Confucius Institute's Effects on International Travel to China: Do Cultural Difference Or Institutional Quality Matter?

Donald Lien[a], Feng Yao[⋆b,c,d], and Fan Zhang[c]

[a]Department of Economics, University of Texas at San Antonio, TX 78249, USA; Email: Don.Lien@utsa.edu
[b]China Center for Special Economic Zone Research, Shenzhen University, Guangdong, 518060, China
[c]Department of Economics, West Virginia University, 1601 University Ave., P.O. Box 6025, Morgantown, WV 26505-6025, USA; Email: Feng.Yao@mail.wvu.edu; Voice: +1 304 293 7867; Fan.Zhang@mail.wvu.edu; Voice: +1 304 216 7370.
[d]School of Economics and Trade, Guangdong University of Foreign Studies, Guangdong 510006, China; Email: 201470006@oamail.gdufs.edu.cn; Voice: +86 20 3932 8858

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ABSTRACT
This paper uses a panel data of China's inbound tourist flows from 2005-2015 to investigate Confucius Institute (CI)'s influence on China's tourism. We find that CI, as a comprehensive platform for China's foreign cultural exchange, has a significant positive effect on China's tourist flows. The effects of CI on China's inbound tourism are transmitted through bridging cultural gaps and promoting Chinese language which reduces psychic distance and transaction costs. CI also stimulates China's inbound tourist flows via reducing information asymmetry caused by different levels of institutional quality. Interestingly, we find that the heterogeneous effects of CI on China's inbound tourism depend on institutional quality, and the effects of CI to boost China's tourists are more prominent in departure countries with larger cultural difference.

KEYWORDS
Confucius Institute, tourism, culture difference, institutional quality

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1. Introduction

The travel and tourism industry directly contributes 3.0% to world GDP and accounts for 3.6% of world employment (WTTC (2016)). It directly sustains more jobs than financial services, mining, and automotive manufacturing industries combined (WTTC (2015)). The Chinese travel and tourism industry experiences a dramatic increase during the last decade. In 2004, China attracted 16,932 thousands inbound tourists. After 11 years of rapid growth, China's inbound tourists reached 25,985 thousands by 2015, a 53.5% increase in total tourists with an annual growth rate of 4.0% on average,

⋆Corresponding author. Email: feng.yao@mail.wvu.edu

making China the third largest tourism market in the world in terms of international arrivals (CNTA (2016)). The determinants of tourist flows have been documented in recent literature (see Gil-Pareja et al. (2007a), Gil-Pareja et al. (2007b), Keum (2010), and Lien et al. (2014)), and include, among others, the geographic distance, GDP per capita, common border, and common language.

An important driving force for Chinese inbound tourism is Chinese culture. To promote the understanding of Chinese culture and language, the Office of Chinese Language Council International, also known as Hanban, established the Confucius Institute (CI) in 2004. The number of CI and its registered students increase dramatically since then. Lien et al. (2014) investigate the impact of CI on international travel to China and convincingly demonstrate that the presence of CI in the departure country increases overall tourism in general and business and worker tourists in particular.

We believe that the impact of CI on tourism flow depends further on the cultural difference between the departure country and China. On one hand, tourists are more comfortable in a similar cultural environment as in their departure country. Thus, a large cultural difference can create a large psychic distance which arises from unfamiliar surroundings, making tourists reluctant to go abroad. On the other hand, the culture difference might be the exact reason for some tourists to travel, discover and appreciate the difference. Institutional quality of departure country can also change the impact of CI on the tourists flow. One can conjecture that tourists who are accustomed to high institutional quality and economic freedom are unlikely to put themselves in danger of institutional risks by traveling to China, with a relatively low institutional quality. However, the destination country (China, in our case)'s efforts toward bridging the cultural gap, and mitigating the impact of institutional quality, and the associated potentially delicate effect on tourism are largely ignored.

We investigate the effects of CI on China's inbound tourist flows. Following the work of Lien et al. (2014), we include, in addition to important economic and geographic characteristics of the departure country, the number of CI in the departure countries to capture CI's potential positive effects generated through cultural exchanging activities. We believe that cultural difference and institutional quality are important variables or channels through which CI influences China's inbound tourism, and their profound impact cannot be simply captured by the number of CI. We fill this gap by including cultural difference and institutional quality explicitly as control variables and examining the effects of CI on China's tourism. The spillover effect of CI on Chinese trade and outward FDI has been investigated in Lien et al. (2012) and they find that additional CI establishment delivers significant boosts in both Chinese exports and outward FDI to developing country. Again, the culture difference and institutional quality impacts are ignored.

In this paper, we apply the gravity model using OLS with panel data from 2005 to 2015 to estimate the effect of CI on China's inbound tourists. We also estimate the Poisson pseudo-maximum likelihood (PPML) model proposed by Santos Silva and Tenreyro (2006) to address potential heteroskedasticity and issues arising from zero value entries. We find that the establishment of a CI in departure countries increases total, business, leisure, and workers tourism in general in both OLS and PPML models. Including interaction terms, we find sizable positive effects via interactions. We observe heterogeneous effects of CI on China's tourism which are subjected to the cultural difference and institutional quality of the departure country. Specifically with PPML estimation, without interaction terms, our results suggest one additional establishment of CI increases the total tourists to China by 1.29%, *ceteris paribus*. With interactions between CI and cultural difference, one more CI would increase

total tourists to China by 22.5% given one standard deviation of cultural difference between China and the departure country. With interactions between CI and institutional quality, one more CI would increase total tourists to China by 255% given one standard deviation of institutional quality of the departure country. For a robustness check, we estimate a partially linear model to allow for potential nonlinear interaction effects, the estimates of which confirm significant positive effects through interactions between CI and cultural difference or institutional quality.

The rest of this article is organized as following. Section 2 introduces CI and our hypotheses. Section 3 presents the model specification, describes variables and data sources. Section 4 discusses empirical results, illustrating the heterogeneous effects of CI on China's inbound tourists. Section 5 concludes.

2. Effects of CI On China's Tourism

To promote the appreciation of Chinese language and the comprehension of Chinese cultural heritages, Hanban, a subordinate branch of Chinese Ministry of Education, established CI as a non-profit public institute in 2004, which acts in a similar fashion as Germany's Goethe Institute, UK's British Council and France's Alliances Frances. With dramatic increases in the number of CI and its registered students, CI serves as a power base for cultural exchanges and language promotions between China and host countries. For example, in 2006, there are only 122 CIs and Confucius Classrooms[1] established across 46 countries with 13,000 registered students (Hanban (2007)). By 2015, 500 CIs and 1000 Confucius Classrooms are established in 135 countries with more than 1,390,000 registered students, an increase of 25.6% over 2014 student registrations (Hanban (2016)).

Confucius Institute Annual Development Report 2014 (Hanban (2015)) provides four main principles of CI — to increase the understanding of Chinese language worldwide, to promote Chinese culture and global cultural diversity, to develop international friendship and to facilitate business activities. First, CI promotes Chinese language in the departure country, which in turn, with increased literacy in Chinese, reduces transaction costs caused by communicational barriers. Egger and Lassmann (2012) and Oh et al. (2011) document significant increase on trade and FDI by sharing a common language. Thereby, we expect CI to increase business tourists to China by reducing language barriers. Second, with branded projects and various activities, CI effectively bridges cultural gaps between departure countries and China. For instance, in 2014, CI organized more than 3,900 activities and performances over 1,200 CIs and Confucius Classrooms with more than 10 million participants on the Confucius Institute's Day. Those activities can increase understanding of Chinese culture, reduce psychic distance between the departure country and China, and encourage locals to go aboard and visit China. Third, CI is more than a mere institution that promotes Chinese language and encourages cultural exchanges. It also promotes international friendships and business relations by coordinating government diplomacy and matching business partnerships. Political and business activities coordinated by CI also increases tourists to China. Thus, we believe that CI can attract more tourists to China in general.

