 1, there is a relationship between corruption and democracy, such that the higher the democracy (as measured by the EIU) is in Mexico, the lower the perceived corruption (as measured by the CPI) and hence actual corruption. In fact, this relationship seems to be both linear (blue line) and nonlinear (green line). Using a simple Ramsey's Reset Test to verify which of these two functional forms is correct, I can determine that the relationship is in fact closer to linear. Thus, the best functional form to relate democracy and corruption, in this case, is with a linear function.<sup>29</sup> However, it would be better to have more data to test the correct functional form of this relationship. Therefore, I also test it using data from the IDD 2017 and ENCIG 2017 for all Mexican states.

Figure 1. The Relationship between the CPI and EIU in Mexico



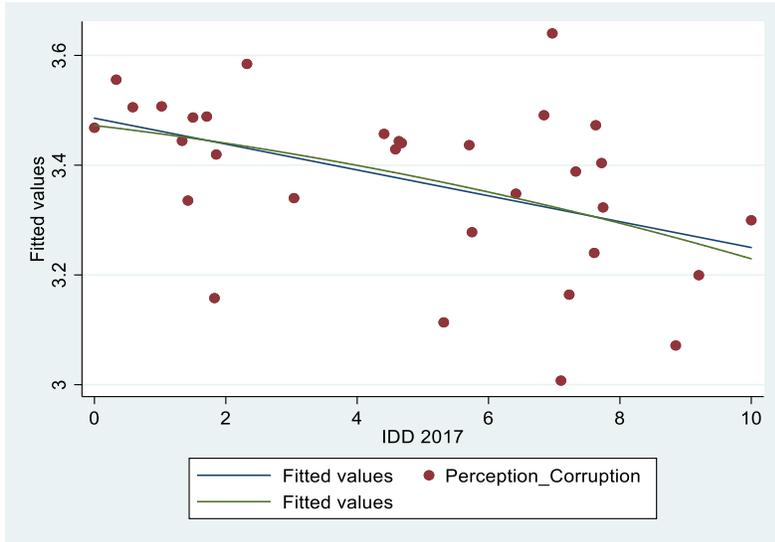
Note: The statistical software (STATA) estimates a linear (blue line) and nonlinear (green line) functional form given the data.

Source: Transparency International, <https://www.transparency.org/research/cpi/overview>; Economist Intelligence Unit's Democracy Index, [https://www.eiu.com/public/topical\\_report.aspx?campaignid=Democracy2018](https://www.eiu.com/public/topical_report.aspx?campaignid=Democracy2018).

Analyzing the relationship between democracy (as measured by the IDD) and perceived corruption (as measured by ENCIG) in Mexican states further demonstrates that this functional form should be linear (Figure 2). Indeed, the Ramsey's Reset Test in this case shows that this relationship is linear.<sup>30</sup> Hence, the higher the democracy is in the Mexican states, the lower the perceived corruption.<sup>31</sup> If the variable of corruption is changed to the absence of corruption (AC), the result is the same: linearity (Figure 3).<sup>32</sup> As a result, we can conclude that democracy and corruption are related and that this relationship is linear.

Democracy might affect corruption and its perception through a few different mechanisms. For example, democratic elections allow citizens to hold government officials accountable, which generates fewer corrupt acts. Also, democracy affects and increases the competitiveness of the political system, and it may reduce corruption.<sup>33</sup> Indeed, research on this relationship typically uses Pearson's correlation coefficient to assess the relationship between democracy and perceived corruption. In this research, the Pearson's correlation coefficient estimated between democracy (measured with the IDD) and perceived corruption (measured with the ENCIG) is -0.4568, indicating a negative relationship between the two in Mexico.<sup>34</sup> This confirms the relationship demonstrated in Figure 2, in which the variables move in opposite directions. If the measure of perceived corruption of the ENCIG is changed to the AC of the Rule of Law Index used by World Justice Project, the Pearson's correlation coefficient between democracy (measured with the IDD) and AC is 0.3176.<sup>35</sup> This indicates that higher levels of democracy in the Mexican states are related to lower levels of perceived corruption.

