

**Effects of Cultural Institutes on Bilateral Trade and FDI Flows:
Cultural Diplomacy or Economic Altruism?**

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Abstract

The number of cultural institutes from major developed and developing countries increased significantly in the last twenty years. In this paper, using cross sectional and panel data analysis on bilateral trade in goods and services, and FDI inflows and outflows, we examine the economic effects of 1,266 cultural institutes from China, France, Germany, Japan, Portugal, Spain, Turkey and the U.K. for the period of 1990-2015. The empirical results suggest that cultural institutes have a significantly trade enhancing effect on bilateral exports and imports of goods and services, and FDI outflows. The effects are stronger for services trade than goods trade, for goods exports than imports, and for FDI outflows than goods exports and imports. However, we do not find any effect of cultural institutes on FDI inflows. We also show that these effects are not homogenous across destinations and are stronger for developing than developed countries.

Keywords: Cultural Institutes, Bilateral Trade, Bilateral FDI, Country heterogeneity

JEL Classification: F14, F15, F21, Z10

1. Introduction

Do cultural affinity and language familiarity affect bilateral economic exchanges? This question has been at the heart of a large and growing number of papers with a mostly affirmative answer. The existing evidence suggests that common language, religion, cultural affinity and other aspects of cultural and historical connections are significant drivers of bilateral trade and investment flows. In this paper we contribute to this debate by exploring the effects of cultural and language institutes on bilateral trade in goods and services and FDI flows.

Cultural and language differences are known to be major drivers of economic decision-making and preferences at least since the time of John Stuart Mill, who argued that such differences can be even more important than the pursuit of self-interest (1956: 484). Since then a large and growing literature has established that language or cultural heterogeneity create non-tariff entry and exit barriers and are important determinants of economic exchanges between countries. Common language and language proficiency, for example, are found to be robust and significant determinants of bilateral trade and FDI flows (Hutchinson, 2002; Anderson and Wincoop, 2004; Bergstrand and Egger, 2007; Melitz, 2008; Guiso et al., 2006, 2009; Ku and Zussman, 2010; Egger and Lassmann, 2012; Melitz and Toubal, 2014; Egger and Lassmann, 2015; Gokmen, 2017).¹

Cultural similarity (or distance) is also shown to be a significant driver of bilateral economic exchanges. Guiso et al. (2006, 2009) argue that cultural biases, conditioned by traits such as religion, history of conflicts, and genetic and somatic similarities, have a significantly negative effect on bilateral trade, portfolio investment and FDI flows. Likewise, Boisso and Ferrantino (1997), Disdier and Mayer (2007) and Gokmen (2017) confirm that cultural familiarity has a significantly positive effect on bilateral trade flows. Culture also affects the type

and structure of domestic institutions, which are shown to affect trade and investment flows (Hofstede, 2001). Particularly, institutional differences in legal codes, transparency, political stability, financial system, corruption, law and order, etc. are shown to be significant drivers of trade and investment flows. Such differences create non-tariff entry barriers and increase the cost of doing business and hurt exporter entry, growth and survival dynamics as well as trade volumes (Shleifer and Vishny, 1993; Anderson and Marcouiller, 2002; Belloc, 2006; Konya, 2006; Levchenko, 2007; Papaioannou, 2009; Fernandes et al. 2016; Araujo et al. 2016).

Overall, therefore, increasing language and cultural recognition and affinity between host and home countries can help develop bilateral economic exchanges through lowering entry barriers.² They also help businesses in both countries by lowering transaction costs through providing know-how and country-specific information. Recognizing such benefits of cultural and language familiarity, many countries have established cultural and language centers as well as foreign language radio and TV broadcasts across a wide range of countries. Furthermore, cultural institutes also offer various scholarships, allowing students and academics to visit home countries. British Council (2015), for example, reports that its work helps improve the economic prosperity of the U.K. through establishing international connections, building trust and cultural understanding, and increasing trade and investment flows.³ Cultural institutes also serve political purposes as they promote the social, cultural and political values and priorities of home country governments.⁴ Overall, therefore, language and cultural institutes play a major role in lowering non-tariff entry barriers and help build bridges between home and host countries, allowing increased trade, investment and social, political and educational exchanges.