Lien et al. (2014) document significant positive effects of CIs on tourist flows to China. However, focusing on standalone effects from CI, they ignore other channels such as cultural difference and institutional quality through which a CI can impact

[1]CIs are affiliated with universities as a department but Confucius Classrooms are incorporated into primary and secondary schools.

China's tourism. Cultural difference between the departure and destination countries can have complex impacts on tourist flows. On one hand, a large cultural difference increases psychic distance, thus decreases tourist flows. Reisinger and Turner (1997) investigate Indonesian tourists in Australia and conclude that greater cross-cultural awareness, understanding and acceptance of cultural differences are needed to attract more tourists. Wang and Xi (2016) investigate the determining factors of China's inbound tourist flow and finds that dummy variables indicating common language, common border and common religion boost tourist flow significantly. On the other hand, a large cultural difference also attracts tourist flows since the appreciation of foreignness is the exact reason for leisure tourists (See OECD (2009)). Thus, the effect of CI on China's tourist flows depend on cultural difference. Institutional quality is another factor that affects tourist flows. Balli et al. (2016) show that institutional quality is important when visitors decide the destination country. Ortega and Rodriguez (2007) find the information of the destination country important for tourists to decide where to visit. CI increases the understanding of Chinese government policies, transmits the assurance of safeness, and reduces information asymmetry caused by different levels of institutional quality. Different from Lien et al. (2014), we examine the effect of CI on China's inbound tourism, controlling the level of cultural difference and institutional quality between departure country and China. Since CI can improve tourism to China through these channels, we expect the effect of CI on China's inbound tourists to be heterogeneous.

3. Model Specification and Data Description

In the empirical investigation, we utilize the gravity model, the most successful framework for the analysis of international travel, as our benchmark model. Following Lien et al. (2014), we model the number of tourists from country i to China in year t by taking *logarithms of the gravity model*,

$$\begin{aligned} Ln(Tourist_{it}+1) =& \beta_0 + \beta_1 Ln(POP_{it}) + \beta_2 Ln(DIS_i) + \beta_3 Ln(GDP_{it}/POP_{it}) \\ &+ \beta_4 Ln(PPP_{it}) + \beta_5 INS_{it} + \beta_6 CD_i + \beta_7 CI_{it-1} \\ &+ \beta_8 Language_i + Time_t + \epsilon_{it}, \end{aligned} \tag{1}$$

where i=1,2,...n and t=1,2,...T. In Equation (1), $Tourist_{it}$ is the number of tourists flow from departure country i to China in year t. POP_{it} represents the population of country i in year t and we expect that the tourist flow is positively correlated with it. DIS_i is the distance between the capitals of the departure country i and China. The gravity model predicts a negative relationship between tourists flow and DIS_i. GDP_{it}/POP_{it} measures real GDP per capita and approximates the wealth of country i. We expect the coefficient of real GDP per capita to be positive. We include PPP_{it}, the ratio of purchasing power parity between country i and China, as a measure of price differences to avoid misspecification bias as suggested by Bergstrand (1985) and Lien et al. (2014) and we expect the coefficient of PPP conversion factor to be positive.

Coefficients of INS_{it}, CD_i, and CI_{it-1} are of particular interests. CI_{it-1} is the number of CI established in country i lagged by one year. As discussed in Lien et al. (2012), after an institute in the host country submits an initial proposal, it takes about 18 months on average for a CI to be officially functional. Thus, it is a significant amount of time to establish a CI and lagging CI by one more year can further help mitigate

the potential endogeneity, if there is any. Based upon our hypotheses, the number of CI established in country i would positively affect the number of tourists to China in general. INS_{it} represents institutional quality in country i and we expect that the level of institutional quality in county i can have different effects on different subcategory of tourists flow. For example, Philippines, with a lower level of institutional quality, has a higher level of tourists flow in the subcategory of workers and crew. Countries with relatively high institutional quality, such as United States and United Kingdom, have a higher level of tourists flow in the subcategories of business meetings and leisure tours. Institutional quality can play a very different role in these cases. Time-invariant CD_i is the cultural difference between country i and China. We expect that cultural difference would affect China's tourism in general, in a potentially delicate fashion as discussed before.

$Language_i$ is a Chinese language dummy and it is equal to 1 if country i shares a common language with China. It also approximates communication costs of traveling to China. $Time_t$ is a time dummy and captures year fixed effects. Lien et al. (2014) also include the time dummy to capture temporal changes in Chinese population and real Chinese GDP per capita. Thus, Chinese population and real Chinese GDP per capita can not be included in the model due to perfect multi-collinearity with the time dummy. We do not include country fixed effect in the benchmark regression since we have time-invariant variables such as bilateral distance, cultural difference, and Chinese language dummy. ϵ_{it} is the error term (log of the gravity model error term).

With a log-linear transformation, the expectation of log error term in the gravity model may not be zeros due to its potential dependence on the mean and variance of the error term, thus the OLS estimator of log-linear gravity model may not be consistent. To address this issue, we consider in our second model the Poisson Pseudo Maximum Likelihood (PPML) estimator proposed by Santos Silva and Tenreyro (2006), which is consistent in the presence of heteroskedasticity, avoids potential endogeneity and allows for zero values of dependent variables. Clearly, in the OLS model, we use $Ln(Tourist_{it}+1)$ as the dependent variable[2] to avoid zero value issue of tourist flows, while PPML allows the dependent variable to enter the model in level as $Tourist_{it}$ without arbitrary modification, which is desirable. Specifically, PPML estimates the following multiplicative form,

$$\begin{aligned} Tourist_{it} =& exp[\beta_0 + \beta_1 Ln(POP_{it}) + \beta_2 Ln(DIS_i) + \beta_3 Ln(GDP_{it}/POP_{it}) \\ &+ \beta_4 Ln(PPP_{it}) + \beta_5 INS_{it} + \beta_6 CD_i + \beta_7 CI_{it-1} + \beta_8 Language_i]\eta_{it}, \end{aligned} \tag{2}$$

where η_{it} is the error term in the gravity model. The PPML estimator is consistent in the presence of heteroskedasticity as long as the conditional mean is correctly specified. In this case, although the dependent variables enter in levels, the coefficients of any independent variables specified in natural logarithms can still be interpreted as simple elasticities and those of independent variables specified in levels as semi-elasticities.

We collect China's inbound tourists panel data from 2005 to 2015 as our base sample. After eliminating countries with missing data in cultural difference or institutional quality, our final dataset consists of 319 observations in a balanced panel of 29 countries spanning from 2005 to 2015. So $n = 29$ and $T = 11$. A complete list of countries is provided in Table 1[3].

[2]We have zero value issue for the tourist subcategory *Friends and family tourists to China.*

[3]China National Tourism Administration releases annual tourist statistics comprised of 33 countries since 2005. We excluded North Korea, Mongolia, Kazakhstan, and Kyrgyzstan due to missing values in cultural differences.