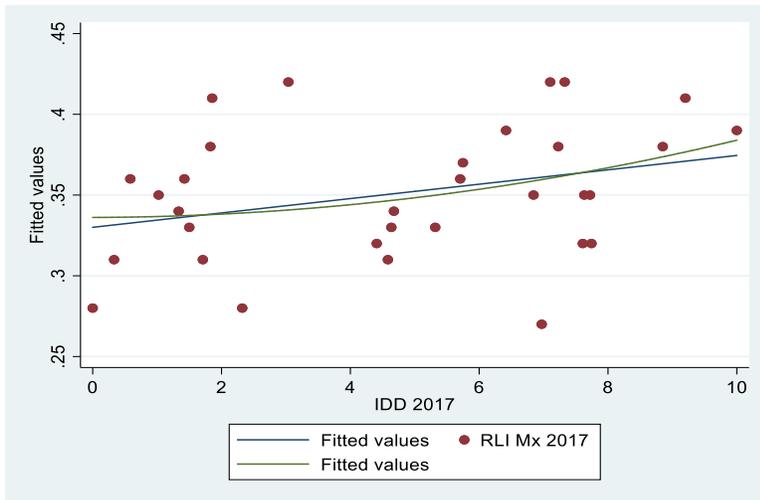
**Figure 2.** The Relationship between Perceptions of Corruption and the IDD for all Mexican States



Note: The statistical software (STATA) estimates a linear (blue line) and nonlinear (green line) functional form given the data.

Source: ENCIG 2017, <http://www.beta.inegi.org.mx/programas/encig/2017/default.html#Microdatos>; and IDD 2017, <http://www.idd-mex.org/2017/downloads/IDDMEX-2017.pdf>.

**Figure 3.** The Relationship between the AC and IDD for all Mexican States



Note: The statistical software (STATA) estimates a linear (blue line) and nonlinear (green line) functional form given the data.

Source: World Justice Project 2017, [https://worldjusticeproject.org/sites/default/files/documents/WJP-Mexico-States-Index-2018\\_0.pdf](https://worldjusticeproject.org/sites/default/files/documents/WJP-Mexico-States-Index-2018_0.pdf); and IDD 2017, <http://www.idd-mex.org/2017/downloads/IDDMEX-2017.pdf>.

The correlations above point out a negative association between democracy and corruption. However, I have to be cautious about causality since correlations do not establish causality. The usual assumption is that corruption is affected by democracy, but corruption may also affect democracy in turn. Furthermore, there could be a problem of endogeneity if an unobservable variable is correlated with the independent variable (democracy) in the linear regression model. In order to address this potential problem, I use an Instrumental Variable (IV), in addition to estimating the regression coefficients using the Ordinary Least Squares (OLS) method.

### An Econometric Model for Corruption and Democracy in Mexico

The econometric model that I use is a cross-sectional linear regression framework, where a set of independent variables (X) influence the dependent variable (Y), which is the perception of corruption:

$$Y = \alpha + \beta' X + \varepsilon,$$

where  $\alpha$  is a constant,  $\beta$  is a vector of slope regression coefficients, and  $\varepsilon$  is an error term that is independent and identically distributed. I will run OLS and IV for this equation. As a measure of corruption, I use the ENCIG and the AC for a robustness check. The ENCIG ranges from 1 (no corruption) to 4 (very frequent), and the AC ranges from 0 (high corruption) to 1 (low corruption). As for the independent variables, I use the following variables per state:<sup>36</sup> IDD,<sup>37</sup> natural log of Gross Domestic Product per capita,<sup>38</sup> GINI coefficient,<sup>39</sup> unemployment rate,<sup>40</sup> exports,<sup>41</sup> electoral districts,<sup>42</sup> average education,<sup>43</sup> transparency,<sup>44</sup> days to open a firm,<sup>45</sup> impunity,<sup>46</sup> and percent of Catholics.<sup>47</sup>

