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The perception of corruption

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Resumen

Este trabajo analiza los fundamentos macroeconómicos de los niveles de corrupción percibidos. El concepto de corrupción es empleado en distintas áreas y sus connotaciones varían ampliamente dependiendo tanto del individuo como de la sociedad; no obstante, es posible encontrar elementos comunes a todas las definiciones de corrupción los cuales están conectados con el uso indebido de la función pública con el objetivo de obtener ganancias privadas. Este documento se centra en esta definición amplia de corrupción.

La base de datos empleada corresponde al modulo de Identidad Nacional de la encuesta del *International Social Survey Program* (ISSP) realizada en 2004. Con el propósito de estimar el impacto de las variables independientes en la percepción de corrupción, se estimaron modelos probit ordenados y se concluye que existen variables sociodemográficas que tienen un impacto significativo como: género, estado civil, religiosidad, educación, y sector de empleo entre otras. Adicionalmente, se encuentra evidencia sobre la significación del país de residencia y patrones de comportamiento relevantes para países con características similares.

Palabras claves: corrupción, comportamiento microeconómico, análisis comparativo, opinión pública, ISSP

Clasificación JEL: D73, K42, O57

Abstract

In this paper we analyze the foundations of corruption perception. Even when we employ the concept of corruption in several areas and its connotations vary widely depending on societies and people, it is possibly to find some elements in common which are connected with the misuse of public office with the purpose of making private gains. This paper focuses on this wide concept of corruption.

We use data from the module on Citizenship of the 2004 *International Social Survey Program* (ISSP). Ordered probit models were estimated in order to study the impact of independent variables on the perception of corruption. We conclude that there are significant socio-demographic variables: gender, marital status, religiosity, education and sector of employment, among others. Additionally, we find that country of residence matters and that there are similar results among countries with common characteristics.

Key words: corruption, microeconomic behavior, comparative research, public opinion, ISSP

JEL Classification: D73, K42, O57

Introduction

We employ the concept of corruption in several areas and its connotations vary widely depending not only on societies but also on people. Corruption is interpreted as cultural phenomena. Although there are very different definitions, it is possible to find some elements in common which are connected with the misuse of public office with the purpose of making private gains. This paper focuses on this wide concept of corruption.

The data source is the module on Citizenship of the 2004 International Social Survey Program (ISSP). The survey asks respondents (approximately 1.000 per country) their opinions on a great variety of issues, including international trade, migration, corruption, politics or religion. In addition, it includes demographic and socio-economic data, such as: age, gender, education and others.

Ordered probit models were estimated in order to study the impact of these variables on corruption perception. We conclude that there are socio-demographic variables which are significant at determining corruption perception, variables such as: religion, age, the level of education, the sector of employment, among others. Additionally, in all cases the country of residence has a significant impact on corruption perception and we found some clear pattern of behavior taking into account economics as well as political characteristics.

The structure of the paper is as follows. The first section is theoretical in nature, and draws on the definition of corruption. Section two is devoted to the existing and well-developed theory on the subject (causes of corruption). In section three we analyze corruption as multidimensional phenomena. Section four sketches the main features of the econometric methods applied in this analysis, the data source and the description of variables. The fifth section deals with results. Finally, the conclusions are presented in section six.

1. Corruption: concept and general view

We employ the concept of corruption in several areas and its connotations vary widely depending not only on societies but also on people. Corruption is interpreted as cultural phenomena. In effect, social rules may differ among cultures; while in one society an action could be accepted as normal in another one the same action could be a corrupt action.

The first problem of any comparative research on corruption is arriving at a definition which lends itself to cross-cultural and cross-national research. As we mentioned, this paper focuses on a wide concept of corruption: the misuse of public office with the purpose of making private gains; this definition incorporates the notions of wrongly getting an advantage, pecuniary or otherwise, in violation of official duty and the rights of others. Although all people have a definition of behavior labeled as corrupt, there might be cultural differences in the way "wrongfully" is defined by people. Consequently, there is need for a balance between the generalizations of this concept and the capability of explaining it in a specific historical context and culture in which it occurs.

In economic terms, there are several ways to define corruption. For example, Werlin (1973) characterizes corruption as the use of public office for private needs and Blackburn et al. (2004) consider public sector corruption as the illegal, or unauthorized, profiteering by officials who exploit their positions to make personal gains. To emphasize governmental corruption, Shleifer et al. (1993), define it as the sale of state assets by civil servants in order to make gains.

Pope (2000) asserts that corruption can take place where there is a combination of opportunity and inclination. He explains that corruption can be initiated from either side of the transaction: a bribe being offered to an official, or the official requesting an illicit payment. Those offering bribes may do so either because they want something they are not entitled to, and bribe the official to bend the rules, or because they believe that the official will not give them their entitlements without some inducements being offered. On the other hand, officials may refuse to serve clients unless a bribe is paid. In this case, it is possible to differ between small bribes practiced by civil servants and the great corruption of high public officials involving large and hidden bribes in overseas bank accounts.

