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Zuzana Fungáčová, Ilari Määttä and
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Zuzana Fungáčová, Ilari Määttä and Laurent Weill

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Abstract

This research investigates the determinants of corruption in China using micro-level data. We use survey data on 6,000 households from 28 provinces to estimate logit models that show how corruption perceptions and attitudes to corruption are shaped by individual and provincial determinants. Respondents who see themselves as lower class, as well as members of the Communist Party of China, are more likely to perceive and reject corruption than other respondents. People in rural areas perceive less corruption, but do not differ in their attitudes toward corruption.

JEL codes: H11, K42, P16.

Keywords: corruption, China.

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1 Introduction

China, the world's largest economy when adjusted for purchasing power parity, is often described as a highly corrupt country. Most research on corruption use country-level measures of corruption, because micro-level data are difficult to collect (e.g. Treisman, 2000). Moreover, studies that employ micro-level data are mostly performed on a cross-country basis (e.g. Torgler and Valev, 2010). Only a handful focus on a single country, e.g. Svensson's study of Uganda (Svensson, 2003).

The aim of this research is to provide information on the determinants of corruption in China using micro-level data. To this end, we use the 2008 China General Social Survey (CGSS) conducted by Renmin University. The survey contains information on 6,000 households from 28 provinces. It includes detailed information on income, education, viewpoints, and many other household characteristics. Our analysis focuses on two questions in the survey related to corruption. The first asks about the respondent's perception of corruption. The second considers the respondent's attitudes toward corruption.

We consider these questions as relevant measures to assess the behavior of respondents related to corruption. The perception of corruption is based on the agreement of individuals with the requirement to be corrupt to get all the way to the top in China today.¹ The attitude toward corruption provides information on the moral attitude of respondents regarding seeking of advantages through relationships. Rabl and Kühlmann (2008) and Rabl (2011) show how the attitude toward corruption shapes the importance of corruption. It is however not commonly investigated in the studies on corruption, because this kind of data is rarely available.

Individual determinants considered in our study include income, household perception of social class, gender, age, marital status, health, employment and education. In addition, we include two China-specific characteristics. First, we account for the "rural *hukou*" status of the respondent. The hukou system (China's household registration system) restricts internal migration in China by excluding migrant workers from social services if they live outside their designated region. This status gives information on the location of the respondent. Second, we consider if the respondent is a member of the Communist Party of China (CPC). This variable is indicative of political connections that might shape a person's views on corruption. We also take account for provincial characteristics by either including provincial fixed effects or gross regional product, international trade per capita, and share of workers in mining sector in our analysis. This

¹ In comparison, the corruption perception index provided by Transparency International is based on opinions of business people and analysts, and assesses how wide respondents think that corruption is.

enables us to test for the possible influence of cross-provincial differences in perception and attitude toward corruption.

A few studies deal with the determinants of corruption in China. Dong and Torgler (2013) investigate the determinants of the number of corruption cases at the provincial level during the 1998–2007 period. Zhu, Lu, and Shi (2013) examine how a large set of individual characteristics influence the perception of corruption using a dataset from 2002. Building on these studies, we contribute to the literature by providing a broader, updated investigation of the determinants of perception of corruption and attitudes toward corruption.

This study on corruption in China has several implications. From the policy perspective, an improved understanding of attitudes toward corruption might help in enhancing the efficiency of anti-corruption policies. This issue is important for China, where corruption has been regularly stressed as a key concern on the political agenda of Chinese officials. From a research perspective, our analysis might help improve our understanding of the persistence of high corruption over time and the cross-provincial differences in corruption.

The rest of the article is structured as follows. Section 2 provides the background on corruption in China. Section 3 presents data and methodology. Section 4 displays the results. Section 5 concludes.

2 Background

In this section, we discuss corruption in China and present a short survey of the literature on the determinants of corruption.

2.1 Corruption in China

Many papers weigh in on the evolution of corruption in China. Wedeman (2012), for example, notes that the number of corruption cases in China spiked in the 1980. Thereafter the number of cases decreased, but their severity increased. He (2000) shows that the transition to market economy provides an important explanation for increasing corruption in China. After the launch of economic reforms in 1978, there was a rise in corrupt activities focused on exploiting the dual price system through speculation on quotas and smuggling in the 1980s. The corruption focus then shifted in the 1990s to newly established stock, real estate, and capital markets, where the regulation failed to keep up with the speed of reforms. In recent years, the process of privatization of state-owned enterprises and other assets has been marked with corruption (Fisman and Wang, 2015).

He (2000) notes that the increase of opportunities for corruption was accompanied by an ideological shift. With economic development the centerpiece of CPC policy, it became an excuse for neglecting legal norms and moral standards. Leadership on all levels tolerated corruption as long as high economic growth was maintained and growth targets were met.

The cultivation of personal networks of influence, or *guanxi*, is a major cultural feature of corruption in China. While serving as a legitimate basis for building strong relationships through reciprocal gift giving, it also functions as an efficient cover for corrupt activities. Zhan (2012) argues that the rapid institutional transition in China has caused an ineffective flow of information in the formal economic and political institutions. It has led to filling the institutional gaps with *guanxi* networks that increase opportunities to engage in corrupt behavior. Personal ties and reputation within a *guanxi* network are highly important for corruption, because they help in identification of suitable partners for corrupt dealings and reduce the chances of getting caught.