To address the possible issue of simultaneous causation and the problem of measurement error that may affect the democracy variable and, hence, the OLS results, I use an IV. An IV is uncorrelated with any unobservable factors, but it is correlated with the independent variable. This instrument allows the dependent variable (perception of corruption) to capture only the effects of the independent variable, whereas the OLS method captures not only this effect but also the effect of endogeneity, which creates biased results. Hence, an IV must have a direct causal effect on the independent variable but must not be correlated with the dependent variable (except by its effect on the independent variable).

Unfortunately, it is difficult to find a good instrument that satisfies the above condition, particularly for democracy and corruption. Studies have used different instrumental variables to tackle the problem of endogeneity for cross-country data, such as the fraction of the population that speaks a European language, whether the country is a former British colony, the amount of protest in the population, latitude, and whether the country has ever fought a war with a democratic country.<sup>48</sup> These variables have been criticized because they may be related not only to democracy but also to corruption. In this paper, the IV is the number of journalists murdered in the Mexican states in 2017.<sup>49</sup> It is plausible that the number of murdered journalists does not affect corruption directly, but it affects key elements of democracy, such as the freedom of expression and human rights. Indeed, the Pearson's correlation coefficient estimated between democracy (measured with the IDD)

and murdered journalists is -0.4409 and it is significant at the 2% level. In contrast, the Pearson's coefficient between perceived corruption (measured with the ENCIG) and murdered journalists is 0.2689, and it is not significant at the 10% level.

I therefore analyze the relationship between democracy and perceived corruption in Mexico using OLS and IV for two different dependent variables (ENCIG and AC), with the same control variables, to test if the results are robust.

### Results

The results of my analysis show that the greater the democracy in Mexican states, the lower the perception of corruption in those states (Table 1).<sup>50</sup> Mexican states with greater economic growth also have lower perceptions of corruption. In contrast, states with higher levels of education also have higher perceptions of corruption. Finally, states with more transparency have greater perceptions of corruption. Transparency allows Mexicans to know more about cases of corruption, and as a result, they perceive a higher level of corruption. All of these relationships are statistically significant (Column 2). The results given by the IV are almost the same as with OLS, but there are two more statistically significant variables. Inequality in Mexican states, measured by the Gini coefficient, translates into a higher perception of corruption. The other variable, the rate of unemployment, is also positively related to the perception of corruption (Column 4). Using the outcomes of both approaches, I can conclude that perceived corruption is determined by democracy, economic growth, years of education, and transparency in the states of Mexico.

Using the same set of variables as in the previous case, I changed the dependent variable to be the AC. The results obtained by the OLS approach show that democracy has a negative relationship with the perception of corruption, but it is not statistically significant (Table 2). Economic growth also has a negative effect on the perception of corruption, but it is not significant in this approach. The only significant variables are exports by state, electoral districts, and years of education. The higher exports per state, the lower the perceived corruption in Mexican states. Both the electoral districts and the years of education increase the perception of corruption (Column 2). Regarding the IV results, the effect of democracy is significant with the same impact on the perception of corruption as before; that is, that the greater the democracy in Mexican states, the lower the perception of corruption in those states. Exports and years of education preserve their sign and both are significant, as in the OLS approach (Column 4). Using the outcomes of both approaches, I can conclude that perceived corruption is determined by democracy, years of education, and exports in the states of Mexico.