2. Corruption and the perception of corruption: its causes

In general terms, the perception of corruption has favored the growth of institutional instability and the persistent deterioration of the relationships among individuals, institutions and States. The loss of political legitimacy that many governments have experienced, the polarization of power and

bureaucratic inefficiency are some of the political consequences of corruption. Moreover, the perception of economic corruption would have a devastating effect because it generates a “culture of distrust” towards some institutions.

In the following section, we examine previous studies in this field. In particular, we emphasize the micro foundations of corruption at individual and country level.

2.1. Objective aspects

According to Rose-Ackerman (2001), there are six categories that capture the most important incentives for corruption: 1) the bureaucracy may be charged with allocating a scarce benefit to many individuals and firms using legal criteria other than willingness to pay, 2) civil servants may have little incentive to do their jobs well, given their pay scales and the level of internal monitoring, 3) private firms and individuals seek to reduce the costs imposed on them by governments (taxes, customs duties and others regulations), 4) governments frequently transfer large financial benefits to private firms through procurement contracts, privatizations, and the award of concessions, 5) the judiciary has the power to impose costs and transfer resources between litigants and 6) elected politicians can accept illegal payoffs both to fund their campaigns and to enrich themselves.

Taking into account cost-benefits analysis, Cábelloková (2001) studies the incentives to take corrupt actions and he holds that this problem is affected by individual perception about the level of corruption and the authority's level of tolerance. This perception may affect both the demand and supply of corrupt actions.

From a microeconomic point of view, corruption could be seen as a price and the analysis focuses on modeling its functional form. In that sense, two academic approaches could be mentioned.

In the first approach, corruption is interpreted as a tax. The starting point is the premise that rules are asymmetric and costly. Therefore, people may find it profitable to bribe and corruption would be a consequence of the high cost of legality. The rules and the laws modify the decision making process because they have costs and benefits. The fulfillment of a rule supposes a benefit and a certain cost. The cost of the rule could be seen as the time and information needed to fulfill them and it is a function of the lost in time and the information; both elements are costly (Gherzi, 2006).

Therefore, if individuals need a lot of time or information to fulfill a rule, the probability of behaving in accordance with the law decreases. To bribe or not to bribe? The decision depends on the difference between the expected benefit and cost. The costs associated with a bribe are three-fold.

First, the social cost.¹ Second, the money cost of the bribe itself which could be seen as an opportunity cost. Finally, the penalties levied for violations. In the last case, the role of the government matters because the amount of the expected costs depends on individual's perception about the intensity of the actions to avoid corruption (it depends on the enforcement, the likelihood of being caught and prosecuted, and the severity of the punishment if convicted).

Until now, we are analyzing corruption without ethical considerations, later on we will consider the subjective factors that influence the decision making process. When we ignore those subjective elements, the most relevant conclusion is that the cost of legality is inversely proportional to an individual's income. A higher income makes easier the access to information. Consequently, rules and laws have asymmetric effects, which distort individual behavior (Gherssi, 2006).

Moreover, You et al. (2005) show that income inequality is a significant determinant of corruption. With the increased inequality, the rich, as a class or as interest group, can use lobbying, political contributions or bribery to influence law-implementing processes (bureaucratic corruption) and to buy favorable interpretations of the law (judicial corruption).

Therefore, corruption could be interpreted as a tax; people may pay an illegal and informal tax which allow them to avoid a rule, a penalty etc. Moreover, we could distinguish between a bribe to gain an unfair advantage and a bribe to get something that should have been given without the bribe. In line with this argument, Posner (1999) argues the blackmail and the bribe are similar since the blackmailer and the bribed official receive a payment in exchange for not applying the law. In this case, the analysis consists of identifying to the bribe as an informal coercion that officials are capable of applying to citizens in exchange for a "favor". This payment reflects the cost of the legality, which is positively correlated with the demand of bribes (Gherssi, 2006).

The second approach holds that corruption is insurance. Given an asymmetric and costly institutional context, people buy this insurance when they bribe a government employee to protect themselves against costly rules. A person is risk-neutral if utility changes are strictly proportional to changes in income. On the other hand, in the case of risk-aversers (risk-lovers), changes in utility are less (more) than proportional (Svetozar, 1985). Therefore, people's attitudes towards bribes vary depending on their risk preferences; risk averters would be more likely to pay an insurance premium (a bribe) than risk-lovers.

¹ According to Ronald Coase (1960), an actor (business firm, individual, etc.) initiating an action does not necessarily bear all the costs or reap all the benefits of that action. Those that the actor does bear are the private costs; those that the actor does not bear are the external costs. The sum of these two is the social cost of the action.