Seeing these cultural centers as strategic instruments for economic penetration into new markets and for soft power through cultural and political influence, home country governments

subsidize these cultural institutes and support their operations.⁵ British Council of the U.K., for example, was operational with 193 offices in 118 countries in 2015. Likewise, Germany's *Goethe Institut*, Japan's *Foundation*, France's *Institut Francais*, Spain's *Instituto Cervantes*, Portugal's *Instituto Camoes* are other similar centers that are established across a wide range of countries. While up until recently most such institutes were from developed countries, developing countries have also started following suit such as the *Confucius Institute* of China and the *Yunus Emre* institute of Turkey. Particularly, reflecting its growing global power, China has become a major exporter of language and cultural institutes around the world through its Confucius Institutes, which reached a record number of 453 in 118 countries in 2015.⁶ Reflecting Chinese government's strategic goals to expand its soft power, the majority of these institutes are opened in developed countries with the U.S. coming first with 99 and the U.K. coming second with 27 institutes. We observe a similar objective for Turkey, whose the Yunus Emre institute is mostly opened in former Ottoman territories of Balkan states with Bosnia and Herzegovina and Kosovo coming as the top two destinations with three institutes in each.

Despite a large number of studies on the effects of cultural and language similarities on trade and investment flows, research on the effects of institutional networks remain limited. Among the few, Rose (2007) finds a significantly positive effect of foreign embassies on home country exports. Likewise, Ferguson and Forslid (2013) show that the number of Swedish exporters to a given destination increases significantly after the opening of a new Swedish embassy. In a meta analysis, Moons and Bergeijk (2016) report that economic diplomacy through embassies, consulates, other diplomatic facilities, investment and export promotion offices, trade and state visits has a significantly positive effect on trade and investment flows. Among existing studies, the closest research to ours are Akhtaruzzaman et al. (2017), Lien and

Co (2013) and Lien et al. (2012, 2014) for the case of Confucius Institutes, and Lien and Lo (2017) for the Goethe Institute. Akhtaruzzaman et al. (2017) report a significantly positive effect of Confucius Institutes on FDI outflows from China to Africa and Lien et al. (2012) report a positive effect on Chinese exports and FDI outflows to the rest of the world. Lien and Co (2013) reports a similar effect for US exports to China and Lien et al. (2014) find a positive effect on demand for international travel to China. Likewise, Lien and Lo (2017) report a significantly positive effect of Goethe Institute on German exports and FDI flows. However, these studies are case studies focusing on only one or two cultural institutes at a time and are usually for aggregate trade, and therefore are much limited in scope. The limited sample size in these studies also makes it difficult to address home and host country heterogeneity.

In this paper we examine the effects of cultural and language institutes on bilateral trade in goods and services and FDI flows. While most studies treat cultural, historical and language similarities as time-invariant and static, the presence of these institutes and their main motivations and goals suggest that we should perhaps treat them as dynamic. That is, through these institutes, countries build and develop new cultural ties with their country of destination, allowing them to lower entry barriers into those markets. We also study the heterogeneous effects of these institutes based on the type of economic exchange such as trade in goods and services and FDI inflows and outflows, as well as the destination country development levels. Our identification strategy also allows us to control for home country heterogeneity. The empirical analysis is based on 1,266 cultural centers from China, France, Germany, Japan, Portugal, Spain, Turkey and the UK for the period of 1990-2015. The empirical results using both cross section and panel data analysis suggest that cultural institutes have a significantly positive effect on bilateral exports and imports in goods and services and FDI outflows.

Furthermore, the effects are stronger for services trade than goods trade, for goods exports than imports, and for FDI outflows than merchandise goods trade. However, there is no significant or robust effect on FDI inflows. We also show that these effects are not homogenous across destination countries and are stronger for developing than developed countries

The rest of the paper is organized as follows. Section 2 introduces the empirical analysis, including the estimation method and data, followed by section 3, which presents the empirical results together with extensions and robustness tests. Section 4 concludes.