We use China's total inbound tourist flows and its five subcategories by purpose (Business, Leisure, Friends and Family, Workers, and Other) as our six dependent variables. The number of inbound tourists by country and purpose are retrieved from the website of China National Tourism Administration (http://www.cnta.gov.cn/).

The data for population (POP_{it}), real GDP per capita (GDP_{it}/POP_{it}), and purchasing power parity conversion factor (PPP_{it}) are obtained from the World Development Indicator 2016 (WDI (2016)). The bilateral distance between country i and China as well as the Chinese language dummy are collected from the Centre d'tudes Prospectives et d'Informations Internationales ($CEPII$) database (See Mayer and Zignago (2011)).

The number of CI (CI_{it-1}) comes from the annual report of Hanban. CI promotes Chinese Language, encourages cultural exchange and improves international cooperation, so we expect that the number of CI has a positive effect on Chinas inbound tourists.

Cultural difference (CD_i) influences communication and identification of country i toward China. We consider cultural difference a primary factor which affects national recognition. We calculate cultural difference based on Kogut and Singh (1988),

$$CD_i = \sum_{k=1}^{4} [(I_{ki} - I_{kc})^2 / V_k]/4, \tag{3}$$

where I_{ki} represents the k_{th} cultural dimension value for country i, I_{kc} stands for the k_{th} cultural dimension value for China and V_k represents the variance of the k_{th} cultural dimension values across all countries. The data comes from the Geert-Hofstede website (http://geert-hofstede.com). The four cultural dimensions[4] include Power Distance, Individualism versus Collectivism, Masculinity versus Femininity and Uncertainty Avoidance. Larger values in CD indicate greater cultural difference between country i and China. For example, in our sample, the largest cultural difference is observed in Sweden with a CD level of 4.1466 while the smallest cultural difference is exhibited in Philippines with a CD value of 0.2391.

We use the index of economic freedom published by the Heritage Foundation as the institutional quality (INS_{it}). This index covers a total of 10 variables, including Business Freedom, Trade Freedom, Monetary Freedom, Government Size and Spending, Fiscal Freedom, Property Rights, Investment Freedom, Financial Freedom, Freedom from Corruption, and Labor Freedom. Since the economic fluidity and institutional adaptation a society can possess is highly correlated with economic freedom, we use this index to approximate institutional quality, and higher index value indicates better institutional quality. In our dataset, Singapore has the highest institutional quality with a value of 89.4, while Russia exhibits the lowest institutional quality with a value of 49.8. China has a relatively low institutional quality of 52.7.

The summary statistics for our data are provided in Table 2. We observe that the number of inbound tourists varies significantly across countries. Among the five subcategories, the number of leisure tourists has the largest share while friends and family tourists has the smallest. The median of CI is 2 while the mean is around 6.38. As of 2014, the United States has the largest number of CI, 106 in total, while Nepal,

[4]The Hofstede center introduced two extra dimensions in the measurement of cultural difference, long term orientation and Indulgence. We stick to Kogut and Singh (1988) and only use original four dimensions in the calculation of cultural difference since we have missing data for Nepal and Sri Lanka in the additional two dimensions.

Norway, and Singapore only have one CI established. In our application, we use the number of CI lagging one period as independent variable, thus we actually use the data for CI from 2004 to 2014, different from the period, 2005 - 2015, of other variables. Since 2004 is the first year CI launched, majority of observations for CI in 2004 are zeros, except for South Korea and United States. In Table 2, real GDP per capita, population, relative purchasing power parity conversion factor, and bilateral distance are presented in natural logarithms while the other variables are in levels.

4. Estimation Results

Table 3 presents the pooled OLS estimation results as in model (1) with year-fixed effects for total tourists flow and its five subcategories. Our benchmark model explains around 76%[5] of the total variation on average. All the control variables have expected signs and statistically significant in general. For example, our results suggest 1% increase in real GDP per capita of country i increases the total tourists from that country to China by .6014% whereas 1% increase in population of the country i increases the total tourists to China by .7554%. Our results also indicate 1% increase in bilateral distance reduces the total tourists to China by 1.243% while sharing a common language would increase total tourists to China by 471% (exp(1.742)-1=4.71), *ceteris paribus*. Purchasing power conversion factor is positive and significant for leisure tourist flow.

As expected, the coefficients of CI are positive and statistically significant for all the regressions in Table 3 except for Friends and Family (Table 3 Column 4). For example, Our results suggest one additional establishment of CI increases the total tourists to China by 1.5% (exp(.0145)=1.015), *ceteris paribus*, and one more CI increases the leisure tourists to China by 1.9% (exp(.0184)=1.019), *ceteris paribus*.

The coefficients for cultural difference and institutional quality are of particular interests. Cultural difference has mixed coefficient estimates in our benchmark model. The coefficients are positive and significant for business tourists (Table 3 Column 2). Specifically, one standard deviation increase in cultural difference increases business tourists to China by 67% (exp(.4399*1.166)=1.67). The coefficients for institutional quality are positive and statistically significant for all the regressions in Table 3 except leisure tourists (Table 3 Column 3) and workers (Table 3 Column 5). One standard deviation change in institutional quality increases total tourists to China by 21.4% (exp(.0198*9.804)=1.214), *ceteris paribus*.

Table 4 summarizes the PPML estimates as in model (2), which are comparable to the pooled OLS estimates except that the sign of institutional quality coefficient switches from positive in OLS to negative in most cases. Coefficients of most of the control variables such as real GDP per capita, population, bilateral distance, and Chinese language dummy maintain expected signs and are statistically significant. Compared with OLS results, the coefficients of purchasing power parity conversion factor are mostly significant and positive in PPML estimate, except for business tourists. CI promotes tourists flow to China in total, business, leisure, friends and family, and workers. For example, one additional establishment of CI can increase total tourist flows to China by 1.29% (exp(.0129)=1.0129), *ceteris paribus*. Our results also suggest larger cultural difference attracts tourists to China except in the cases of friends and family and workers, and also higher institutional quality reduces the tourists to China except for friends and family and others. Specifically for work-

[5]The average of R-squares for our 6 benchmark regressions.

ers, one additional CI establishment increases worker tourists flow to China by 2.6% (exp(.0252)=1.026), *ceteris paribus*. One standard deviation increase in cultural difference or institutional quality would decrease worker tourists flow to China by 71.75% (exp(−1.084*1.166)−1=−.7175) or 66.15% (exp(−.1105*9.804)−1=−.6615), respectively.

We observe that the coefficient signs of cultural difference, and especially those of institutional quality are different in Table 3 and Table 4. Cultural difference can have either a negative impact on tourists to China since individual prefers familiar cultural surroundings, or a positive one since different culture may also attract leisure tourists. Institutional quality is expected to have a negative impact on tourist flows since individuals who are accustomed to high institutional quality, i.e., a high level economic freedom, are reluctant to be exposed to increased institutional risks. The impact of CI on China's tourists can be very different for different levels of cultural difference or institutional quality. Thus, one conjecture for the signs to be different from expected is due to restrictions in the benchmark model that there is no interaction between CI and cultural difference, or between CI and institutional quality.

