

**Responses to the Anonymous Comments**  
**“Does Corruption Matter for the Environment? Panel Evidence from China**

**Changes from the original version are written in red.**

The topic of this paper is interesting and I was attracted by the title of this paper. However, I feel disappointed after reading it. The main weakness of this manuscript:

1. This paper is loosely written without citing rigorous literature evidence or information source. This can NOT be accepted for professional academic writing.

Examples:

**P1 “The World Bank estimates that the direct cost of air pollution - such as acid-rain damage to crops, medical bills and job-loss from illness - ranges between 8 percent and 12 percent of China’s GDP annually .” There is no citation source!**

The citation has been added (p 3, line 10).

**P3: "The findings from these studies generally show that there is the ambiguous evidence in favor of the EKC for China, and strong evidence that China’s growth in energy consumption indeed causes environmental degradation. " Please cite the studies!**

The relevant studies have been added as follows: *“The findings from these studies generally show that there is the ambiguous evidence in favor of the EKC for China – e.g., Baek et al. (2009) and Baek and Koo (2009) for no evidence of the EKC, and Jalil and Mahmud (2009), Song et al. (2008) and Li et al. (2016) for evidence of the EKC, and strong evidence that China’s growth in energy consumption indeed causes environmental degradation (e.g., Song et al., 2008; Govindaraju and Tang, 2013; Qu and Yan, 2014; Li et al, 2016) (p. 4, 2<sup>nd</sup> paragraph).”*

**This manuscript should be written rigorously with sufficient and specific literature and evidence.**

As suggested, in the revised manuscript more discussion on the economic literature on corruption has been added as follows: *“Examples include, but are not limited to, Lopez and Mitra (2000), Damania et al. (2003), Fredriksson et al. (2003), Fredriksson and Svensson (2003), Welsch (2004), He et al. (2007), Cole (2007), Woods (2008) and Leitao (2010). Damania et al. (2003), for example, examine the corruption-environment nexus in a panel data of developing and developed countries, and find that corruption indeed reduces environmental policy stringency. He et al. (2007) employ cross-country data and confirm the findings of Damania et al. (2003) in that a higher level of corruption always reduces the quality of environmental regulation. Woods (2008) reports that political corruption serves to systematically weaken state environmental programs in the United States. However, attention of most studies has been on*

*cross-country data when investigating the corruption-environment nexus. Thus, the existing literature does not directly address the issue in China. This observation has motivated us to conduct this line of research (p. 5, last paragraph; pp. 14-17)"*

2. The methodology is not rigorous.

**On "2.1 The model to be estimated", "we extend the so-called standard model of the income-energy-environment nexus to include a measure of corruption. " Why this model is justified? There could many other omitted variables..... The dataset is on provincial, but the test model does not control for many other provincial characteristics.**

More justification on our model has been added as follows: *"In examining factors affecting a country's environment, researchers generally rely on the so-called standard model of the income-energy-environment nexus (e.g., Iwata et al., 2010; Baek and Kim, 2013; Baek, 2015). For the empirical model adopted here, we extend the income-energy-environment nexus to include a measure of corruption (p. 6, last paragraph)".* It should be admitted that, since we use China's provincial data in estimating Eq. (1), it would be more desirable to control for many other provincial characteristics in the model. Unfortunately, however, the lack of data availability at the provincial level prevents us from considering more control variables in Eq. (1) (p. 7, endnote [2]).

**"The number of anti-corrupt cases is used as a measure of the degree of corruptibility" How did the authors collect and count the numbers of corruption? This is not clear in the paper. Also, the statistics of the corruption cases reported may be seriously biased due to political reasons.**

First of all, the data on anti-corrupt cases are collected from China's Statistical Yearbooks (p. 9, line 1). Second, we understand that the statistics of the corruption cases reported by the Chinese government is likely to be politically biased. However, the anti-corruption case could be the most relevant proxy for corruption currently available at the provincial level in China and hence we have attempted to justify the use of the anti-corruption case in the revised manuscript as follows: *"The Chinese government has been making great efforts to combat corruption and to build a clean government using the following four measures over the past decades. The first measure is to select officials on the basis of democratic, open, competition, and preferred standards in order to prevent corrupted officials from being selected. The second measure is to establish a sound law system and regulations against corruption. The third measure is to put the power under the control by institutional innovation. The last is to build up a monitoring system including Chinese Communist Party inner-party supervision, supervision of the National People's Congress, democratic supervision of Chinese People's Political Consultative Conference, government supervision, judicial supervision, civil supervision and supervision by public opinion. Thus, anti-corruption cases should be relevant in using a proxy for corruption. Some scholars (e.g., Damania et al., 2003; Cole, 2007) use governmental honesty taken from the International Country Risk Guide (ICGR) as a proxy for corruption in their models. At the sub-national level, however, the data are not available (p. 8, endnote [3])."*

**On P5 “ Given that numerous studies commonly show the crucial role of income plays in influencing environmental outcomes, it would be proper to directly test the Environmental Kuznets Curve (EKC) hypothesis into our modeling. “ Please cite the representative ones of "numerous studies"**

The representative studies have been added (p. 7, 2<sup>nd</sup> paragraph).

**3. There is no descriptive statistics. Table 1 starts to report the results.**

Descriptive statistics have been added in Table 1 (p. 18, Table 1).

We truly appreciate your constructive suggestions and comments.