**Table 1.** Democracy and Perceived Corruption in Mexico, 2017

	1	2	3	4
Variable	ENCIG	ENCIG	ENCIG	ENCIG
IDD	-0.0236*** (0.0082)	-0.0219* (0.0106)	-0.0339** (0.0162)	-0.0523*** (0.0175)
Ln GDP per capita	0.011 (0.0615)	-0.1700** (0.0627)	0.0284 (0.0692)	-0.1753*** (0.0606)
GINI		0.8435 (0.7305)		1.4373** (0.6198)
Unemployment Rate		3.1197 (2.7241)		6.5040*** (2.3840)
Exports		-9.37E-10 (1.64E-9)		-1.36E-9 (1.78E-9)
Electoral Districts		0.0026 (0.0022)		-0.002 (0.0032)
Average Education		0.0727** (0.0328)		0.1111*** (0.0416)
Transparency		1.3171** (0.4914)		1.3680*** (0.4548)
Constant	3.4728*** (0.7182)	4.4821*** (0.8766)	3.1940*** (0.7853)	4.0015*** (0.8303)
R <sup>2</sup>	0.2087	0.6498	0.1771	0.4780
N	32	32	32	32
Method	OLS	OLS	IV	IV
Controls	NO	YES	NO	YES

Note: Asterisks denote significance at \* 10%, \*\* 5%, and \*\*\* 1% levels. Robust standard errors are in brackets. The dependent variable is the perception of corruption and the instrumental variable is the number of murdered journalists in 2017 within Mexico. I ran regressions with only three of the four dimensions of the IDD (I eliminated the dimension of economic democracy), and the results were the same. Other control variables are days to open a firm, impunity, and percentage of Catholics in the state. The OLS estimates satisfy the assumptions of normality, no collinearity, and homoscedasticity. I ran other regressions using the experience of corruption as a dependent variable and the same control variables, and the results were not significant for democracy, but the sign was negative too. I tested if the IV was a weak instrument or not, and the results showed that it is a weak instrument.<sup>51</sup> Indeed, it is hard to find a suitable instrument for democracy, as pointed out by You and Khagram.<sup>52</sup>

**Table 2.** Democracy and Perceived Corruption in Mexico, 2017

	1	2	3	4
Variable	AC	AC	AC	AC
IDD	0.0039 (0.0024)	0.0030 (0.0028)	0.0089* (0.0054)	0.01302* (0.0061)
Ln GDP per capita	0.0064 (0.0142)	0.0191 (0.0180)	-0.0069 (0.0210)	0.0208 (0.0176)
GINI		-0.0076 (0.2409)		-0.2016 (0.2573)
Unemployment Rate		0.2070 (0.7081)		-0.8984 (0.9843)
Exports		1.47E-9* (6.50E-10)		1.61E-9*** (5.95E-10)
Electoral Districts		-0.0029** (0.0011)		-0.0013 (0.0011)
Average Education		-0.0224* (0.0116)		-0.0349** (0.0153)
Transparency		0.0792 (0.1860)		0.0626 (0.1516)
Constant	0.2549 (0.1648)	0.1512 (0.2133)	0.3917* (0.2319)	0.3082 (0.2603)
R <sup>2</sup>	0.1059	0.5229	0.0027	0.2742
N	32	32	32	32
Method	OLS	OLS	IV	IV
Controls	NO	YES	NO	YES

Note: Asterisks denote significance at \* 10%, \*\* 5%, and \*\*\* 1% levels. Robust standard errors are in brackets. The dependent variable is the absence of corruption, and the instrumental variable is the number of journalists murdered in 2017 within Mexico. I ran regressions with only three of the four dimensions of IDD (I eliminated the dimension of economic democracy), and the results were the same. Other control variables are days to open a firm, impunity, and percentage of Catholics in the state. The OLS estimates satisfy the assumptions of normality, no collinearity, and homoscedasticity.

When considering the results of both tables together, I can conclude that democracy lowers perceived corruption in the states of Mexico. If I assume that perceptions of corruption and experiences of corruption are positively related<sup>53</sup> such that perceptions can be used as a proxy for corruption itself, I can conclude with confidence that the greater the democracy in the Mexican states, the lower the corruption in those states.