To examine the effects of CI on Chinese inbound tourist which can vary with cultural difference, we introduce the interaction term between CI and cultural difference ($CI * CD$) using pooled OLS estimates with year fixed effects in Table 5 and PPML estimates with year fixed effects in Table 6. From both models, the control variables maintain expected signs and are significant in general. Though the coefficient signs of CI and cultural difference turn negative in general, the coefficients of interaction term ($CI * CD$) are significantly positive across all the regressions. Comparing OLS with PPML, we observe that the only qualitative distinction resides in the coefficient signs of institutional quality, mostly positive in OLS and negative in PPML. We believe that this discrepancy is most likely caused by the presence of heteroskedasticity. OLS yields inconsistent estimates while PPML provides more convincing results, which are consistent with our hypothesis that individuals who are accustomed to high institutional quality are reluctant to travel to places with increased institutional risks.

With the interaction term ($CI * CD$), the impact of CI on China's tourists can be attributed to the direct effect from CI and the indirect effect which depends linearly on CD through the interaction term $CI * CD$ (similar argument can be made on the impact of CD on China's tourists). Our results from PPML suggest that, with the interaction term, the direct effect of CI and cultural difference are insignificant in most cases except for workers, friends and family, or others. The positive coefficients from benchmark model are mostly attributed to the indirect effect from the interaction between cultural difference and CI. In Table 6 column 2, for example, with fixed one standard deviation in cultural difference, one additional CI establishment would increase business tourists to China by 25% (exp(-.0034+.1943*1.1661)=1.25), *ceteris paribus*. A positive and significant effect from CI can also be obtained on China's tourists in the total, leisure and other subcategories.

To investigate the effects of CI on Chinese inbound tourist which may depend on institutional quality, we include the interaction term between CI and institutional quality ($CI*INS$) using pooled OLS with year fixed effects in Table 7 and PPML with year fixed effects in Table 8. Again, the control variables exhibit expected signs and are significant in general. We notice that the coefficient signs of CI appear negative mostly except for workers in PPML and those of institutional quality switch from positive in OLS to negative in PPML except for friends and family, and others. The coefficients of interaction term ($CI * INS$) are significantly positive across all the regressions. In both cases, cultural difference shows a positive coefficient most of the

time. The sign of CI coefficient is not expected and we conjecture that it is due to the usage of the raw definition of INS. For robustness check, we follow the corruption literature (see Habib and Zurawicki (2002), Cuervo-Cazurra (2006), and Qian and Sandoval-Hernandez (2016)) and substitute INS with the difference of institutional quality between departure country i and China in absolute values ($|INS_i - INS_{China}|$) and estimate the PPML model for the total tourist flows. The estimation results are presented in the first column of Table 10. The result is comparable with our benchmark model. The coefficients for CI, cultural difference, and institutional quality are positive and statistically significant while the interaction term, though negative, is fairly small in magnitude.

With the interaction term ($CI * INS$), the impact of CI on China's tourists can be attributed to the direct effect from CI and the indirect effect which depends linearly on INS through the interaction term $CI * INS$ (similar argument can be made on the impact of INS on China's tourists). In Table 8, for instance, with fixed one standard deviation in institutional quality, one additional CI establishment would increase business tourists to China by 278% (exp(-.0066+0.1364*9.8039)−1=2.78), *ceteris paribus*. Note that though the direct effect of CI appears negative, the indirect effect which depends on INS is significantly positive and dominates.

The results from PPML model are consistent with our hypotheses. First of all, CI attracts tourists flow to China. Our benchmark model claims that additional establishment of CI in country i would increase total tourist from country i to China by 1.29%. Without interaction term, we find that cultural difference would positively affect tourists to China in most cases while Institutional quality negatively affects tourists. Second, we observe that the impact of CI on China's tourists is heterogeneous in that it depends on cultural difference and institutional quality, as illustrated through adding the interaction terms. For example, from Table 6, with fixed one standard deviation in cultural difference, one additional CI establishment increases total tourists to China by 22.5% (exp(-.0015+0.1750*1.1661)=1.225), *ceteris paribus*. Similarly, from Table 8, with fixed one standard deviation in institutional quality, one additional CI establishment would increase total tourist to china by 255% (exp(-.0049+0.1298*9.8039)−1=2.552), *ceteris paribus*. Third, a point that we show in the table but do not discuss before, is that establishment of CI, demonstrating Chinese government's effort to promote Chinese language and culture recognition, can also potentially change the partial impact of cultural difference on China's tourists and that of institutional quality on China's tourists. Though CD and INS can have very different impact in China's tourists, the presence of CI renders their partial impacts to be positive. For example, from Table 6, with one CI in the departure country, one standard deviation in cultural difference can increase total tourists to China by 5.8% (exp((-.1268+0.1750)*1.1661)=1.0578). Similarly, from Table 8, with the presence of one CI, one standard deviation in institutional quality can increase total tourists to China by 198% (exp((-.0186+0.1298)*9.8039)=2.98). This suggests CI establishments are more effective in countries with large cultural difference or higher institutional quality.

In our investigation above, we include the interaction terms ($CI*CD$ and $CI*INS$) additively. This essentially requires that the impact of CI on China's tourists is linear in CD or INS, and at the same time, the impact of CD and INS on China's tourists is linear in CI, an assumption which might be restrictive in practice. Due to the natures of those variables, one might argue that CI and CD, and CI and INS enter nonlinearly. To probe the robustness of our model specification, we further estimate the Partially Linear Model (PLM, see Robinson (1988) and Li (1996)) to allow the

interaction between CI and cultural difference/institutional quality enter the model non-linearly. For illustration purpose, we present the estimates only for total tourists, not for the five tourist flow subcategories. When we investigate the interaction effect between CI and cultural difference, we use the following model,

$$\begin{aligned} Ln(Tourist_{it}+1) =& \beta_1 Ln(POP_{it}) + \beta_2 Ln(DIS_i) + \beta_3 Ln(GDP_{it}/POP_{it}) \\ &+ \beta_4 Ln(PPP_{it}) + \beta_5 INS_{it} + m(CI_{it-1}, CD_i) \\ &+ \beta_6 Language_i + Time_t + \epsilon_{it}. \end{aligned} \tag{4}$$

We let all other variables enter into the model linearly, and allow nonlinear effects on China's tourists from CI and CD through $m(CI_{it-1}, CD_i)$, a nonparametric smooth function. Similarly, we investigate the interaction effect between CI and institutional quality with the following model

$$\begin{aligned} Ln(Tourist_{it}+1) =& \beta_1 Ln(POP_{it}) + \beta_2 Ln(DIS_i) + \beta_3 Ln(GDP_{it}/POP_{it}) \\ &+ \beta_4 Ln(PPP_{it}) + \beta_5 CD_i + m(CI_{it-1}, INS_{it}) \\ &+ \beta_6 Language_i + Time_t + \epsilon_{it}, \end{aligned} \tag{5}$$

where the nonlinear effect of CI and INS is captured with the nonparametric function $m(CI_{it-1}, INS_{it})$. For both models, the nonlinear components are of particular interest, as well as the coefficients of cultural difference and institutional quality when they enter the model linearly. We expect the other variables, such as GPD per capita and bilateral distances, to have the same signs as OLS and PPML estimates.