Regarding democracy, some previous studies analyzed the link between corruption and political systems. In general, it was found that democratic systems tend to reduce corruption. For example, Montinola et al. (2002) find that political competition matters; one mechanism through which it reduces corruption is the re-election imperative, which lowers the demand for bribes. Political competition is posited to reduce corruption in two additional ways. First, the freedom of information and association characteristic of democracies helps monitoring of public officials, thereby limiting their opportunities for corrupt behavior. Secondly, the possible turnover of power in democracies implies that politicians cannot always credibly promise that particular laws and regulations will continue in the future. This minimizes the size of bribes that rent-seekers are willing to pay.

Additionally, Rose-Ackerman (2001) focuses on honesty and trust as they affect the functioning of the democracies and markets. She argues that large democracies govern themselves through political representatives, bureaucrats, judges, etc and because elected representatives cannot be perfectly controlled by voters, the electorate must have some level of trust in those it elects. The more they can be trusted to fulfill their roles willingly, the fewer the resources needed to monitor and discipline them, and the more discretion they can be given. In line with Montinola et al. (2002), Rose-Ackerman asserts that a competitive electoral process can give politicians an incentive to reveal the untrustworthy behavior of their opponents and to be trustworthy themselves.

As there are proofs regarding this relationship (Rose-Ackerman, 2001 and Montinola et al., 2002), we will focus on the satisfaction with the democratic system rather than the democracy itself.

2.2. Subjective aspects

Given the mentioned objective aspects, when the fulfillment of a rule implies high costs, decisions will vary among individuals depending on their values and moral views, which modify the perception of the expected costs and expected benefits. *Ceteris Paribus*, to bribe would not mean the same to people depending on their values. While a person could be against bribery regardless of the perceived level of corruption someone else views could depend on the existing level of corruption.

Moreover, the formation of individual perceptions about the level of corruption is affected by the access to information and the capability to analyze this information. Personal experience has a significant role; it depends on the interaction among the citizen and corrupt civil servants. Obviously, there are additional sources of information about corruption such as the media (radio, TV, written press) or information from relatives and friends.

Additionally, You et al. (2005) argue that income inequality also influences corruption perception and habituates norms about corruption in the following way: if inequality is high, “the rich are likely to believe that corruption is an acceptable way of preserving their societal position as this behavior goes unpunished and social networks of corruption expand” and people will more easily justify their corrupt activities as inequality increases”.

As Cábeková (2001) indicates, the perception of corruption may influence the level of corruption in two opposite ways. When people perceive that the level of corruption is high it is likely that: 1) citizens think that a bribe is needed and 2) government employees do not consider that a bribe is improper. Hereby, a bribe is thought to be necessary and it seems unlikely that this bribe would not be accepted. In turn, government employees could consider this activity as risk-free and with low probability of detection. Therefore, corruption increases. On the other hand, when the perception of corruption is high, the government may take greater actions in order to reduce corruption. Therefore, corruption could decrease.

3. Corruption as multicultural phenomena: some insights

According to Nelken et al. (1996) the understanding of corruption could be extended by using concepts of criminology and sociology. They hold that even if corrupt agreements are often in breach of the criminal law, we must still ask whether corruption is deviant or simply normal in some groups or some countries. But comparison should not be confined to seeking out what there is in common but also in understanding the many relevant differences in political and legal cultures.

Maingot (1994) states that that there are several fallacies regarding the concept of corruption. The most frequent of them stems from the tendency towards personalization: e.g., believing that one thoroughly corrupt individual is the cause of it all. At a more general level, personalization responds to a natural and widespread, prurient interest in what people do, rather than to abstract notions of how society functions. Regarding religious beliefs, the author argues that it is also a plausible proposition that in Judeo-Christian societies, personalizing the problem of corruption responds to the propensity to see both redemption and punishment in individual, not systemic, terms. Another fallacy to be avoided is that of odious moral comparisons of whole cultures. North Americans, for example, have long tended to view Latin America as inherently corrupt. From the 19th century onward, Latin Americans also judged the US capitalist culture as profoundly corrupt.

Moreover, the author adds that there are two subsets of specific fallacies about remedial action which often flow from cultural generalizations. First, that one can impose one's moral codes cross-

culturally, i.e., the belief that one can teach other societies specific approaches to probity in public office. Second, a specific fallacy which is the opposite of the previous one: the notion that it is impossible to pass judgment about probity and corruption on other cultures. Different cultures are perfectly capable of making the necessary "translation of codes" to form very similar judgments about corruption. It is this shared understanding that justifies attempts to formulate theories of corrupt behavior and the mechanisms for combating it.

Maingot (1994) classifies the theories that explain corrupt behavior at different levels. Firstly, those that are premised on cultural behavior: cultural explanations are very common in Latin America and tend to adhere to two well-established theories of criminal behavior, both emphasizing the socialization process. For example, the theory of cultural transmission maintains that offenders adhere to a unique value system which endorses, rather than condemns, the deviant behavior. This would mean that Latin American officials are corrupt because there exists a bifurcated moral sense in which corrupt behavior, while in office, is not only not condemned but, on the contrary, is actually approved. The second theory is that of differential association: e.g., because of their intimate, small-group interaction and association with deviants, individuals engage in similar behavior. One often hears that because the big fish are "biting," one should naturally expect the smaller fry to "bite" also.