## Conclusion

The relationship between democracy and corruption is complex, and it is a challenge to calculate it due to the lack of data. However, given the increase of corruption in Mexico, many agencies have started to measure it. In addition, other institutions have focused on the measurement of democracy and the rule of law. Using these data, I find that there exists a linear relationship and a negative correlation between democracy and the perception of corruption. In other words, democracy in Mexico reduces the perception of corruption.

Regarding the paradox stated in the introduction, if López Obrador decides to confront autonomous institutions and return to a stronger government role in the economy, he will reduce democracy, thereby causing an increase in corruption in Mexico at the same time. Indeed, this potential fracture of the Mexican democracy would incentivize more acts of corruption because there would be no institutions to prosecute and prohibit these acts. In the end, López Obrador will not be able to reduce corruption if he returns to a more centralized political power that affects Mexico's democracy.

Although the causal direction of democracy and corruption is normally debated, evidence suggests that highly developed and well-established democracies are perceived as less corrupt.<sup>54</sup> In the case of Mexico, using results from Table 1, democracy and economic growth reduce the perception of corruption. In other words, more economic growth and democracy result in a lower perception of corruption and hence, a reduction in corruption. If it is estimated that the Mexican economy will grow less than 1% by 2019 and less than 2% by 2020, then corruption would not be reduced very much in the coming years. Hence, if the government wanted to reduce corruption even more, it would have to improve democracy in the states of Mexico by promoting stronger and more independent institutions.<sup>55</sup> Finally, while it is questionable if Mexico is a well-established democracy, it is certainly a democracy. López Obrador needs to maintain that status and not revert to a centralized government with weak or nonexistent autonomous institutions.

If democracy is reduced and so corruption increases, Mexico would be in a no-win situation, and López Obrador would not achieve his goal of reducing corruption at all. On the contrary, he would divert Mexico from being a democracy, which would generate more corruption.

## Endnotes

<sup>1</sup> Corporativism systems are normally governed by centralized institutions wherein power is distributed among different groups, none of which can have more power than the other and all are in favor of their common interests.

<sup>2</sup> A parastatal economy is based on state-owned companies that are partially or totally owned by the government.

<sup>3</sup> Jose I. Rodriguez-Sanchez, *Understanding the Problems and Obstacles of Corruption in Mexico*, Rice University's Baker Institute for Public Policy Issue Brief no. 09.13.18 (2018), <https://www.bakerinstitute.org/media/files/files/dae461e7/bi-brief-091318-mex-corruption.pdf>.

<sup>4</sup> Transparency International, "What is Corruption?" 2018, <https://bit.ly/2HLSxmc>.

<sup>5</sup> Jakob Svenson, "Eight Questions about Corruption," *Journal of Economic Perspectives* 19, no. 3 (Summer 2005) : 19-42, [http://www1.worldbank.org/publicsector/anticorrupt/Svensson%20Eight%20Questions%20About%20Corruption%20\(JEP%20Vol%2019,%20No%203%202005\).pdf](http://www1.worldbank.org/publicsector/anticorrupt/Svensson%20Eight%20Questions%20About%20Corruption%20(JEP%20Vol%2019,%20No%203%202005).pdf); Chandrashekar Krishnan, *Inequality, Corruption and Democracy in Industrial Democracies* (SSRN, 2016), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2776676](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2776676).

<sup>6</sup> The Economist Intelligence Unit, "Democracy Index 2018: Me too? Political participation, protest and democracy," *The Economist*, 2019, <http://www.eiu.com/topic/democracy-index>.

<sup>7</sup> Ibid.

<sup>8</sup> Jose I. Rodriguez-Sanchez, *Measuring Corruption in Mexico*, Rice University's Baker Institute for Public Policy Research Paper no. 12.11.18 (2018), <https://www.bakerinstitute.org/media/files/files/b190ca73/bi-pub-rodriguez-sanchezcorruption-121118.pdf>.

<sup>9</sup> Ivar Kolstad and Arne Wiig, "Does democracy reduce corruption?" *Democratization* 23, no. 7 (2016), 1198-1215.