Table 9 presents estimates of the linear components of the PLM model. The results are comparable to those of benchmark model and PPML with expected signs. The nonlinear components are presented in Figure 1 and 2. Specifically, Figure 1(a) and Figure 1(b) plot the nonlinear component estimates, $m(CI_{it-1}, CD_i)$ in model (4) and $m(CI_{it-1}, INS_{it})$ in model (5), respectively at grid points. In model (4) with institutional quality entering linearly, we observe in Figure 1(a) that the interaction effect from CI and CD generally increase, either when we increase the number of CI established in the departure country holding cultural difference constant, or when we increase the cultural difference between departure country and China holding the number of CI in departure country constant. The interaction effect between CI and INS illustrated in Figure 1(b), however, appears to be fairly nonlinear. The interaction effect generally increases when we increase the number of CI, holding institutional quality constant, though the positive effect appears to be more prominent for very low or high levels of INS. The interaction effects by increasing INS with fixed CI appear more complex.

To illustrate the effects in detail, we plot in Figure 2(a) $m(CI_{it-1}, CD_i)$ estimates against CD and in Figure 2(b) $m(CI_{it-1}, INS_{it})$ against INS, holding CI at six, around its mean level. Figure 2(a) illustrates that interaction effect between CI and CD, for majority of the support, increases with cultural difference, though it decreases when CD is smaller than 1.4 or greater than 3. The interaction effect between CI and INS in Figure 2(b), however, appears to be highly nonlinear throughout its support. We provide in Figure 2(c) the plot of $m(CI_{it-1}, CD_i)$ estimates against CI holding CD at its mean level (2.19), and in Figure 2(d) the plot of $m(CI_{it-1}, INS_{it})$ against CI, holding INS at its mean level (68). They indicate a generally increasing effect on tourist flows from additional CI established.

The results above do seem to lend support of our analysis before. Partially linear

model estimates (Figure 2(c) and Figure 2(d)) indicate that CI's partial impacts on China's tourists, which depends on CD or INS, are mostly positive. This has been illustrated in our benchmark estimates as well as in PPML estimates. PLM estimates also indicate that the partial impact of CD on China's tourists (Figure 2(a)) appears to be positive at most of the support, while the partial impact of INS on China's tourists (Figure 2(b)) turns out to be highly nonlinear. These are not at odds with our benchmark and PPML estimates, which indicates positive impacts of CD and negative impacts of INS on China's tourists. The partial impacts of CD or INS on China's tourists do depend on CI, but the impacts exhibit significant amount of nonlinearity, which call for future investigations. The graphical result suggests that modeling the partial impact of CI on China's tourist as a linear function of CD or INS may roughly be a reasonable choice.

Although the PLM estimates suggest that the effects of cultural difference are linear for majority of the support, it does exhibit nonlinearity when the cultural difference between China and departure country is very small or very large. The delicate effects from cultural difference discussed before may also lend support for cultural difference to enter the model in a quadratic fashion. In addition, PLM estimates also suggest the effects of institutional quality maybe nonlinear. Thus, for additional robustness check, we estimated the PPML model for total inbound tourist flows with quadratic terms in cultural difference (CD^2) and institutional quality (INS^2). The results are presented in the second column of Table 10 and suggest an inverse U-shaped effect from cultural difference and a U-shaped effect from institutional quality. The coefficient for CI is positive and statistically significant and we have expected signs for other economic and geographic variables.

Again, following corruption literature (Habib and Zurawicki (2002), Cuervo-Cazurra (2006), and Qian and Sandoval-Hernandez (2016)), we replace institutional quality with the difference of institutional quality between departure country i and China in absolute values ($|INS_i - INS_{China}|$). We perform the PPML estimation using total tourists with interaction terms $CI * CD$ in the third (with CD, newly defined INS and their quadratic terms) and fourth (just like the third, without CD^2 term) columns of Table 10, and with $CI * |INS_i - INS_{China}|$ interaction term in the fifth (with CD, newly defined INS and their quadratic terms) and sixth (just like the fifth, without the square term for newly defined INS) columns. The results also suggest an inverse U-shaped effect from cultural difference, a U-shaped effect from institutional quality. The impacts of CI continue to be positive in both cases, either through its direct effect or through the combination of direct and indirect effects[6].

5. Conclusion

In this paper, we use a panel data of China's inbound tourism from 2005 to 2015 to investigate the effects of CI on China's tourist flows. For the first time, we examined the features of transmission channels and the heterogeneous effects of CI on China's tourist flows. We show that CI can stimulate the tourist flows to China even after controlling for different levels of cultural difference and institutional quality across departure countries. We observe that the effects of CI on China's inbound tourism are transmitted through two important channels. First, through developing international cultural exchange and promoting Chinese language, CI could effectively reduce

[6]The interaction term $CI * |INS_i - INS_{China}|$ carries a fairly small, though negative coefficient, so the partial impact of CI is positive for a wide range of $|INS_i - INS_{China}|$.

negative effects caused by cultural difference, such as psychic distance and transaction costs, on China's inbound tourism. Second, CI improves international friendship, cooperation, and recognition, which increases understanding of Chinese government policies and reduces information asymmetry. Interestingly, we find that the heterogeneous effects of CI on China's inbound tourism depend on institutional quality, and the effects of CI to boost China's tourists are more prominent in departure countries with larger cultural difference.

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Appendix - Tables and Figures

Table 1. List of Countries According to Continents

Asia		*Europe*		*America*	*Oceania*
India	Singapore	Austria	Portugal	Canada	Australia
Indonesia	South Korea	Belgium	Russia	Mexico	New Zealand
Japan	Sri Lanka	France	Spain	U.S.A	
Malaysia	Thailand	Germany	Sweden		
Nepal		Italy	Switzerland		
Pakistan		Netherlands	U.K.		
Philippines		Norway			

Table 2. Summary Statistics

Variables	*Mean*	*Median*	*S.T.D*	*Minimum*	*Maximum*
Total tourists to China	702097	424800	994086	21726	4776752
Business tourists to China	168433	43400	286091	1700	1572061
Leisure tourists to China	327880	154300	474397	2608	2508168
Friends and family tourists to China	7950	700	21112	0	191800
Workers tourists to China	68164	23381	114797	600	676800
Other tourists to China	129658	48000	251135	1737	1679300
Number of Confucius Institutes	6.3824	2.0000	12.5627	0	106
Cultural Difference	2.1891	2.3923	1.1661	.2391	4.1466
Institutional Quality	68.0132	68.8000	9.8039	49.8000	89.4000
Log of Real GDP per capita	9.7601	10.4912	1.4019	6.2243	11.4251
Log of Population	17.4778	17.6532	1.3644	15.2347	20.9941
Log of PPP conversion factor	.3920	−.7891	2.1697	−1.8053	7.0661
Log of bilateral distance	8.6875	8.9184	.5666	6.8624	9.4309
Chinese language dummy	.0689	0	.2538	0	1

Note: The period for Confucius Institute spans from 2004 - 2014 while the periods for other variables span from 2005 - 2015 to avoid potential endogeneity issues.