Secondly, there are theoretical schools which emphasize social conflict or social strain explanations. According to Maingot (1994), this approach tends to be popular among more radical interpreters of the Latin American and Caribbean reality. It is assumed that, due to the obstacles to legitimate social mobility presented by the steeply stratified nature of its social structures, there is a propensity to resort to deviant means in order to achieve socially approved goals.

Finally, there are theories which emphasize individual choice and focuses on the individual as a rational actor, one who makes utilitarian choices in a particular social and economic context. This theory focuses on the individual who, in contemplation of a corrupt act, is able to weigh rationally his moral scruples, fear of official sanctions and public disapproval on the one hand against the potential material gains and psychological gratifications provided by the act on the other. Evidently, while the desire for gain might be strong, the legal and moral context is subject to change and, thus, is able to alter the outcome of the calculation. This approach combines rational actor theory with more economic theories. Therefore, it enables us to understand why so many officials still opt for honesty even in the face of powerful, almost all-encompassing, pressures towards deviance and corruption. In that sense, Maingot (1994) argues that elements such as moral sentiments and fear of public disapproval must carry a powerful counter weight.

Nelken et al. (1996) state that rather than regarding corruption and anti-corruption as independent phenomena, it is more useful to examine how corruption and concern about corruption grows and

falls. They added that those engaged in corrupt agreements tend to overreach themselves and bring about the collapse of these exchanges: a) through ever increasing competition amongst those seeking clients, b) through the eventual fight back by those excluded and c) above all, once investigations get started, because of the scramble –in the prisoner’s dilemma logic– to be the first to confess once they know or believe that trust in mutual silence has been broken. The authors found evidence that how anti-corruption campaigns form part of the cycle of corruption and its response itself varies by culture. They mention that the attack on corruption is seen by sociologists as an attempt to re-legitimize the rulers and/or specific political actors or criminal justice agencies. But both corruption and anti-corruption can serve to undermine or extend the legitimacy of politicians, parties, and the State. Within criminology, the analysis of corruption is most closely associated with the study of state crime, white-collar and organized crime, and its regulation.

Therefore, there is much to be gained from examining corruption in a comparative perspective. The search for common factors has thrown up a number of causes of corruption. Even countries with similar legal and political arrangements can have intriguing differences in their definitions of where private interest interferes with public performance. There are important but less acknowledged differences amongst countries in their toleration of open political lobbying by businesspeople.

On the other hand, public opinion polls show an increasing perception of corruption and the media increasingly reports such stories, as they do those of the growth of fraud. But given low visibility of the behavior and modest enforcement, it is easy to produce an artificial “control wave” which may not correspond to any underlying behavioral change (Nelken et al., 1996).

4. Data source and methodology

4.1. The survey

As mentioned, the data source is the module on Citizenship of the 2004 *International Social Survey Program* (ISSP).² The survey asks respondents their opinions on a great variety of issues, including international trade, migration, politics, taxes and corruption, as well as demographic and socio-economic information, such as age, gender, education, religiosity and others.

The question used in the survey to identify respondent’s perception of corruption is:

Taking into account your experience,

² More information is available on ISSP website: www.issp.org.

how widespread do you think corruption is in the public service in your country?

Table 1 shows the weighted frequency distribution of the answers to this question in the whole sample (45,765 respondents).

Insert Table 1: Answers

4.2. Ordered probit models

The model aims at determining how different individual characteristics affect the formation of opinions towards corruption among government employees. In this respect, ordered probit models were estimated.

The dependent variable seeks to grasp citizen's perception of corruption and it is defined as follow: Corruption = (*Taking into account your experience, how widespread do you think corruption is in the public service in your country?*) =

- 0 if respondent answers "hardly anyone",
- 1 if respondent indicates "a small number",
- 2 if respondent says "a moderate number",
- 3 if respondent indicates "a lot of people" and
- 4 if respondent answers "almost everyone".

Countries abbreviations are in table 2 and the description of the variables is included in table 3.

Insert Table 3: Description of independent variables

The phenomenon to model is discrete, the unobserved or latent variable is y^* (perception of corruption) which is related to the independent observed variables (x_i).

$$y_i^* = x_i\beta + \varepsilon_i$$

Where: $\varepsilon / x \sim N(0,1)$

And it is assumed that the observed categories are related to the latent variable in the following way (it is supposed that the dependant variable has three levels):

$$y_i = \begin{cases} 0 & \text{if } y_i^* < \tau_1 \\ 1 & \text{if } \tau_1 \leq y_i^* \leq \tau_2 \\ 2 & \text{if } \tau_2 \leq y_i^* \end{cases}$$

Where: τ_i is a “cut point” (a parameter estimated).