<sup>10</sup> Daniel Treisman, "What have we learned about the causes of corruption from ten years of cross-national empirical research?" *Annual Review of Political Science* 10 (2007): 211-244, <https://www.annualreviews.org/doi/pdf/10.1146/annurev.polisci.10.081205.095418>.

<sup>11</sup> Gabriella R Montinola and Robert W. Jackman, "Sources of Corruption: A Cross-Country Study," *British Journal of Political Science* 32, no. 1 (2002): 147-70. <http://www.jstor.org/stable/4092210>; Mark E. Warren, "What Does Corruption mean in a Democracy?" *American Journal of Political Science* 48, no. 2 (2004): 328-343.

<sup>12</sup> Christine Kalenborn and Christian Lessmann, "The impact of democracy and press freedom on corruption: Conditionality matters," *Journal of Policy Modeling* 35, no. 6 (2013): 857-886, <https://doi.org/10.1016/j.jpolmod.2013.02.009>.

<sup>13</sup> Kolstand and Wiig, "Does democracy reduce corruption?" 2016.

<sup>14</sup> Rodriguez-Sanchez, *Measuring Corruption*.

<sup>15</sup> Roberto Simon and Geert Aalbers, *The Capacity to Combat Corruption Index* (New York City: Americas Society/Council of the Americas, 2019), [http://americasquarterly.org/sites/default/files/images/CCC\\_Report2019.pdf](http://americasquarterly.org/sites/default/files/images/CCC_Report2019.pdf).

- <sup>16</sup> For a complete discussion of corruption measures in Mexico, see Jose I. Rodriguez-Sanchez, *Measuring Corruption*.
- <sup>17</sup> Ibid.
- <sup>18</sup> The Economist Intelligence Unit, “Democracy Index 2018,” 2019.
- <sup>19</sup> Luis Schenoni and Scott Mainwaring, “Democracy is in crisis in Latin America. Brazil may be the next trouble spot,” *The Washington Post*, 2018  
[https://www.washingtonpost.com/news/monkey-cage/wp/2018/10/22/democracy-is-in-crisis-in-latin-america-brazil-may-be-the-next-trouble-spot/?noredirect=on&utm\\_term=.5a6627a7038d](https://www.washingtonpost.com/news/monkey-cage/wp/2018/10/22/democracy-is-in-crisis-in-latin-america-brazil-may-be-the-next-trouble-spot/?noredirect=on&utm_term=.5a6627a7038d).
- <sup>20</sup> Vidal Romero, Pablo Parás, Georgina Pizzolitto and Elizabeth J. Zechmeister, *The Political Culture of Democracy in Mexico and in the Americas, 2016/17* (Washington, D.C.: USAID, 2018),  
[https://www.vanderbilt.edu/lapop/mexico/AB2016-17\\_Mexico\\_Executive\\_Summary\\_V3\\_05.21.18\\_W\\_062518.pdf](https://www.vanderbilt.edu/lapop/mexico/AB2016-17_Mexico_Executive_Summary_V3_05.21.18_W_062518.pdf).
- <sup>21</sup> “Mexico,” Freedom in the World 2019, Freedom House, Accessed September 12, 2019,  
<https://freedomhouse.org/report/freedom-world/2019/mexico>.
- <sup>22</sup> “Índice de Desarrollo Democrático de México 2018,” Konrad Adenauer Stiftung,  
[http://idd-mex.org/2018/downloads/BOOKLET\\_IDDMEX\\_2018.pdf](http://idd-mex.org/2018/downloads/BOOKLET_IDDMEX_2018.pdf).
- <sup>23</sup> “Índice de Desarrollo Democrático de México 2018: Resultados,” IDD-Mex, 2019,  
<http://idd-mex.org/2018/informes/122/resultados-del-idd-mex-2018.html>.
- <sup>24</sup> Daniel Treisman, “The causes of corruption: a cross-national study,” *Journal of Public Economics* 76 (2000): 399-457,  
<https://www.amherst.edu/media/view/131389/original/Treisman2000.pdf>.
- <sup>25</sup> Shrabani Saha, Rukmani Gounder, and Jen-Je Su, “The interaction effect of economic freedom and democracy on corruption: A panel cross-country analysis,” *Economic Letters* 105, no. 2 (November 2009): 173-176,  
<https://www.sciencedirect.com/science/article/pii/S0165176509002420>.
- <sup>26</sup> Hamid Mohtadi and Terry L. Roe, “Democracy, rent seeking, public spending and growth,” *Journal of Public Economics* 87, no. 3-4 (March 2003): 445-466,  
<https://www.sciencedirect.com/science/article/pii/S0047272701001359>.
- <sup>27</sup> Rodriguez-Sanchez, *Measuring Corruption*, 2018; this study found that there is a positive relationship between perception and experience of corruption for the ENCIG. Hence, I will consider the perception of corruption as a good proxy of the experiences of corruption in Mexico in this paper.
- <sup>28</sup> See Treisman, “The causes of corruption,” 399-457.
- <sup>29</sup> Ramsey RESET test:  $H_0$ : model has no omitted variables,  $F(3, 6) = 3.29$  and  $\text{Prob} > F = 0.1001$ .
- <sup>30</sup> Ramsey RESET test:  $H_0$ : model has no omitted variables,  $F(3, 27) = 0.22$  and  $\text{Prob} > F = 0.8817$ .
- <sup>31</sup> The values are 1 = “no corruption” and 4 = “very frequent”. In the ENCIG, these values are in the opposite direction, but I inverted them. I constructed this variable by averaging the levels of perceived corruption by state.