Zhan (2012) notes that *guanxi* networks can be useful in the corrupt exchange of goods. The goods can be given as a gift, with the expectation of a gift in return later. The value of the exchanges is expected to grow with time to reflect the deepening relationship. The ongoing feature of exchanging benefits within the network makes it challenging for officials to trace, or even detect, corrupt transactions.

Guanxi plays an important role in setting norms. Zhan (2012) explains that interaction of people within the *guanxi* network shapes their shared set of beliefs, values, and ideas that affect subsequent behavior. The norms set by the *guanxi* network may even trump legal norms and lead to acceptance of corrupt practices as business as usual. The network further contributes to persistence of questionable norms by offering a semblance of stability. This is especially important in the transition countries, where rules and political morality may be rapidly evolving.

The CPC, which has long voiced concerns about corruption, has made little progress in actually reducing it. Sapio (2005) claims that the CPC disciplinary system holds the power over the state anti-corruption agencies, providing a safety net for party members who get caught engaging in corrupt behavior. The party discipline system spares members the embarrassment of a trial and conviction in open court and lets the CPC resolve corruption cases internally. As only a small fraction of corruption cases are handed over to the judicial system, party members generally escape severe punishment. Manion (2004) shows that only 5% of the 1.6 million party members investigated internally from 1988 to 1997 were ever charged with wrongdoing. As noted by Rose-Ackerman (1997), when the likelihood of punishment or the severity of punishments decreases, people have a higher incentive to engage in corruption.

Another distinct feature of China's anti-corruption efforts are numerous campaigns launched during the transition. Manion (2004) points out that efforts to detect and investigate corruption increase during anti-corruption campaigns. This results in a large increase in the number of corruption cases. While Chinese officials treat the identification of corrupt individuals as a success, Western observers interpret such findings differently. For them, a large increase of corruption cases during campaigns merely suggests the general inefficiency of anti-corruption institutions.

Quah (2013) points out that the anti-corruption campaigns may be used as a means of eliminating political opponents. Thus, the campaigns are a useful tool for Chinese leaders. They can simultaneously be used to improve economic environment, win public support, and undermine the political opposition.

Even though corruption affects all aspects of Chinese society, the situation does not seem that remarkable from an international or historical context. According to the 2015 Corruption Perception Index of Transparency International, China scored 37 on a scale from 0 to 100 with higher values associated with lower corruption, and ranked 83 out of the 167 countries surveyed. Ramirez (2014) uses real GDP per capita and corruption levels to make comparisons between contemporary China and the US about 100 years ago. He argues that during these times of rapid economic development, Chinese corruption is probably about the same or lower than in the US during its development phase. These comparisons suggest that the extent of corruption in China is not exceptionally high in an international or an historical comparison.

2.2 Literature on the determinants of corruption

Our work contributes to the literature on the determinants of corruption. We survey the main general studies on this topic before examining the specific works on China.

Most corruption research is based on corruption perceptions data. Serra (2006) provides an overview of the findings in the main empirical cross-country studies on determinants of corruption. There is wide consensus that economic development, openness to trade, education, common law legal frameworks (i.e. British legal system), freedom of media, and political stability all reduce the perceived level of corruption.

Cabelkova (2001) shows that perceived corruption can facilitate actual corruption by increasing the likelihood of offering or requesting bribes. Melgar, Rossi, and Smith (2010) hypothesize that a high level of corruption perception may be more harmful than corruption itself

as it can generate a culture of distrust toward institutions and cause negative effects in the economy. In their cross-country analysis they list several individual characteristics that can influence the perceived level of corruption. If a person is self-employed, a private sector worker, divorced, unemployed, or female, it is likely that they harbor a heightened perceived level of corruption. On the other hand, if people are employed full time, married, religious, or highly educated, they have lower perceived corruption.

Donchew and Ujhelyi (2014) focus on the difference between perceived and effective level of corruption. They use both experienced and perceived corruption data and show the importance of distinguishing between the two. They find several factors that systematically bias perceived corruption downward from corruption experience. Additionally, perception indices are influenced by an absolute level of corruption (number of occurrences), rather than a relative level of corruption (percentage of population affected), which biases corruption perceptions upward for large countries. Finally, the corruption perceptions exhibit a diminishing sensitivity to corruption experience. For example, if individuals do not experience corruption often, perceptions from media play a greater role. They conclude that the actual corruption experience is a weak predictor of reported corruption perception.

Few studies analyze the determinants of corruption in China. Dong and Torgler (2013) study the determinants of the number of corruption cases at the provincial level during the 1978–2007 period. Many macro-level variables are found to have a different effect in China than in a cross-country context, possibly due to cultural or institutional differences. In any case, their critical insight is the positive association between income and corruption, which is the opposite of cross-country studies. They show that the effect decreased in the 2003–2007 sub-period from the 1998–2002 sub-period. Arguing that the decrease reflects institutional improvements, they predict further improvements will eventually lead China to experience the same negative association found in cross-country studies.