Table 3. OLS estimates of China's inbound tourist flows

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Business*	*Leisure*	*Fri. & Fam.*	*Workers*	*Others*
CI	.0145∗∗∗	.0058∗	.0184∗∗∗	.0126	.0194∗∗∗	.0097∗∗∗
	(.0037)	(.0033)	(.0046)	(.0077)	(.0056)	(.0036)
CD	-.0184	.4399∗∗∗	−.1357	−.1077	−.1946	.1007
	(.0813)	(.0715)	(.0996)	(.1650)	(.1206)	(.0775)
INS	.0198∗∗∗	.0297∗∗∗	.0104	.1222∗∗∗	−.0006	.0514∗∗∗
	(.0074)	(.0065)	(.0091)	(.0151)	(.0110)	(.0071)
$Ln(GDP)$	.6014∗∗∗	.5235∗∗∗	.7466∗∗∗	.6131∗∗∗	.4438∗∗∗	.4851∗∗∗
	(.0726)	(.0639)	(.0889)	(.1473)	(.1077)	(.0692)
$Ln(POP)$	.7554∗∗∗	.9772∗∗∗	.7354∗∗∗	.9702∗∗∗	.6338∗∗∗	.7889∗∗∗
	(.0451)	(.0397)	(.0553)	(.0915)	(.0668)	(.0402)
$Ln(PPP)$	.0348	−.0391	.0752∗∗∗	.01426	.0083	−.0261
	(.0281)	(.0248)	(.03455)	(.0572)	(.0418)	(.0269)
$Ln(DIS)$	−1.243∗∗∗	−1.449∗∗∗	−1.012∗∗∗	−1.621∗∗∗	−1.448∗∗∗	−1.492∗∗∗
	(.1011)	(.0895)	(.1240)	(.2054)	(.1500)	(.0965)
Language	1.742∗∗∗	2.324∗∗∗	1.909∗∗∗	2.077∗∗∗	1.154∗∗∗	1.617∗∗∗
	(.2434)	(.2142)	(.2983)	(.4940)	(.3609)	(.2322)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.7896	.8482	.7254	.7535	.6451	.8166
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as ∗∗∗ if $p < .01$, ∗∗ if $p < .05$, and ∗ if $p < .1$. Year fixed effects are not reported.

Table 4. PPML estimates of China's inbound tourist flows

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Business*	*Leisure*	*Fri. & Fam.*	*Workers*	*Others*
CI	.0129∗∗∗	.0120∗∗∗	.0184∗∗∗	.0063∗∗∗	.0252∗∗∗	−.0009
	(.0013)	(.0019)	(.0022)	(.0016)	(.0029)	(.0023)
CD	.0293	.2479∗∗∗	.1069∗	−.1263∗∗∗	−1.084∗∗∗	.1047∗∗∗
	(.0473)	(.0407)	(.0589)	(.0423)	(.1267)	(.0353)
INS	−.0225∗∗∗	−.0320∗∗∗	−.0331∗∗∗	.1127∗∗∗	−.1105∗∗∗	.0387∗∗∗
	(.0044)	(.0053)	(.0063)	(.0206)	(.0073)	(.0022)
Ln(GDP)	.6266∗∗∗	.7117∗∗∗	.5736∗∗∗	.6427∗∗∗	1.041∗∗∗	.7045∗∗∗
	(.0267)	(.0469)	(.0288)	(.1267)	(.0667)	(.0411)
Ln(POP)	.5644∗∗∗	.6842∗∗∗	.4926∗∗∗	.5810∗∗∗	.1676∗∗∗	.8327∗∗∗
	(.0298)	(.0215)	(.0535)	(.4919)	(.0329)	(.0407)
Ln(PPP)	.0621∗∗∗	−.0017	.1293∗∗∗	.1934∗∗∗	−.1297∗∗∗	.0286∗
	(.0054)	(.0079)	(.0041)	(.0218)	(.0061)	(.0167)
Ln(DIS)	−.9503∗∗∗	−1.287∗∗∗	−.7205∗∗∗	−.1629	−1.421∗∗∗	−1.114∗∗∗
	(.0123)	(.0263)	(.0315)	(.1661)	(.0174)	(.0163)
Language	1.709∗∗∗	1.851∗∗∗	2.190∗∗∗	.8657	−.9984∗∗∗	1.789∗∗∗
	(.1109)	(.0801)	(.0897)	(.5701)	(.1359)	(.216)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.8577	.8387	.7263	.5951	.6446	.9007
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as ∗∗∗ if $p < .01$, ∗∗ if $p < .05$, and ∗ if $p < .1$. Year fixed effects are not reported.

Table 5. OLS estimates of the Interaction Effects of CI on China's inbound tourist flows with respect to Cultural Difference

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Business*	*Leisure*	*Fri. & Fam.*	*Workers*	*Others*
CI	−.0050	−.0134∗∗∗	−.0024	−.0189∗	.0053	−.0104∗∗
	(.0047)	(.0041)	(.0058)	(.0097)	(.0073)	(.0044)
CD	−.1308∗	.3294∗∗∗	−.2549∗∗	−.2894∗	−.2761∗∗∗	−.0148
	(.0782)	(.0677)	(.0976)	(.1628)	(.1221)	(.0738)
CI∗CD	.1762∗∗∗	.1733∗∗∗	.1872∗∗∗	.2851∗∗∗	.1277∗∗∗	.1812∗∗∗
	(.0274)	(.0236)	(.0341)	(.0569)	(.0426)	(.0258)
INS	.0196∗∗∗	.0293∗∗∗	.0102	.1219∗∗∗	−.0007	.0512∗∗∗
	(.0069)	(.0060)	(.0087)	(.0145)	(.0109)	(.0066)
Ln(GDP)	.5003∗∗∗	.4240∗∗∗	.6391∗∗∗	.4494∗∗	.3705∗∗∗	.3811∗∗∗
	(.0699)	(.0605)	(.0872)	(.1455)	(.1091)	(.0659)
Ln(POP)	.6493∗∗∗	.8728∗∗∗	.6228∗∗∗	.7985∗∗∗	.5569∗∗∗	.6798∗∗∗
	(.0454)	(.0393)	(.0566)	(.0945)	(.0708)	(.0428)
Ln(PPP)	.0776∗∗∗	.0030	.1206∗∗∗	.0835	.0393	.0179
	(.0273)	(.0236)	(.0340)	(.0568)	(.0426)	(.0257)
Ln(DIS)	−1.104∗∗∗	−1.313∗∗∗	−.8649∗∗∗	−1.396∗∗∗	−1.347∗∗∗	−1.349∗∗∗
	(.0974)	(.0842)	(.1214)	(.2026)	(.1519)	(.0918)
Language	1.949∗∗∗	2.529∗∗∗	2.129∗∗∗	2.413∗∗∗	1.305∗∗∗	1.831∗∗∗
	(.2308)	(.1995)	(.2876)	(.4800)	(.3598)	(.2176)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.8152	.8713	.7505	.7726	.6554	.8511
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as ∗∗∗ if $p < .01$, ∗∗ if $p < .05$, and ∗ if $p < .1$. Year fixed effects are not reported.