For example, for a given value of x , the probability of having a high perception of corruption (for example $y = 2$) corresponds to the region of the distribution where y^* falls in $[\tau_2, \infty)$:

$$\Pr(y = 2|x) = \Pr(\tau_2 \leq y_i^*|x) = \Pr(\tau_2 < x\beta + \varepsilon) = \Pr(\tau_2 - x\beta < \varepsilon)$$

The standard formula for this probability in ordinal models is:

$$\Pr(y = 2|x) = 1 - F(\tau_2 - x\beta)$$

Assuming that $F(\cdot)$ is a normal distribution (with error variance equal to one), the estimation models used are probit models.

The estimated parameters in ordered probit models do not provide direct information on the relationship between the independent and dependent variables (Long, 2001). Substantive interpretations are usually based on the prediction of probabilities and functions of these probabilities. These predictions are made for different groups of individuals and the marginal effects of the independent variables are calculated. If the independent variable is binary, the marginal effect is the change from not having a particular characteristic to having it.

With the estimation of ordered probit models, the impact of variables such as age, gender, human capital, religion among others, on individual opinion on corruption will be established.

5. Results

The model includes dummy variables representing individual characteristics and in order to capture fixed effects per country we include dummy variables reflecting country of residence.

Insert Table 4: The model

We found that gender is significant and the result indicates that women are more likely to perceive a higher level of corruption than men.

Secondly, it was found that the variables reflecting individual's age are not significant; this result implies that there are no significant differences among youngest people, middle-aged people and the oldest group.

Thirdly, we found that marital status matters. While those people who are married or (live as married) tend to perceive a lower level of corruption than other people, the opposite is true for those who are divorced.

Moreover, as it was expected, the level of education has a relevant role in determining the perception of corruption. It was found that people who have completed at least secondary education are more likely to perceive a lower level of corruption. It is known that the perceived level of corruption could be very different from the actual level; therefore, this result could imply that access to information and the capability to process this information matter: more educated people have more information about the actual level of corruption and better capabilities to process the information and this fact influences on the formation of the perception of corruption.

Regarding religion and religiosity the model confirms our hypothesis. Firstly, there are no significant differences among religious groups (Roman Catholic, Protestant and others) and the same happens if we compare people who identifies with some religious group and atheists. On the other hand, the degree of religiosity (measured by weekly attendance to religious services) does influence the perception of corruption; it decreases the probability of perceiving a high level of corruption.

Taking into account the place of residence, we found that there is no significant difference among people living in urban areas and others.

Concerning labor market, we found a significant difference among people who are self-employed and other people. Specifically, self-employed people tend to perceive a higher level of corruption. It might be possible that self-employed people are exposed to more incidents of corruption. The opposite is true in the case of people who work full-time; those people tend to perceive a lower level of corruption.

Additionally, the sector of employment is a determinant of corruption perception. Those who are working in a private enterprise are more likely to perceive a higher level of corruption than those who are employed in the public sector. On the other hand, it is worth noting that there is no

significant difference among people who are unemployed and those who are employed. The same happens among: a) those who are retired and other people and b) those people who belong to a union and other people.

Connected with democracy, we found that those who have a favorable opinion on democracy are more likely to perceive a lower level of corruption.

It is worth noting that all country dummies are significant. This result might mean that there are significant cultural and political differences that influence the perception of corruption. While most of them show a positive sign, there is a small group of countries that register a negative sign. We will explain this result differences later.

We calculate the marginal effects and their standard errors after estimation. Rather than reporting coefficients, tables 5.1 and 5.2 report the discrete change in the probability for each significant dummy variable. The marginal effects are nonlinear functions of the estimated parameters, so they cannot generally be inferred directly from the parameter estimates.

Insert Table 5.1: Marginal effects (individual characteristics)

As could be seen in table 5.1, the probability of perceiving the highest level of corruption, for the whole sample, is 5.63%. This table also reports the change in this probability when the dummies variables considered turn from 0 to 1.

Firstly, taking into account respondent's gender we found that the probability of perceiving the highest level of corruption increases 0.5 percent points (pp) when we consider a woman instead of a man.

Regarding marital status, if we take into account married people this probability decreases 0.4 pp. On the other hand, this probability increases 0.7 pp when we change to divorced people.

Moreover, when we consider the third or fourth levels of education, the change in the probability is also relevant. It decreases 1.0 and 2.8 pp, respectively.

If the person attends to religious services once a week or more frequently, the decrease in the mentioned probability is 0.5 pp.