Dong and Torgler (2013) also note that trade openness reduces corruption in China. Their hypothesis is that a presence of foreign companies pressures local officials to reduce corruption, because the increased competition reduces the amount of rents available. Only weak evidence is found for association between natural resource abundance and corruption in the cross-country context. However, they find that their indicator for natural resource abundance – share of total workers in the mining sector – is positively associated with registered corruption cases in China. The reasoning is that natural resource endowments create opportunities for corruption.

Zhu, Lu, and Shi (2013) examine how media exposure influences the perception of corruption in China. They use a dataset from 2002 and control for different individual characteristics

in the estimations. The main finding is that a tightly controlled media's coverage of corruption cases decreases perception of corruption. They find no significant impact for age, gender, or education, but observe a negative influence on corruption perception for people who live in rural areas or are members of the CPC. They further show that an individual's self-reported economic situation is negatively associated with perceived corruption.

3 Data and methodology

3.1 The survey

Our source of data at the micro-level is the Chinese General Social Survey 2008 (CGSS).² As explained by Bian and Li (2012), the first Chinese General Social Survey was done in 2003 as a co-operation between Survey Research Center of Hong Kong University of Science and Technology and the Department of Sociology at the Renmin University of China. It aims at providing researchers with data on development of social structure and quality of life in China. Several new waves have been implemented since the initial survey. In this study, we use the 2008 survey because unlike other waves, this particular survey included questions on both perception and attitudes toward corruption.

Bian and Li (2012) report that the survey was conducted through personal interviews with structured questionnaires. Targeted respondents for the interviews were civilian adults. The sample size is 6,000, which is designed to five strata that account for regional and administrative variations in China. The first stratum includes urban areas of the three municipalities directly under the central government: Beijing, Shanghai, and Tianjin. The second stratum consists of Chongqing and 26 provincial capital cities, which are on a secondary place after the central municipalities when it comes to allocation of resources from the central government and socio-economic development. The third, fourth and fifth strata correspond to eastern, middle and western region. These strata include both, urban and rural households, and the distribution of sampled households is proportional to the size of the targeted population.

Most of the survey questions are asked to all the individuals. However, the question about perception of corruption is only included in a module asking about respondents' attitudes and opinions, which is conducted only for half of the respondents. Therefore we have a sample size of 2,938 respondents for corruption perception and 5,829 respondents for attitude toward

² Data analyzed in this paper were collected as part of the research project "China General Social Survey (CGSS)," which was carried out by the National Survey Research Center, Renmin University of China (NSRC). The authors appreciate Center's assistance in providing the data.

corruption. The split between these two samples occurs at community level. Both samples include 100 counties, but the smaller sample includes only about three communities in each county, while the larger sample includes six. Each community includes 10 households on average. It is unlikely that there are any sources of sample selection bias due to differences of the communities. To check this we compare the samples in table 1 and do not find any significant differences between them with respect to the individual characteristics used in this analysis.

Bian and Li (2012) describe measures taken to ensure the quality of the sample. Over-sampling is done to account for missing households. Lack of information on migrant population is mitigated with a street-mapping strategy that makes it possible to randomly select residences based on a map instead of relying on official data. In this way, migrants should be correctly represented. Furthermore, lists of registered and unregistered households in communities are collected and respondents are chosen in proportion.

3.2 Corruption indicators

We consider two measures of corruption to assess the perceived level of corruption and attitudes toward it in China. First, we have a question based on the perception of corruption:

To what extent, do you agree or disagree with the following statement: “To get all the way to the top in China today, you have to be corrupt.”

The possible answers are “strongly disagree” (1), “disagree” (2), “neither agree nor disagree” (3), “agree” (4), and “strongly agree” (5). We build the ordered categorical variable *Perception* which can take the values from one to five with greater values are associated with higher perception of corruption.

We further use this survey question to create the dummy variable *High Perception*. It is equal to one if the respondent answers “agree” or “strongly agree,” and zero otherwise.

Second, we use a question reflecting the attitude toward corruption:

Everyone seeks advantages through relationships (back-door) (e.g. when looking for a job). Do you agree that seeking advantages through relationships is against fair rules?

Possible answers are “strongly disagree” (1), “disagree” (2), “neither agree nor disagree” (3), “agree” (4), and “strongly agree” (5). This indicates that choosing a higher category means agreeing that using the *guanxi* to seek advantages is against fair rules, i.e. respondent has a more negative attitude toward corruption. We construct the ordered categorical variable *Negative Attitude*,

which takes the values from one to five with greater values, associated with more negative attitude.

In addition, we define the dummy variable *Strong Negative Attitude*. It is equal to one if the respondent agrees or strongly agrees with the question reflecting the respondent's attitude toward corruption.

Table 1 displays the main statistics for the corruption indicators.

3.3 Determinants of corruption

As the aim of this study is to examine the determinants of corruption in China, we consider a set of explaining variables at the individual and the provincial levels. The choice of these variables is based on former empirical literature on the determinants of corruption. When choosing the explanatory variables we also check the correlation among them and make sure it is not too high.