<sup>32</sup> Ramsey RESET test:  $H_0$ : model has no omitted variables,  $F(3, 27) = 1.07$  and  $\text{Prob} > F = 0.3775$ .

<sup>33</sup> Matthew C. Stephenson, "Corruption and Democratic Institutions: A review and synthesis," in *Greed, Corruption, and the Modern State: Essays in Political Economy*, eds. Susan Rose-Ackerman and Paul Lagunes (Northampton, MA: Edward Elgar Publishing, 2015), 92-133,

<http://www.law.harvard.edu/faculty/mstephenson/2015PDFs/Publications/Stephenson%20-%20Corruption%20and%20Democratic%20Institutions.pdf>.

<sup>34</sup> This correlation is significant at 1% level ( $p = 0.0086$ ).

<sup>35</sup> In the AC, the scores range from 0 to 1, with 1 indicating the strongest adherence to the rule of law.

This correlation is significant at 8% level ( $p = 0.0765$ ).

<sup>36</sup> These variables were used in the estimation of the results, and the variables shown in tables were key variables and those that were statistically significant.

<sup>37</sup> "Índice de Desarrollo Democrático de México 2017: Resultados," IDD-Mex, 2018, <http://idd-mex.org/2018/informes/102/resultados-del-idd-mex-2017.html>.

<sup>38</sup> "PIB por Entidad Federativa (PIBE)," INEGI, 2016, <https://www.inegi.org.mx/programas/pibent/2013/default.html#Tabulados>; "Tabulados Básicos," Consejo Nacional de la Población, 2016, [http://www.conapo.gob.mx/es/CONAPO/Tabulados\\_basicos](http://www.conapo.gob.mx/es/CONAPO/Tabulados_basicos).

<sup>39</sup> Mariana Galindo and Viridiana Ríos, "Desigualdad," *Serie de Estudios Económicos* 1 (July 2015): 1-12, [https://scholar.harvard.edu/files/vrios/files/201508\\_mexicoinequality.pdf](https://scholar.harvard.edu/files/vrios/files/201508_mexicoinequality.pdf);

The Gini coefficient measures the income inequality. It ranges from 0 (perfect equality) to 1 (perfect inequality).

