## **Comments for Reviewer 1**

Thank you for your comments. They have helped us improve the quality of the paper.

1. Introduction is not so motivated. It could be improved if the topic is linked to the characteristics of Asian countries and the papers recently published. Also, research questions are not clear; importance of questions not documented well; and not explained how this study is different from other studies. Overall, the paper needs to be motivated further. The current version of the introduction is just a summary of existing literature.

The general research question is "what is the impact of corruption on income inequality". We have **accommodated** your comments in the revised version. Please see the more detail in revised version.

## Paragraph 7:

In general, the proponents of GWH state that corruption can improve the economy under conditions of poor governance (Please see more detail in Huntington (1968), Leff (1964), Leys (1965), Lui (1985), and Dreher dan Gassebner (2013)). However, in conditions of good governance, corruption has a negative impact on the economy. Therefore, this study on the corruption-income inequality trap in Asia is necessary because the majority of countries in the region have high levels of corruption and relatively poor governance. The data show that, in 2015, the average corruption index in Asia (45 countries) was 3.63 and the average of gini index was 32.65. This means that the majority of countries in Asia have high levels of corruption with moderate income inequality. Generally, Asian countries have poor governance with the average governance index being -0.39 in 2015 (Governance index has intervals from -2.5 up to 2.5. A higher index indicates better governance. Intervals from -2.5 up to 0 are classified as poor governance). This study identifies the corruption-inequality trap in those Asian countries that have poor governance and high corruption in an effort to examine GWH from a different perspective.

## 2. No highlight on relative contributions of the paper. The authors must implicitly explain the contributions of the paper.

In the new version, the contributions of the paper have been explained in the abstract and introduction section. The ambiguity found in studies of the impact of corruption on economic growth, namely the Grease the Wheel Hypothesis (GWH) and Sand the Wheel Hypothesis (SWH), have triggered this research to look at the impact of corruption from another perspective, i.e income inequality. The study explains the theoretical modelling of the effect of corruption on income inequality, using development of the Ramsey Growth model, which, as far as the author is aware, has not been discussed. This study concluded from the previous findings that the studies of GWH and SWH agree that corruption has a negative impact on economic development when there is good governance. Meanwhile, whether there is a negative impact when there is weak governance is still debateable. Therefore, the study identifies the issue in a sample of Asian countries that generally have relatively weak governance and high levels of corruption.

In addition, previous studies generally concluded that corruption in terms of GWH was usually identified as bribery in obtaining public services or to make it easier to obtain permission to set up a company. So, as a further identification of previous studies, this paper identifies corruption using the GWH approach to examine the impact of corruption on income inequality in particular. This paper models worker households who give bribes to bureaucrat households to make obtaining the public services easier. Using the Ramsey Growth model, this paper adds two variables, bribes and concealment costs which are then covered by Corruption and Governance variables in the empirical model.

In the new version, we accommodated your comments.

3. In Abstract, the authors refer to two hypotheses "the grease the wheel" and "sand the wheel", but we do not see any explanation of these two theories in the paper. In addition, the authors need to explain the channels through which corruption affect income inequality and/or vice versa.

Thank you for the comment. I have added the explanation of the two hypotheses (grease the wheel and sand the wheel) in the introduction. The channel through which corruption affects income inequality has been explained by the development of Ramsey Growth model. Also, how income inequality affects corruption has been explained in the discussion section. However, this study cannot explain the modelling of the effect of income inequality on corruption. This creates a suggested follow-up question for future studies. Therefore, this study has provided some summaries of previous findings about the effect of income inequality on corruption.

4. A separate section for hypothesis development needs to be added. The readers do not know what the authors attempt to do, the economic theory behind, and how this paper develop existing literature.

In the new version, we **accommodated** them. We explain more in the Modelling section (Methodology):

In identifying the effect of corruption on income inequality, this research attempts to model corruption as a bribe to obtain a public service as used in the model of Barro & Sala-i-Martin (2004) but developed by adding the bribe and law variables. The firm pays wages (*w*) for labor inputs, and pays the rental payment on the capital input (*r*). Then, the household use the income to cover their consumption (*c*). The firm is not involved in bribery, therefore the modelling of the firm is as used by Barro & Sala-i-Martin (2004). The difference of the model is only in the modelling of household. The model assumes a closed economic system, in which there is no intereconomic lending. Thus, assets per capita are equal to capital per capita (a = k).

In the case of study, the household consist of two types, worker household and bureaucratic household. Then, it is assumed that bureaucratic household receive bribes (*b*) from other households (assumed to be worker households) in order to get the public services easier. Then, each household i.e. bureaucratic household and worker household, maximizes their utility. Households use income that is not consumed to accumulate more assets. Therefore, we can identify that the flow of assets in bureaucratic households, as bribery recipients, is greater than in workers' households. Then, there is a difference in the capital growth between bureaucrat and worker households, whereby the growth of bureaucratic households' capital is higher than that of the workers' households.

5. The literature review section needs to be rearranged and edited. The current version is just a summary of previous findings and does not find any gap, and how the paper aims to fill this gap. Also, some important missing papers:

Dutta and Mishra (2013), Journal of public Economic Theory; Dobson and Rumlogan-Dobson (2010), Economics Letters; Policardo et al. (2018), Economic Analysis and Policy

In the revised version, we have provided some summaries of previous findings to help readers understand the issue. We have explained the difference and the gaps found in previous studies. This is clearly explained at the end of the literature review section. The existence of these disagreements is what lies behind this study's attempts to identify the form of causality between corruption and income inequality. Therefore, this study wants to identify this gap by modelling the effect of corruption on income inequality. Some missing papers you recommended have been added in the revised version.

6. No justification about selected explanatory variables. There are several other important variables that explain corruption/inequality, but not considered in this paper (such as proxies for culture, political stability, and financial development).

The justification about selected explanatory variables has been explained in Appendix 1. The proxies for the culture variable are ethnic, language and the religion fractionalization index as instrument variables. The Political stability variable is represented by the governance variable. The governance variable is proxied by governance index (the average of six dimensions i.e. voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, control of corruption).

7. The methodology is not well saturated. For instance, some diagnostic tests are necessary. Based on the nature of the study, some advanced econometric techniques such as simultaneous equations and panel cointegration may need to be applied to address endogeneity issue.

We chose to use Two Stage Least Square (TSLS) regression to overcome the endogeneity problem that may arise in the model. The diagnostic test was done by identifying the Wald test, the endogeneity test, the First stage F test, and the Overidentifying test. And, the result of the analysis using 2SLS shows that the instrument variables consisting of ethnicity, language and the religion fractionalization index have qualified as good instruments. They pass the diagnostic test.

8. The interpretation of results should be improved. We are interested to know for one standard deviation increase in corruption what would happen to income inequality. Also, there is no data section. We do not know how data are obtained and constructed.

Thank you for the comment. I have added the interpretation of the coeficient of regression. In this paper we use the secondary data from some sources and they can

be downloaded from websites. Please see methodology section, and Appendix 1 for the information how the data were obtained and constructed.

9. And finally, the whole paper needs to be re-written. The paper reads badly – both linguistically and economically!

In the new version, we **accommodated** them.