Income is measured with the log of self-reported total family income from last year (*Income*). *Social class* provides additional information on the respondent's own assessment of his or her economic status. It is defined as the answer to the question:

“To which social class do you think you belong?”

Answers can range from 1 (low) to 6 (upper).

Age is defined as the age of the respondent in years. Education (*Education*) is indicated by a dummy variable that is equal to one if the respondent has secondary or higher level of education. For gender, we include a dummy variable equal to one if the individual is a female (*Female*). Marital situation is measured with a dummy variable equal to one if the respondent is married or living together with a partner (*Married*).

Work status is considered with the dummy variable *Working*, and is equal to one if the respondent has a permanent job. The wealth of the respondent is accounted for by house ownership with a dummy variable equal to one if the respondent owns his or her own house or apartment, and zero otherwise (*House*). Finally, since health can also influence perceptions and attitudes, it is measured with a variable based on the self-assessment of the respondent ranging from 1 (very unhealthy) to 5 (very healthy).

Moreover, we consider two individual-level variables specific to China. First, there are strong differences between rural and urban areas in China that should be taken into account. Cabelkova and Hanousek (2004) argue that perception of corruption should be higher in large cities. As centers of administrative and political life, holders of high bureaucratic positions are more likely to live in large cities and political corruption is likely higher.

We account for where the respondent lives by considering hukou status. In principle, the hukou system in China restricts internal migration by excluding people from social services when they live outside their assigned region.³ We include *Rural hukou* defined as a dummy variable that indicates whether a respondent has the rural hukou status or not. The original question about the hukou in the survey is:

“*What is the status of your hukou?*”

Possible answers are “direct controlled city hukou” (1), “provincial capital city hukou” (2), “prefecture level city hukou” (3), “county level city hukou” (4), “community or self-raised hukou” (5), “rural hukou” (6), army hukou (7), and “other” (8). We reduce the answers to two categories by coding 1 for those with rural hukou status, and 0 for all the other categories.

Second, we account for the fact that the respondent is a member of the CPC with a dummy variable equal to one if the respondent is member and zero else (*CPC member*). According to Anderson and Tverdova (2003), support of the regime attenuates the negative impact of corruption on government trust. Additionally, CPC membership can also be related to political opinions. Smyth and Qian (2009), for example, show a positive association between perception of corruption and left-wing beliefs in China.

At the provincial level, we consider three explaining variables that account for the economic characteristics of provinces. We are rather restricted when choosing the set of provincial-level variables since many of them are highly correlated. The variables considered in the estimations are the ones that have been used in the related literature as well. Provincial-level variables are available for all 28 provinces and province-level municipalities and come from the *Chinese Statistical Yearbook* (CSY), which is published by the National Bureau of Statistics of China (NBSC, 2015). We use the 2008 CSY. It contains data collected in 2007, and the provincial characteristics from 2007 are the most relevant to those influencing respondents at the time of the survey.

We account for income of the province by including the Gross Regional Product (*GRP*). A larger provincial economy indicates increased opportunities for corruption. We also consider the openness of the province with the ratio of international imports and exports per capita (*Trade pc.*). Trade has been shown to be associated with corruption. Presence of foreign companies can create pressure for local officials to reduce corruption. Furthermore, Ades and Di Tella (1999) argue that increased competition reduces the rents enjoyed by the domestic firms, thereby reducing the rewards from corruption.

³ See Song (2014) for developments on the hukou system in China.

Finally, we account for the size of the mining sector by including the share of total workers in the mining sector (*Miners*). Dong and Torgler (2013) use this variable as a proxy for natural resource abundance in Chinese provinces. We follow their approach since natural resource abundance is assumed to increase corruption.⁴

Table 2 provides the descriptive statistics for all independent variables.

3.4 Methodology

As the two corruption indicators we employ in our analysis are ordered categorical variables, an ordered logit model is the appropriate econometric method. The dependent variables on perception and attitude toward corruption both have values ranging between 1 and 5, the highest values indicating higher perception and more negative attitude toward corruption. The advantage of an ordered logit model is that we obtain more accurate results using all the variations provided by the data. However, the model requires additional assumptions, so we also provide logit regressions for robustness.

In ordered logit regression, each discrete outcome category is associated with a certain threshold of a continuous latent outcome variable. The thresholds are defined by estimated cut-off points. If adjacent cut-off points are too close, there is a risk that they are not statistically significant from each other. We use a Wald test for each specification of our ordered logit model to verify that every pair of cut-off points are strongly statistically different from each other.

In addition to the ordered logit, we estimate a logit model for two reasons. First, the differences between responses might be weaker in the mind of the respondents than what the survey suggests and can differ across respondents. The argument here is “strongly agree” and “agree” may indicate quite similar responses in practice. Therefore, it seems appropriate to gather close responses into a single category. Second, the logit model provides a natural test for the sensitivity of the results.

For both models, we consider three specifications to check the robustness of our findings. The first specification only includes the individual-level variables. The second specification adds province fixed effects to the set of individual-level variables. The third specification adds the province-level variables to the set of individual-level variables.

⁴ We have missing data for the *Miners* variable for the Shanghai province in CSY 2008, so we take the value from CSY 2009.