Table 6. PPML estimates of the Interaction Effects of CI on China's inbound tourist flows with respect to Cultural Difference

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Business*	*Leisure*	*Fri. & Fam.*	*Workers*	*Others*
CI	−.0015	−.0034	.0027	−.0062	.0188**	−.0118***
	(.0031)	(.0031)	(.0037)	(.0043)	(.0058)	(.0035)
CD	−.1268	.1002	−.0418	−.3492**	−1.174***	−.0199
	(.1090)	(.0948)	(.1319)	(.1361)	(.2124)	(.0398)
*CI*CD*	.1750***	.1943***	.1883**	.1826**	.0651	.1408***
	(.0566)	(.0501)	(.0734)	(.0911)	(.0733)	(.0158)
INS	−.0176***	−.0252***	−.0268***	.0947***	−.1061***	.0378***
	(.0031)	(.0018)	(.0042)	(.0113)	(.0064)	(.0034)
Ln(GDP)	.4553***	.4942***	.3864***	.6959***	.9954***	.5695***
	(.0667)	(.0581)	(.0909)	(.1269)	(.0514)	(.0364)
Ln(POP)	.4469***	.5391***	.3563***	.4449***	.1532***	.7272***
	(.0716)	(.0657)	(.1102)	(.1459)	(.0427)	(.0305)
Ln(PPP)	.0891***	.0300***	.1636***	.2504***	−.1246***	.0542***
	(.0101)	(.0082)	(.0162)	(.0559)	(.0055)	(.0164)
Ln(DIS)	−.8101***	−1.131***	−.5560***	.0706	−1.374***	−.993***
	(.0499)	(.0406)	(.0883)	(.3041)	(.0431)	(.0271)
Language	1.801***	1.968***	2.298***	1.173***	−1.001***	1.943***
	(.1011)	(.0681)	(.0765)	(.4278)	(.1375)	(.2124)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.8698	.8561	.7329	.5909	.6434	.8965
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as *** if $p < .01$, ** if $p < .05$, and * if $p < .1$. Year fixed effects are not reported.

Table 7. OLS estimates of the Interaction Effects of CI on China's inbound tourist flows with respect to Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Business*	*Leisure*	*Fri. & Fam.*	*Workers*	*Others*
CI	−.0074	−.0076∗	−.0096∗	−.0108	.0005	−.0052
	(.0047)	(.0043)	(.0057)	(.0100)	(.0073)	(.0046)
CD	.0619	.4893∗∗∗	−.0328	−.0214	−.1251	.1555∗∗
	(.0761)	(.0699)	(.0926)	(.1637)	(.1191)	(.0756)
CI∗INS	.1259∗∗∗	.0772∗∗∗	.1610∗∗∗	.1352∗∗∗	.1089∗∗∗	.0857∗∗∗
	(.0177)	(.0162)	(.0215)	(.0379)	(.0276)	(.0175)
INS	.0179∗∗∗	.0284∗∗∗	.0079	.1203∗∗∗	−.0022	.0501∗∗∗
	(.0069)	(.0063)	(.0084)	(.0148)	(.0108)	(.0068)
Ln(GDP)	.4443∗∗∗	.4272∗∗∗	.5457∗∗∗	.4444∗∗	.3079∗∗∗	.3782∗∗∗
	(.0707)	(.0649)	(.0860)	(.1521)	(.1107)	(.0702)
Ln(POP)	.6365∗∗∗	.9044∗∗∗	.5835∗∗∗	.8426∗∗∗	.5309∗∗∗	.7080∗∗∗
	(.0449)	(.0413)	(.0547)	(.0967)	(.0703)	(.0447)
Ln(PPP)	.0668∗∗	−.0194	.1162∗∗∗	.0487	.0360	−.0043
	(.0265)	(.0243)	(.0322)	(.0569)	(.0414)	(.0263)
Ln(DIS)	−1.071∗∗∗	−1.344∗∗∗	−.7919∗∗∗	−1.436∗∗∗	−1.298∗∗∗	−1.375∗∗∗
	(.0968)	(.0888)	(.1177)	(.2081)	(.1514)	(.0961)
Language	2.144∗∗∗	2.571∗∗∗	2.422∗∗∗	2.508∗∗∗	1.502∗∗∗	1.891∗∗∗
	(.2323)	(.2132)	(.2826)	(.4996)	(.3634)	(.2307)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.8202	.8589	.7688	.7635	.6626	.8394
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as $***$ if $p < .01$, $**$ if $p < .05$, and $*$ if $p < .1$. Year fixed effects are not reported.

Table 8. PPML estimates of the Interaction Effects of CI on China's inbound tourist flows with respect to Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Business*	*Leisure*	*Fri. & Fam.*	*Workers*	*Others*
CI	−.0049∗∗∗	−.0066∗∗∗	−.0077∗∗∗	−.0047	.0152∗∗∗	−.0051∗∗
	(.0016)	(.0024)	(.0023)	(.0062)	(.0032)	(.0025)
CD	.1331∗∗∗	.3931∗∗∗	.2612∗∗∗	−.1146∗∗	−1.079∗∗∗	.1318∗∗∗
	(.0361)	(.0211)	(.0456)	(.0485)	(.1227)	(.0368)
CI∗INS	.1298∗∗∗	.1364∗∗∗	.1924∗∗∗	.1045	.0652∗∗∗	.0312∗∗∗
	(.0175)	(.0187)	(.0325)	(.0709)	(.0187)	(.0103)
INS	−.0186∗∗∗	−.0268∗∗∗	−.0272∗∗	.0959∗∗∗	−.1057∗∗∗	.0383∗∗∗
	(.0034)	(.0014)	(.0047)	(.0091)	(.0063)	(.0027)
Ln(GDP)	.3932∗∗∗	.4419∗∗∗	.2420∗∗	.6909∗∗∗	.9390∗∗∗	.6512∗∗∗
	(.0501)	(.0393)	(.0996)	(.1332)	(.0455)	(.0470)
Ln(POP)	.4834∗∗∗	.5965∗∗∗	.3484∗∗∗	.4660∗∗∗	.1620∗∗∗	.8095∗∗∗
	(.0411)	(.0337)	(.0865)	(.1444)	(.0298)	(.0431)
Ln(PPP)	.0889∗∗∗	.0293∗∗∗	.1826∗∗∗	.2359∗∗∗	−.1253∗∗∗	.0348∗∗∗
	(.0142)	(.0113)	(.0195)	(.0547)	(.0096)	(.0162)
Ln(DIS)	−.7488∗∗∗	−1.077∗∗∗	−.3943∗∗∗	.0477	−1.323∗∗∗	−1.067∗∗∗
	(.0456)	(.0458)	(.0964)	(.3405)	(.0296)	(.0246)
Language	2.212∗∗∗	2.431∗∗∗	2.921∗∗∗	1.443∗∗∗	−.8276∗∗∗	1.942∗∗∗
	(.1079)	(.1105)	(.1414)	(.3228)	(.1043)	(.1750)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.8833	.8794	.7885	.6039	.6417	.8944
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as ∗∗∗ if $p < .01$, ∗∗ if $p < .05$, and ∗ if $p < .1$. Year fixed effects are not reported.

Table 9. Linear Component of PLM for Total Tourist Flow

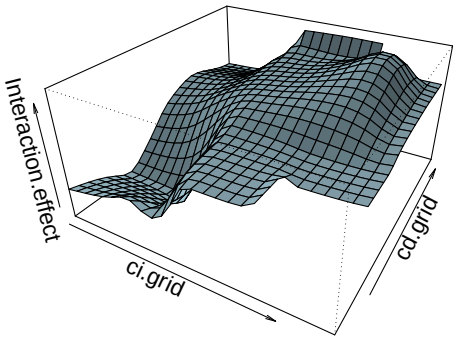
Variables	(1)	(2)
	m(CI, CD)	*m(CI, INS)*
CD	—	.0166**
	—	(.0054)
INS	.0388***	—
	(.0119)	—
Ln(GDP)	.2131	.6807***
	(.1389)	(.1361)
Ln(POP)	.7019***	.6806***
	(.0753)	(.0776)
Ln(PPP)	.1282***	.0142
	(.0490)	(.0454)
Ln(DIS)	−.8274***	−1.396***
	(.1842)	(.1851)
Language	2.391***	2.036***
	(.4360)	(.4293)
Observations	319	319
Number of countries	29	29
Time period	2005-2015	2005-2015
State fixed effects	No	No
Year fixed effects	Yes	Yes

Note: Robust standard errors are reported in parentheses and significance levels are denoted as *** if $p < .01$, ** if $p < .05$, and * if $p < .1$. Year fixed effects are not reported.