Additionally, the probability of perceiving the highest level of corruption also increases if the person is working in a private enterprise (1.1 pp) or if the person is self-employed (1.6 pp). However, to work full time reduces this probability in 0.4 pp

Finally, we also find that the perception of the performance of democratic institutions have the most significant impact on corruption perception; when we change from someone who believes that the state of democracy in his/her country is not satisfactory to someone who has a favorable opinion, the probability reduces 7.0 pp. This is the biggest changes in the probability.

Insert Table 5.2: Marginal effects (fixed effects per country)

Table 5.2 summarizes the information about the change in the probability of perceiving the highest level of corruption for each country variable.

The average change in the probability is 15.5 pp, Japan and Hungary register similar values (16.3 pp and 14.1 pp, respectively). The median is 12.8 pp, United States is close to this value, 11.5 pp.

The biggest impacts were found in Latin American countries: Brazil, Venezuela and Mexico, the probability raises 57.3 pp, 46.3 pp and 44 pp, respectively. This result implies that Brazilians, Venezuelans and Mexicans tend to perceive a higher level of corruption than the rest of the sample.

Moreover, the table shows that all Latin American countries are situated in the first half of the table; the change is higher than the average. In this group of countries, Chile and Uruguay registered the smallest identical impact (18.3 pp).

Something similar happens in the case of Asia, with the exemption of Taiwan, all countries are found in the first half. In the case of Taiwan, the change in the probability of perceiving the highest level of corruption is 8.8 pp.

On the contrary, in the case of EU the majority of countries are found in the second half of the table, with lower changes in the mentioned probability than both the average and the median changes. Portugal is the exemption; it belongs to the EU and is found in the top half of the table.

Similarly, Canada and United States, which belongs to America but with very different economic performance and cultural characteristics than Latin American countries, raise lower values (4.2 pp and 11.5 pp, respectively). Additionally, Anglo-settlement colonies (Canada, New Zealand and United States) fall in the bottom half as do the majority of rich countries.

As mentioned, our sample included 37 countries and only in eight cases the probability reduces: Switzerland (-0.9 pp), Norway (-1.4 pp), Netherlands (-1.6 pp), Cyprus (-1.9 pp), Great Britain (-2.1 pp), New Zealand (-2.3 pp), Finland (-3.5 pp) and Denmark (-3.7 pp). It is worth noting that all of those countries are rich and almost all of them belong to the EU.

Analyzing political characteristics, we found another clear pattern of behavior. The former Socialist states of Eastern Europe are located in the first half of the table in the following order: Bulgaria (39.3 pp), Poland (38 pp), Russia (33.8 pp), Slovakia (33.2 pp), Slovenia (21 pp), Czech Republic (20.8 pp), Latvia (18.9 pp) and Hungary (14.1 pp). This result could be related to the past experiences of corruption at the governmental level than to present events.

Taking into account country size (measured by the population) we found that, in general, smaller countries are at the bottom of the table (Cyprus, Finland, Denmark, New Zealand and Norway).

Regarding others characteristics such as whether the country was a colony or official language, we do not found a clear pattern of behavior.

6. Conclusions

We found that some individual characteristics have a significant effect on the probability of perceiving the highest level of corruption: gender, marital status and the level of education. When partial effects were calculated, it was found that the probability increases when we consider a woman instead of a man and when we change from people who are not married to those who are. On the other hand, this probability increases when we change to divorced people. Finally, when we consider the two highest levels of education, the change in the probability is, as expected, significant and negative.

Regarding religion and religiosity we found that the degree of religiosity does influence the perception of corruption; it decreases the probability. On the contrary, there is no significant difference among religious groups and atheists and other people.

Additionally, it was found that some economic variables also matter. Those who are working in a private enterprise and those who are self-employed are more likely to perceive a higher level of corruption and the opposite was found for those who work full-time. On the contrary, to be unemployed, to belong to a union or to be retired were not significant.

With respect to democracy, it was found that those who have a favorable opinion on the way that democracy works in his/her country, are more likely to perceive a lower level of corruption.

Taking into account fixed effects, as expected, all country dummies were significant. Regarding countries ranking, we found that all Latin American countries showed changes which are higher than the average and the same is true for ex-Socialist states and the majority of East Asian countries.

The highest changes in the analyzed probability were found in Latin American countries: Brazil, Venezuela and Mexico (more than 40 pp) and others Latin American countries also rank in the top half (Uruguay and Chile).

Similarly, all eight of the ex-Socialist states are in the top half of the table. The model also shows that in the case of the former Socialist states of Eastern Europe (Bulgaria, Czech Republic, Hungary, Latvia, Poland, Russia, Slovakia and Slovenia) the change in the probability is bigger than the average. This result might be connected with past experiences of corruption at the governmental level than to present events.

Moreover, almost all East Asian countries are found in the first half of the table with the exception of Taiwan falling just below the top half.

On the contrary, the majority of European countries showed lower changes than the average, only Portugal is found in the top half of the table.

We also found that all Anglo-settlement colonies (Canada, New Zealand and United States) fall in the bottom half as do the majority of rich countries.