4 Results

This section presents our results on the determinants of corruption in China. We first explain perception of corruption before analyzing attitude toward corruption.

4.1 Explaining perception of corruption

We present the estimations to explain the perception of corruption in Table 3. It is immediately evident that the results for the determinants are quite robust across all specifications. The choice of ordered logit model or the logit model does not influence the results and the inclusion of provincial variables and fixed effects has no impact on the findings for the individual variables.

We observe that income, employment, or owning a house or apartment exert no impact on the perception of corruption. At the same time, having a self-reported upper social class reduces the perception of corruption. The combination of these findings suggests that the sole significant indicator associated with material situation of the respondent involves how a person identifies with his or her social class.

When considering the result from the lower-class perspective, this might be interpreted as the perception of frustration. In the case of the upper-class perspective, a lower perception of corruption means that these people do not agree that to get to the top i.e. to reach their position, one has to be corrupt and so it can be interpreted as a moral justification. In any case, the greater perception of corruption for respondents with lower social class is valuable information for the authorities as it signals that they must fight corruption to reduce the potential for social unrest.

We do not observe gender, age, marital status, or health to be associated with perception of corruption. However, education has a significant negative effect on the level of perceived corruption. This finding comports with Melgar, Rossi, and Smith (2010), who get a similar result in a cross-country context. They hypothesize that educated people have more information about corruption and better capabilities to process it.

Interestingly, both China-specific individual characteristics have significant coefficients. Being a member of the Communist Party of China reduces the perception of corruption. This finding is in line with Zhu, Lu and Shi (2013), who further find that CPC members perceive less corruption. This may seem counter-intuitive, but can be explained in several ways. An optimistic interpretation might be that party members are raised in environments where corruption is less prevalent due to the huge sanctions associated with corruption cases. A darker view might be that party members use a loose definition of corruption, so what appears to be a corrupt act to most people might have some underlying justification in their view.

Rural hukou status is negatively related to perception of corruption. It means that the perception of corruption is lower in rural areas. It confirms the view that urban areas are associated with greater corruption in line with Cabelkova and Hanousek (2004). This finding is the first indicator in our analysis that geographic differences can exist in the perception of corruption across China.

This latter remark is confirmed with the finding that GRP is negatively associated with perception of corruption. Thus, a larger provincial economy does not enhance perception of corruption. This finding is of interest since it contradicts Donchew and Ujhelyi (2014). Their study, however, is based on cross-country data different from our setting. In China, it is quite plausible that information about corruption cases spreads quickly among provinces.

The estimated coefficients for the other two provincial-level variables are not significant. The notion that more trade in a province increases perceived corruption is not confirmed as the coefficient for *Trade pc.* is negative and not significant.

We observe positive but not significant coefficient for *Miners*. Since this variable is an indicator for natural resource abundance, this finding, if significant, would have been in line with our expectation as such abundance has been shown to enhance corruption (Dong and Torgler, 2013).

To examine magnitude of the determinants and compare them with each other, we compute the marginal effects. We only show them for the logit model because this way the presentation is more intuitive and the results of ologit and logit models are similar. They are reported in Table 4. In case of dummy variables, the marginal effects are based on a change of one category on average, and for other variables the marginal effects are based on a change of one standard deviation on average. We discuss only the variables for which estimated coefficients were significant in our main estimations.

Among individual variables, we observe that the marginal effects do not change much across the different specifications. Both China-specific individual characteristics have very high economic significance. Membership in the Communist Party of China decreases the probability of having high perception of corruption by 7.1 to 8.1 points on average, while having a rural hukou status reduces this probability by 5.4 to 5.8 points on average. Education matters to a higher degree than social class.

For the provincial GRP, the economic significance is also high in line with the existence of large regional differences. An increase of *GRP* by one standard deviation decreases the probability of high perception of corruption by 4.4 percentage points.

4.2 Explaining a negative attitude toward corruption

Having examined the determinants of the perception of corruption, we turn our analysis to factors explaining attitude to corruption. This attitude does not necessarily correspond to the same determinants since it can be influenced by personal views even more than the perception of corruption.

We display the regressions explaining attitude toward corruption in Table 5. As explained above, we analyze the degree to which respondents have negative attitude toward corruption.

We again point out the robustness of the results across specifications with the same significant variables for both the ordered logit model and the logit model.

Income, employment, and owning a house or apartment are not significant. From the variables indicating respondent's economic standing, only the estimated coefficient for self-reported social class is significant. It is negatively associated with attitude toward corruption, i.e. upper-class individuals tend to reject corruption less. This result is striking, given that lower-class individuals, i.e. those more likely be on the receiving end of corrupt acts, are more likely to perceive corruption. To sum it up, respondents from lower classes perceive more corruption and reject it more than respondents claiming to be from the upper classes. There seems to be a great divide in the views of Chinese individuals on corruption based on their social class. Again, officials should be aware of this as it could be a driving force of social unrest.

As stressed by the positive coefficient of *Education* and *Age*, educated and older people have more negative attitudes toward corruption. These results are in line with the findings of Torgler and Valev (2010), who find that higher age is associated with lower tolerance for corruption in their study on Western Europe. As with perception of corruption, we find no effects from gender, health, or marital status.