2. Empirical Analysis

2.1 The empirical specification

In order to test the effects of cultural and language institutes on bilateral trade and investment flows we use a standard (log-linearized) gravity model in Eq. (1) as in Anderson and Wincoop (2004), Disder and Mayer (2007), Guiso et al. (2009), Egger and Lassmann (2012) and Melitz and Toubal (2014).

$$X_{ijt} = \alpha_0 + \beta_1 Inst_{ijt} + \alpha_i Gravity_{ijt} + V_{ijt} + \varepsilon_{ijt} \quad (1)$$

where X_{ijt} is the (log) level of bilateral trade (i.e. exports and imports) in merchandise goods and services, and FDI inflows and outflows between home country i and host country j in year t (in current US dollars); $Inst_{ijt}$ is the total (log) number of cultural institutes operated by home country i in host country j in year t ; $Gravity$ includes standard gravity variables, which are described below; V_{ijt} is a vector of year, host and home country fixed effects; and ε_{ijt} is the error term. For FDI inflows and outflows, we applied a log-log transformation based on Yeyati et al. (2003) and converted the dependent variable to logarithms using the following method: $log(FDI) = sign(FDI) \times log(1 + absolute\{FDI\})$.

Inst is our main variable of interest, and as discussed before, we expect cultural institutes to have a positive effect on bilateral economic exchanges by lowering non-tariff trade and entry barriers and by increasing the range of economic opportunities.

Gravity includes the standard gravity controls as follows: GDP_{it} and GDP_{jt} are the (log) levels of GDPs of country i and j in current dollars, which control for the market size and home market effects; $GDPPC_{it}$ and $GDPPC_{jt}$ are the GDP per capita of country i and j (in current dollars), controlling for income effects; $Language_{ij}$, $Border_{ij}$, $Colony_{ij}$, $Religion_{ij}$ and $Legal_{ij}$ are time invariant dummy variables equaling to one if i and j share a common: language, common border, colonial past, religion or legal code, respectively. Controlling for time-invariant cultural, historical and religious determinants of economic exchanges such as *Language*, *Colony*, *Religion* or *Legal* helps us separate the direct and time-variant effects of cultural institutes. A common legal system, for example, lowers the cost of entry and exit barriers and transaction costs. Likewise, common religion affects cultural and institutional affinity and trust between countries and therefore can affect economic exchanges. *Areap* is (log product) area in square km of i and j . PTA_{ijt} is a dummy variable equaling one for bilateral preferential trade agreements; and EU_{ijt} is a dummy variable if i and j are both in EU.

In order to control for time invariant but country specific determinants of bilateral trade and FDI flows, we include home and host country fixed effects. Time-specific and country-invariant global changes in trade and FDI flows are captured by year fixed effects. In the robustness section we also experiment with home and host country-year fixed effects as well.

2.2 Data

The data on bilateral trade between eight home (i.e. China, Germany, France, Japan, Portugal, Spain, Turkey and United Kingdom) and 214 host countries are from the IMF's Direction of

Trade Statistics dataset, covering the period of 1990-2015 and are in current dollars. When not available, we used the mirror values of exports and imports from trading partners for the full time period and adjusted the cif values to fob values using the average margins for the full sample, which was 5%. The bilateral services trade and FDI data (in current dollars) are from the OECD statistics, covering the period of 1990-2015. The FDI data are based on the FDI-receiving host countries if both i and j are member of OECD. For China, we used the FDI inflows and outflows data from the OECD countries using mirror values.