Finally, only in eight countries we found a negative change, in general, they are small, rich and belong to the EU (Cyprus, Denmark, Finland, Great Britain, Netherlands, New Zealand, Norway and Switzerland), Denmark shows the biggest reduction in the probability, -3.7 pp.

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Annex - Tables

Table 1
Distribution of answers

<i>Taking into account your experience, how widespread do you think corruption is in the public service in your country?</i>	
Categories	Frequency
Hardly anyone	4,28%
A small number	26,86%
A moderate number	30,55%
A lot of people	26,60%
Almost everyone	11,71%
Total	100%

Table 2
Country abbreviations

Abbreviations	Country	Abbreviations	Country
At	Austria	Jp	Japan
Au	Australia	Kr	South Korea
Bg	Bulgaria	Lv	Latvia
Br	Brazil	Mx	Mexico
Ca	Canada	Nl	Netherlands
Ch	Switzerland	No	Norway
Cl	Chile	Nz	New Zealand
Cy	Cyprus	Ph	Philippines
Cz	Czech Republic	Pl	Poland
De	Germany	Pt	Portugal
Dk	Denmark	Ru	Russia
Es	Spain	Se	Sweden
Fi	Finland	Si	Slovenia
Fla	Flanders	Sk	Slovakia
Fr	France	Tw	Taiwan
Gb	Great Britain	Us	United States
Hu	Hungary	Uy	Uruguay
Ie	Ireland	Ve	Venezuela
Il	Israel		

Note: Australia was dropped from the model due to collinearity.

Table 3
Description of independent variables

Area	Variable	Values	Mean
Religion and religiosity	No_relig	1 if respondent does not identify with some religious group and 0 in other case	0.195
	Attend2	1 if the person attends religious services once a week or more and 0 in other case	0.189
	R_catholic	1 if respondents religion is Roman Catholic and 0 in other case	0.369
	Protestant	1 if respondents religion is Protestant and 0 in other case	0.220
Labor market	Unemployed	1 if unemployed and 0 in other case	0.075
	Retired	1 if retired and 0 in other case	0.191
	Emp_ft	1 if respondent is employed full time 0 in other case	0.438
	Private_s	1 if working in a private enterprise and 0 in other case	0.399
	Self_emp	1 if being self-employed and 0 in other case	0.123
	Union2	1 if belonging to an union and 0 in other case	2.330
Human Capital	Edu_level2	1 if respondent is above lowest qualification 0 in other cases	0.203
	Edu_level3	1 if respondent has completed higher secondary or above higher secondary level and	0.379
	Edu_level4	1 if respondent has a university degree 0 in other cases	0.146
Place of residence	Urban	1 if respondent lives in a big city, suburb or outskirts of a big city and 0 in other case	0.444
Other socio-demographic variables	Gender	1 being a woman and 0 being a man	0.533
	Age1	1 if respondent's age is between 18 and 39 years old and 0 in other case	0.395
	Age2	1 if respondent's age is between 40 and 60 years old and 0 in other case	0.379
	Married	1 if married or living as married and 0 in other case	0.570
	Divorced	1 if divorced and 0 in other case	0.083
Others variables	Dem_today	1 if respondent places the state of democracy in his country among 5 to 10 and 0 in other case	0.723

Table 4
The model

	corruption
gender	0.041**
	(0.017)
age1	-0.004
	(0.031)
age2	-0.015
	(0.022)
married	-0.039***
	(0.012)
divorced	0.057**
	(0.029)
edu_level2	-0.001
	(0.025)
edu_level3	-0.092***
	(0.024)
edu_level4	-0.287***
	(0.044)
r_catholic	-0.001
	(0.036)
protestant	-0.006
	(0.039)
attend2	-0.043**
	(0.020)
no_relig	0.052
	(0.039)
urban	0.019
	(0.021)
self_emp	0.131***
	(0.019)
emp_ft	-0.031*
	(0.019)
private_s	0.100***
	(0.016)
unemployed	0.065
	(0.043)
retired	-0.022
	(0.030)
union2	-0.010
	(0.010)
dem_today	-0.509***
	(0.028)
at	0.110***
	(0.019)
bg	1.486***
	(0.054)

br	1.936***
	(0.045)
ca	0.299***
	(0.012)
ch	-0.085***
	(0.016)
cl	0.897***
	(0.027)
cy	-0.190***
	(0.034)
cz	0.979***
	(0.026)
de	0.328***
	(0.016)
dk	-0.464***
	(0.019)
es	0.337***
	(0.017)
fi	-0.421***
	(0.017)
fla	0.296***
	(0.016)
fr	0.347***
	(0.015)
gb	-0.216***
	(0.011)
hu	0.746***
	(0.021)
ie	0.331***
	(0.023)
il	1.343***
	(0.044)
jp	0.820***
	(0.026)
kr	0.935***
	(0.027)
lv	0.908***
	(0.025)
mx	1.605***
	(0.042)
nl	-0.161***
	(0.010)
no	-0.133***
	(0.014)
nz	-0.245***
	(0.008)

ph	1.287***
	(0.040)
pl	1.459***
	(0.044)
pt	0.893***
	(0.026)
ru	1.362***
	(0.048)
se	0.145***
	(0.016)
si	0.980***
	(0.025)
sk	1.324***
	(0.037)
tw	0.533***
	(0.027)
us	0.646***
	(0.019)
uy	0.894***
	(0.023)
ve	1.672***
	(0.047)
Observations	37,681

Notes: 1. Robust standard errors in parenthesis.