Again, membership in the Communist Party of China influences the attitude toward corruption by increasing tolerance of corruption, which is shown by the significantly positive coefficient of *CPC member*. In other words, membership in the party tends to reduce corruption perception and strengthen the urge to deny or overlook corruption.

We observe vast geographic differences for the attitude toward corruption also, but not as pronounced as with perception of corruption. We find no significant influence of rural hukou status, meaning that there is no significant difference for attitude toward corruption between rural and urban areas. In addition, provincial variable *Miners*, is not significant.

Respondents in provinces with large economies tend to have a more negative attitude toward corruption, as shown by the positive but only marginally significant coefficient for *GRP*.

Finally, respondents from provinces with more trade are less likely to have negative attitude toward corruption. Interestingly, this suggests that openness of a provincial economy promotes greater tolerance of corruption.

The marginal effects for negative attitude toward corruption are presented in Table 6. Among individual variables, we observe that the marginal effects do not change much across specifications. We find that CPC membership is again the individual characteristic with the highest economic significance. Party membership increases the probability of having negative attitude toward corruption by 8.4 to 9.6 percentage points on average.

Having secondary or higher education has the second highest marginal effect of the individual variables. It increases the probability of having negative attitude toward corruption by 3.8 to 6.2 percentage points. Furthermore, increasing age or social class by one standard deviation has marginal effects of 0.7 to 1.4 and -1.8 to -2.4 , respectively.

We again observe high marginal effects for provincial variables. An increase of trade per capita by one standard deviation reduces the probability of having a negative attitude toward corruption by 4.4 percentage points, while the same increase enhances this probability by 2.0 for *GRP*.

5 Conclusion

In this paper, we provide new evidence on the determinants of corruption in China. Using a survey of 6,000 households from 28 provinces, we consider what shapes perceptions of corruption and attitudes toward corruption.

We obtain several findings on the influence of individual characteristics. First, social class is determinative of how corruption is perceived. Respondents who identified themselves as from the lower classes perceived more corruption and were less tolerant of corruption than respondents identifying themselves as upper class. In other words, social class marks a divide in the views of Chinese individuals on corruption. At the same time, all other indicators for material situation were not significant. Second, members of the Communist Party of China had a reduced perception of corruption and more likely to deny or overlook corruption. Third, rural *hukou* status was negatively related to perception of corruption, but not significantly associated with attitude toward corruption. Fourth, education has a negative impact on the perception of corruption and heightens negative attitudes toward corruption.

When considering provincial variables, we observe that the larger the provincial economy, the lower the perception of corruption and the stronger the negative attitude toward corruption, while trade openness diminishes negative attitude toward corruption.

These findings provide important policy implications. Perception of corruption differs with the location, which suggests cross-provincial differences in corruption. Attitudes toward corruption are influenced by individual characteristics, notably education and social class. Better education could lead to stronger rejection of corruption, while lower social classes may hold stronger negative attitudes toward corruption. This finding provides officials seeking to stave off social unrest and preserve social stability with yet another reason to make serious efforts at fighting corruption.

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Tables

Table 1 Descriptive statistics and description of the dependent variables

Corruption Perception (Variables: <i>Perception</i> and <i>High Perception</i>)			
<i>To get all the way to the top in China today, you have to be corrupt. Do you agree?</i>			
Answer	%	Answer	%
1) Strongly disagree	9	0) Disagree / neutral	67
2) Disagree	38		
3) Neutral	21		
4) Agree	27	1) Agree	33
5) Strongly agree	5		
Observations	2,938	Observations	2,938

Negative Attitude (Variables: <i>Negative Attitude</i> and <i>Strong Negative Attitude</i>)			
<i>Seeking advantages through relationships (back-door) is against fair rules. Do you agree?</i>			
Answer	%	Answer	%
1) Strongly disagree	4	0) Disagree / neutral	51
2) Disagree	30		
3) Neutral	17		
4) Agree	37	1) Agree	49
5) Strongly agree	12		
Observations	5,829	Observations	5,829

Table 2 Descriptive statistics and description for independent variables
(subsamples used for corruption perception in parentheses)