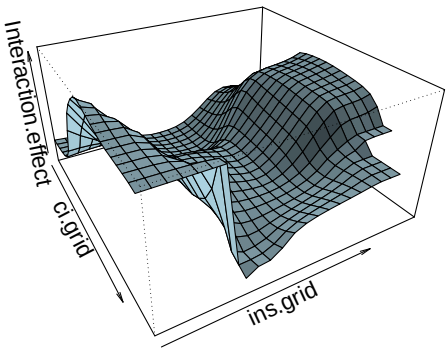
Table 10. Robustness Checks for the Effects of C.I. on China's Total inbound tourist flows

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Total	*Total*†	*Total*	*Total*	*Total*	*Total*
CI	.0924∗∗∗	.0124∗∗∗	.0036	.0023	.0477∗∗∗	.0788∗∗∗
	(.0116)	(.0011)	(.0035)	(.0031)	(.0147)	(.0151)
CD	.1373∗∗∗	.6880∗∗∗	.4745	−.0182	.7868∗∗∗	.6745∗∗∗
	(.0349)	(.1404)	(.4121)	(.1058)	(.2033)	(.2246)
CD^2	—	−.1442∗∗∗	−.1055	—	−.1444∗∗∗	−.1177∗∗∗
	—	(.0234)	(.0677)	—	(.0392)	(.0438)
CI∗CD	—	—	.1143∗	.1448∗∗	—	—
	—	—	(.0644)	(.0526)	—	—
CI∗INS	−.0034∗∗∗	—	—	—	−.0015∗∗	−.0029∗∗∗
	(.0005)	—	—	—	(.0006)	(.0006)
INS	.0246∗∗	−.0229∗∗∗	−.1088∗∗∗	−.1118∗∗∗	−.0829∗∗∗	.0235∗∗∗
	(.0105)	(.0026)	(.0162)	(.0186)	(.0279)	(.0101)
INS^2	—	.0028∗∗∗	.0027∗∗∗	.0027∗∗∗	.0025∗∗∗	—
	—	(.0002)	(.0004)	(.0004)	(.0006)	—
Ln(GDP)	.3579∗∗∗	.6049∗∗∗	.4924∗∗∗	.5397∗∗∗	.4621∗∗∗	.2863∗∗∗
	(.0527)	(.0264)	(.0348)	(.0786)	(.0444)	(.0259)
Ln(POP)	.6213∗∗∗	.5637∗∗∗	.4893∗∗∗	.4686∗∗∗	.5859∗∗∗	.6126∗∗∗
	(.0151)	(.0209)	(.0687)	(.0642)	(.0117)	(.0121)
Ln(PPP)	.0715∗∗∗	.04519∗∗∗	.0655∗∗∗	.0529∗∗∗	.0626∗∗∗	.0924∗∗∗
	(.0124)	(.0059)	(.0051)	(.0114)	(.0052)	(.0182)
Ln(DIS)	−.8647∗∗∗	−1.087∗∗∗	−.9949∗∗∗	−1.056∗∗∗	−.9909∗∗∗	−.7773∗∗∗
	(.0374)	(.0302)	(.0359)	(.0763)	(.0351)	(.0450)
Language	1.828∗∗∗	1.737∗∗∗	1.875∗∗∗	1.634∗∗∗	2.334∗∗∗	2.156∗∗∗
	(.1462)	(.1183)	(.1925)	(.0861)	(.1541)	(.2464)
Observations	319	319	319	319	319	319
Number of countries	29	29	29	29	29	29
R-square	.8777	.9230	.9053	.8921	.9091	.8900
Time period	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015	2005-2015
State fixed effects	No	No	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

†: The institutional quality used in this regression (Column (2)) is obtained from Heritage Foundation while the institutional quality used in other regressions (Columns (1), (3)-(6)) is transformed via $|INS_i - INS_{China}|$.
Note: Robust standard errors are reported in parentheses and significance levels are denoted as ∗∗∗ if $p < .01$, ∗∗ if $p < .05$, and ∗ if $p < .1$. Year fixed effects are not reported.

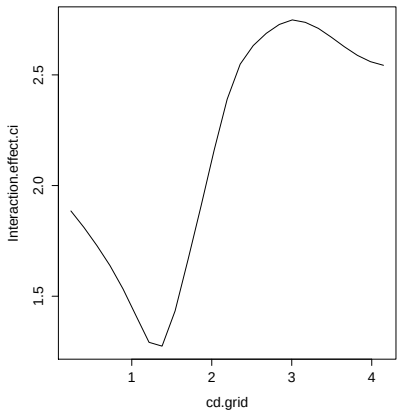


(a) PLM estimates $m(CI, CD)$

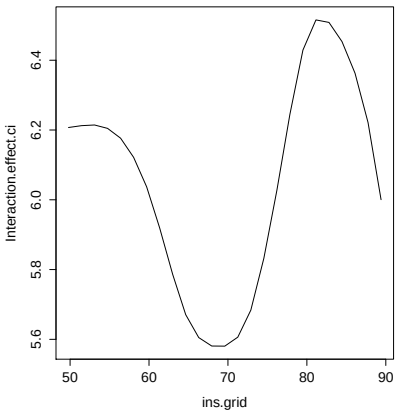


(b) PLM estimates $m(CI, INS)$

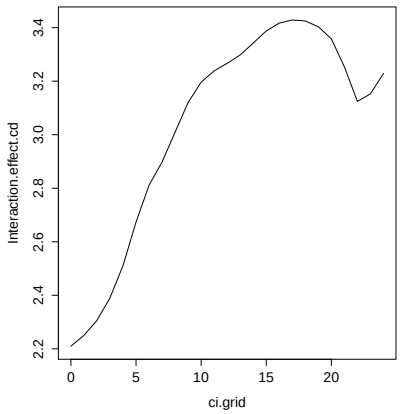
Figure 1. Plots of Partially Linear Model interaction term estimates with total tourists flow



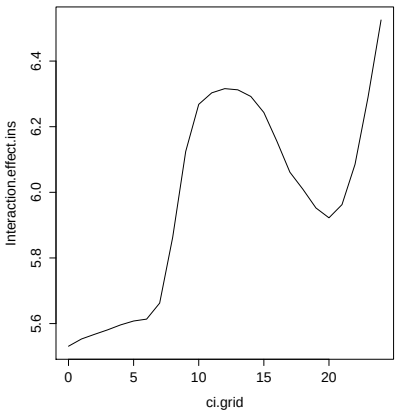
(a) Plot of $m(CI, CD)$ estimates against CD holding $CI = 6$



(b) Plot of $m(CI, INS)$ estimates against INS holding $CI = 6$



(c) Plot of $m(CI, CD)$ estimates against CI holding $CD = 2.19$



(d) Plot of $m(CI, INS)$ estimates against CI holding $INS = 68$

Figure 2. Plots of Partially Linear Model interaction term estimates with total tourists flow by holding one variable constant