2. * significant at 10%; ** significant at 5%; *** significant at 1%.

3. Australia (Au) was dropped from the model due to collinearity.

Table 5.1
Partial effects

Prob(corruption = 4) = 0.05631777							
variable	dy/dx	Std. Err.	Z	P>z	[95%	C.I.]	X
gender	0,005	0,002	2,340	0,019	0,001	0,009	0,489
married	-0,004	0,002	-2,880	0,004	-0,007	-0,001	0,587
divorced	0,007	0,003	1,960	0,050	0,000	0,013	0,082
edu_level3	-0,010	0,003	-3,990	0,000	-0,015	-0,005	0,393
edu_level4	-0,028	0,004	-7,610	0,000	-0,035	-0,021	0,160
attend2	-0,005	0,002	-2,320	0,020	-0,009	-0,001	0,154
emp_ft	-0,004	0,002	-1,680	0,093	-0,008	0,001	0,521
privat_s	0,011	0,002	5,840	0,000	0,008	0,015	0,484
self_emp	0,016	0,003	5,640	0,000	0,010	0,022	0,131
dem_today	-0,070	0,007	-10,480	0,000	-0,083	-0,057	0,736

Table 5.2
Marginal effects – ranking of countries

Prob(corruption=4) = 0.05631777							
variable	dy/dx	Std. Err.	z	P>z	[95%	C.I.]	X
br	0,573	0,008	72,300	0,000	0,557	0,588	0,014
ve	0,463	0,011	43,660	0,000	0,442	0,484	0,030
mx	0,440	0,009	50,500	0,000	0,423	0,457	0,025
bg	0,393	0,013	29,260	0,000	0,367	0,419	0,025
pl	0,380	0,010	39,210	0,000	0,361	0,399	0,031
il	0,341	0,012	29,170	0,000	0,318	0,364	0,016
ru	0,338	0,013	25,890	0,000	0,312	0,363	0,045
sk	0,332	0,008	40,600	0,000	0,316	0,348	0,022
ph	0,317	0,009	33,610	0,000	0,299	0,336	0,025
si	0,210	0,007	30,910	0,000	0,197	0,224	0,025
cz	0,208	0,007	30,570	0,000	0,195	0,222	0,032
kr	0,199	0,007	27,350	0,000	0,184	0,213	0,012
lv	0,189	0,006	30,890	0,000	0,177	0,201	0,021
uy	0,183	0,005	34,010	0,000	0,173	0,194	0,026
cl	0,183	0,007	24,450	0,000	0,168	0,198	0,033
pt	0,182	0,008	23,970	0,000	0,167	0,197	0,033
jp	0,163	0,007	23,450	0,000	0,150	0,177	0,014
hu	0,141	0,006	24,000	0,000	0,129	0,152	0,025
us	0,115	0,005	23,040	0,000	0,105	0,124	0,025
tw	0,088	0,006	15,860	0,000	0,077	0,098	0,034
fr	0,051	0,003	15,810	0,000	0,044	0,057	0,019
es	0,048	0,004	13,730	0,000	0,041	0,055	0,048
ie	0,048	0,004	11,420	0,000	0,040	0,056	0,020
de	0,047	0,004	12,790	0,000	0,040	0,054	0,030
ca	0,042	0,003	15,760	0,000	0,037	0,048	0,018
fla	0,042	0,003	12,900	0,000	0,035	0,048	0,030
se	0,018	0,002	7,380	0,000	0,013	0,023	0,029
at	0,014	0,003	4,940	0,000	0,008	0,019	0,023
ch	-0,009	0,002	-5,530	0,000	-0,012	-0,006	0,026
no	-0,014	0,002	-8,280	0,000	-0,017	-0,010	0,032
nl	-0,016	0,001	-11,470	0,000	-0,019	-0,013	0,040
cy	-0,019	0,003	-5,750	0,000	-0,025	-0,012	0,022
gb	-0,021	0,002	-12,100	0,000	-0,024	-0,017	0,018
nz	-0,023	0,002	-12,380	0,000	-0,027	-0,019	0,032
fi	-0,035	0,003	-12,240	0,000	-0,040	-0,029	0,029
dk	-0,037	0,003	-12,200	0,000	-0,043	-0,031	0,028