Variable	Description	min.	max.	mean	s.d.	obs.
<i>Individual-level variables</i>						
Age	Age of respondent.	18 (18)	98 (98)	43.21 (43.04)	14.10 (14.14)	6000 (3010)
Female	Indicates respondent is female	0 (0)	1 (1)	0.52 (0.52)	0.50 (0.50)	6000 (3010)
Education	Indicates respondent has a secondary-level or higher educational degree	0 (0)	1 (1)	0.22 (0.22)	0.41 (0.41)	5988 (3005)
Married	Indicates respondent is married or living together with a partner	0 (0)	1 (1)	0.83 (0.84)	0.37 (0.37)	5997 (3009)
Health	Health level of the respondent, (1= low, 5= high)	1 (1)	5 (5)	3.68 (3.67)	1.04 (1.04)	6000 (3010)
Income	Total family income last year, (used in log)	0 (0)	2,000,000 (2,000,000)	30,649 (30,875)	55,726 (65,289)	5,653 (2850)
Social class	Indicates social class of the respondent, (1=low, 6=high)	1 (1)	6 (6)	2.65 (2.63)	1.21 (1.21)	6000 (3010)
House	Indicates respondent owns own house or apartment	0 (0)	1 (1)	0.81 (0.81)	0.39 (0.39)	6000 (3010)
Working	Indicates respondent has a permanent job	0 (0)	1 (1)	0.66 (0.66)	0.48 (0.48)	6000 (3010)
Rural hukou	Indicates respondent has a rural household registration status	0 (0)	1 (1)	0.43 (0.43)	0.50 (0.50)	6000 (3010)
CPC member	Indicates respondent is a member of CPC	0 (0)	1 (1)	0.11 (0.11)	0.32 (0.31)	6000 (3010)
<i>Provincial-level variables</i>						
GRP	Gross regional product (100 billion yuan)	0.89	31.11	9.76	7.49	28
Trade pc.	Imports + exports per capita (USD 1,000)	0.06	15.22	2.08	3.75	28
Miners	Share of workers in mining sector (%)	0.00	18.96	5.04	3.97	28

Table 3 Explaining perception of corruption

Specification	<i>Individual level variables only</i>		<i>Individual level variables with province fixed effects</i>		<i>Individual and provincial level variables</i>	
	<i>Ologit</i>	<i>Logit</i>	<i>Ologit</i>	<i>Logit</i>	<i>Ologit</i>	<i>Logit</i>
Dependent variable	<i>Perception</i>	<i>High perception</i>	<i>Perception</i>	<i>High perception</i>	<i>Perception</i>	<i>High perception</i>
Estimation number	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Age	-0.004	-0.002	-0.003	-0.000	-0.001	0.000
	[0.003]	[0.004]	[0.003]	[0.004]	[0.003]	[0.004]
Female	-0.110	-0.109	-0.102	-0.123	-0.103	-0.104
	[0.075]	[0.086]	[0.079]	[0.097]	[0.075]	[0.087]
Education	-0.264**	-0.402***	-0.336***	-0.493***	-0.312***	-0.448***
	[0.113]	[0.131]	[0.119]	[0.128]	[0.109]	[0.124]
Married	0.009	-0.019	-0.093	-0.098	-0.038	-0.059
	[0.121]	[0.131]	[0.127]	[0.145]	[0.137]	[0.143]
Health	-0.076	-0.076	-0.034	-0.042	-0.048	-0.047
	[0.053]	[0.054]	[0.043]	[0.048]	[0.051]	[0.052]
Income (log)	-0.071	-0.031	0.010	0.045	0.030	0.068
	[0.068]	[0.071]	[0.052]	[0.062]	[0.056]	[0.066]
Social class	-0.086*	-0.078	-0.126***	-0.102**	-0.090**	-0.080
	[0.048]	[0.053]	[0.040]	[0.047]	[0.044]	[0.050]
House	-0.038	-0.087	0.010	-0.036	-0.044	-0.094
	[0.221]	[0.204]	[0.147]	[0.144]	[0.200]	[0.182]
Working	-0.029	0.005	-0.049	-0.018	-0.022	0.014
	[0.083]	[0.097]	[0.083]	[0.100]	[0.080]	[0.093]
Rural hukou	-0.351***	-0.266***	-0.374***	-0.266**	-0.356***	-0.257**
	[0.095]	[0.099]	[0.109]	[0.112]	[0.105]	[0.105]
CPC member	-0.311**	-0.352***	-0.302**	-0.364***	-0.342**	-0.396***
	[0.129]	[0.116]	[0.137]	[0.124]	[0.134]	[0.121]
GRP					-0.021**	-0.025*
					[0.009]	[0.013]
Trade pc.					-0.013	-0.013
					[0.026]	[0.029]
Miners					0.035	0.028
					[0.032]	[0.029]
Observations	2,771	2,771	2,771	2,771	2,771	2,771
Pseudo R-squared	0.00704	0.0120	0.0404	0.0648	0.0139	0.0234

Estimated coefficients for ordered logit and logit models with Perception and High Perception as the dependent variables. We use specifications with individual variables, individual variables with province fixed effects, and individual and provincial variables. Robust standard errors are in brackets. *, **, and *** denote an estimate significantly different from 0 at the 10%, 5%, and 1% levels, respectively.

Variable definitions are provided in Tables 1 and 2.

Table 4 Explaining perception of corruption: marginal effects

Specification	<i>Individual level variables only</i>	<i>Individual level variables with province fixed effects</i>	<i>Individual and provincial level variables</i>
Model	<i>Logit</i>		
Dependent variable	<i>High Perception</i>		
Age	-0.6	0.0	0.0
Female (1)	-2.4	-2.5	-2.2
Education (1)	-8.4	-9.6	-9.2
Married (1)	-0.4	-2.0	-1.3
Health	-1.7	-0.9	-1.1
Income (log)	-0.7	0.9	1.5
Social class	-2.1	-2.5	-2.1
House (1)	-1.9	-0.7	-2.0
Working (1)	0.1	-0.4	0.3
Rural hukou (1)	-5.8	-5.4	-5.5
CPC member (1)	-7.3	-7.1	-8.1
GRP			-4.4
Trade pc.			-1.0
Miners			2.1

Marginal effects for the logit model reported in Table 3. The dependent variable is the dummy variable Strong Perception. We use specifications with individual variables, individual variables with province fixed effects, and individual and provincial variables. For dummy variables, the marginal effects are based on change of one category (1). For other variables, the marginal effects are based on a change of one standard deviation. Definitions of variables are provided in Tables 1 and 2.