<sup>40</sup> "Catálogo Nacional de Indicadores," Sistema Nacional de Información Estadística y Geográfica, 2017, <https://www.snieg.mx/cni/escenario.aspx?idOrden=1.1&ind=6200093972&gen=2227&d=s>.

<sup>41</sup> "Exportaciones por Entidad Federativa," INEGI, 2017, [https://www.inegi.org.mx/programas/exporta\\_ef/default.html#Tabulados](https://www.inegi.org.mx/programas/exporta_ef/default.html#Tabulados).

<sup>42</sup> "Condensado General Nacional," Instituto Nacional Electoral, 2017, <https://cartografia.ife.org.mx/sige7/?infogeo=CG>.

<sup>43</sup> "Escolaridad," INEGI, 2016, <http://cuentame.inegi.org.mx/poblacion/escolaridad.aspx?tema=P>.

<sup>44</sup> "Transparencia y acceso a la Información de México," Centro de Investigación y Docencia Económicas, 2017, <http://www.metricadetransparencia.cide.edu/?section=Tablas>.

<sup>45</sup> World Bank, *Doing Business en México* (Washington, D.C.: World Bank Group, 2014), <https://www.doingbusiness.org/content/dam/doingBusiness/media/Subnational-Reports/DBI4-Mexico-spanish.pdf>.

<sup>46</sup> Juan Antonio Le Clercq Ortega and Gerardo Rodríguez Sánchez Lara, *La Impunidad Subnacional en México y sus Dimensiones*, (Puebla, Mexico: Universidad de las Américas Puebla, 2016), [https://www.udlap.mx/igimex/assets/files/2018/igimex2018\\_ESP.pdf](https://www.udlap.mx/igimex/assets/files/2018/igimex2018_ESP.pdf).

<sup>47</sup> “Panorama de las religiones en México 2010,” INEGI, 2010, [http://internet.contenidos.inegi.org.mx/contenidos/Productos/prod\\_serv/contenidos/espanol/bvinegi/productos/censos/poblacion/2010/panora\\_religion/religiones\\_2010.pdf](http://internet.contenidos.inegi.org.mx/contenidos/Productos/prod_serv/contenidos/espanol/bvinegi/productos/censos/poblacion/2010/panora_religion/religiones_2010.pdf).

<sup>48</sup> Matthew Stephenson, “Invalid Instrumental Variables in Corruption Research: A Lament,” *The Global Anticorruption Blog* (blog), May 12, 2015, <https://globalanticorruptionblog.com/2015/05/12/invalid-instrumental-variables-in-corruption-research-a-lament/>.

<sup>49</sup> Efrén Flores, “La lista de periodistas caídos en 64 años: el sexenio de Calderón es el más letal, le sigue el de EPN,” *Sin Embargo*, December 20, 2017, <https://www.sinembargo.mx/20-12-2017/3360109>.

<sup>50</sup> This result is robust.

<sup>51</sup> The results of the test are: First-stage regression summary statistics

Variable	R-sq.	Adjusted R-sq.	Partial R-sq.	Robust F(1,20)	Prob > F
idd2017	0.5649	0.3257	0.1187	5.46786	0.0299

<sup>52</sup> Jong-Sung You and Sanjeev Khagram, “A Comparative Study of Inequality and Corruption,” *American Sociological Review* 70, no. 1 (February 2005): 136-157, [https://www.jstor.org/stable/4145353?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/4145353?seq=1#metadata_info_tab_contents).

<sup>53</sup> See this discussion in Rodriguez-Sanchez, *Understanding the Problems*, 2018.

<sup>54</sup> Treisman, “What have we learned,” 211-244.

<sup>55</sup> For example, see: “Encuesta sobre las Expectativas de los Especialistas en Economía del Sector Privado: Julio de 2019,” Bank of Mexico, August 1, 2019, <https://www.banxico.org.mx/publicaciones-y-prensa/encuestas-sobre-las-expectativas-de-los-especialis/%7B53C692BE-A49E-8DF6-375D-445C63D38AEF%7D.pdf>.