Table 5 Explaining negative attitude toward corruption

Specification	<i>Individual level variables only</i>		<i>Individual level variables with province fixed effects</i>		<i>Individual and provincial level variables</i>	
	<i>Ologit</i>	<i>Logit</i>	<i>Ologit</i>	<i>Logit</i>	<i>Ologit</i>	<i>Logit</i>
Dependent variable	<i>Negative attitude</i>	<i>Strong negative attitude</i>	<i>Negative attitude</i>	<i>Strong negative attitude</i>	<i>Negative attitude</i>	<i>Strong negative attitude</i>
Estimation number	1	2	3	4	5	6
Age	0.006**	0.004	0.003	0.002	0.006**	0.004
	[0.003]	[0.003]	[0.003]	[0.003]	[0.002]	[0.003]
Female	0.034	0.019	0.018	-0.004	0.030	0.015
	[0.074]	[0.085]	[0.071]	[0.087]	[0.073]	[0.084]
Education	0.245**	0.224*	0.175	0.161	0.275**	0.253**
	[0.124]	[0.119]	[0.112]	[0.109]	[0.123]	[0.117]
Married	0.039	0.069	0.029	0.068	0.028	0.057
	[0.083]	[0.080]	[0.073]	[0.065]	[0.082]	[0.079]
Health	0.038	0.004	0.006	-0.022	0.023	-0.005
	[0.046]	[0.049]	[0.046]	[0.050]	[0.048]	[0.052]
Income (log)	-0.063	-0.026	-0.022	0.029	-0.047	-0.006
	[0.067]	[0.079]	[0.047]	[0.063]	[0.061]	[0.071]
Social class	-0.059***	-0.076***	-0.055**	-0.064**	-0.064***	-0.080***
	[0.022]	[0.026]	[0.022]	[0.027]	[0.021]	[0.027]
House	-0.090	-0.084	-0.110	-0.138	-0.114	-0.110
	[0.078]	[0.090]	[0.076]	[0.089]	[0.084]	[0.094]
Working	-0.029	-0.059	-0.037	-0.074	-0.034	-0.068
	[0.051]	[0.060]	[0.051]	[0.062]	[0.050]	[0.061]
Rural hukou	0.024	0.075	-0.004	0.020	-0.007	0.049
	[0.082]	[0.092]	[0.078]	[0.093]	[0.082]	[0.092]
CPC member	0.324***	0.388***	0.304***	0.357***	0.318***	0.381***
	[0.089]	[0.097]	[0.092]	[0.103]	[0.089]	[0.095]
GRP					0.014*	0.010
					[0.008]	[0.009]
Trade pc.					-0.043**	-0.049**
					[0.020]	[0.020]
Miners					-0.006	-0.017
					[0.026]	[0.030]
Observations	5,466	5,466	5,466	5,466	5,466	5,466
Pseudo R-squared	0.00355	0.00645	0.0228	0.0456	0.00578	0.0101

Estimated coefficients for ordered logit and logit models with Negative Attitude and Strong Negative Attitude as the dependent variables. We use specifications with individual variables, individual variables with province fixed effects, and individual and provincial variables. Robust standard errors are in brackets. *, **, and *** denote an estimate significantly different from 0 at the 10%, 5%, and 1% levels, respectively. Definitions of variables are provided in Tables 1 and 2.

Table 6 Explaining negative attitude toward corruption: marginal effects

Specification	<i>Individual level variables only</i>	<i>Individual level variables with province fixed effects</i>	<i>Individual and provincial level variables</i>
Model	<i>Logit</i>		
Dependent variable	<i>Strong Negative Attitude</i>		
Age	1.4	0.7	1.4
Female (1)	0.5	-0.1	0.4
Education (1)	5.5	3.8	6.2
Married (1)	1.7	1.6	1.4
Health	0.1	-0.5	-0.1
Income (log)	-0.6	0.7	-0.2
Social class	-2.3	-1.8	-2.4
House (1)	-2.1	-3.2	-2.7
Working (1)	-1.5	-1.7	-1.7
Rural hukou (1)	1.9	0.5	1.2
CPC member (1)	9.6	8.4	9.4
GRP			2.0
Trade pc.			-4.4
Miners			-1.5

Marginal effects for the logit model reported in Table 5. The dependent variable is the dummy variable Strong Negative Attitude. We use specifications with individual variables, individual variables with province fixed effects, and individual and provincial variables. For dummy variables, the marginal effects are based on change of one category (1). For other variables, the marginal effects are based on a change of one standard deviation. Definitions of variables are provided in Tables 1 and 2.

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