The data on cultural institutes are hand-gathered from official websites and publicly available annual reports. In a few cases, we also gathered information through our e-mail correspondence with the institutes. In the end we have information on eight home countries, which are China (Confucius Institute), France (Institut de Francais), Germany (Goethe Institute), Japan (Foundation), Portugal (Instituto Camoes), Spain (Instituto Cervantes), Turkey (Yunus Emre Institute), and the U.K. (British Council). For 5 countries, China, Germany, Japan, Portugal, and Spain, we have a time-variant panel data that includes the establishment dates of the institutes in each host country. For three countries, France, Turkey and the U.K., we only have cross-section data for their total numbers in 2015 as the establishment dates were not made publicly available.⁷

Gravity variables for GDP and GDP per capita are from the World Development Indicators of the World Bank. PTA data are from the WTO. Distance, country size, colonial links, common border, language, common religion, and legal system are from the CEPII database.⁸ Tables 1 and 2 show the descriptive statistics for data used in the cross section and panel data analysis.

<Insert Table 1 & 2 Here>

The distribution of cultural institutes reflects the economic and political priorities of home countries. For China, the trading partner with the highest number of cultural institutes is the USA, reaching 99 in 2015, up from 0 in 2004. For Germany it is France (8 institutes), for Spain it is Brazil (8 institutes), for France, it is Germany (21 institutes), for the U.K. it is India (9 institutes), for Japan it is India and USA (two institutes each), for Portugal it is Italy (12 institutes), and for Turkey it is Bosnia and Herzegovina and Kosovo (two institutes each) in 2015. In terms of the totals, China is the heavyweight with 453 institutes established in 118 countries, followed by France with 207 institutes in 97 countries, and Great Britain with 193 institutes in 118 countries. Then comes Germany with 151 institutes in 94 countries, Portugal with 121 institutes in 46 countries, Spain with 75 institutes in 43 countries, Turkey with 43 institutes in 35 countries, and lastly Japan with 23 institutes in 21 countries. The regional distribution of these institutes also reflects the priorities and motivations of home country governments. For China, the largest concentration of Confucius Institutes is in Europe (172) followed by North America (110) whereas Middle East and North Africa (MENA) region hosts only 8 while Sub Saharan Africa and Latin America regions, which are the targets of increasing Chinese investment and trade flows, host 37 and 35 institutes, respectively. For Germany, Spain, France, Great Britain, Portugal and Turkey, the highest concentration of cultural institutes is in Europe and is intra-regional.

The number of cultural institutes by China, Germany, Spain, Japan and Portugal increased almost seven-folds from 1990 to 2015, up from 122 to 823. Once we include France, Turkey and the UK, for which we have only cross sectional data in 2015, the total number for all seven countries increases to 1,266 in 2015. Particularly striking is the expansion of Confucius Institutes since 2004, when it was first opened in only one country, Republic of Korea. At the

end of 2015, the number of Confucius Institutes increased to 453 in 118 countries. Meanwhile, of the five countries, the share of the Goethe Institute of Germany dropped from 89% in 1990 to 19% in 2015. Looking at all seven countries in the sample, the share of China was 36%, followed by France at 16%, UK at 15%, Germany at 12%, Portugal at 10%, Spain at 6%, Turkey at 3%, and Japan at 2% in 2015.

<Insert Table 3 Here>

3. Empirical Results

3.1 Cross sectional analysis

We start our analysis by examining the effects of cultural institutes using the cross section data, which allows us to use the widest sample possible as of 2015. As noted before, the time series data are not available for the British Council of the U.K., Institut de Francais of France and Yunus Emre Institute of Turkey. Table 4 presents the results from the cross sectional analysis with regard to the effects of cultural institutes on merchandise goods and services exports and imports of eight home countries, including a full set of home and host country fixed effects. Column (1) shows results using the bare-bones version of Eq. (1) for exports followed by the benchmark specification in column (2) where we introduce the full set of control variables. The results suggest that cultural institutes have a significantly positive effect on home country exports. We also find that introducing gravity controls, including time-invariant language and cultural ties, reduce the coefficient estimate of cultural institutes by more than half, from 0.585 to 0.187. The effect is also economically significant as the coefficient estimate in column (2) implies that a ten percent increase in the number of cultural institutes facilitates a 1.87 percent increase in home country exports to the destination country. We also find that, consistent with previous research, distance has a significantly negative while joint country size, colonial links,

PTAs and EU membership dummies have positive effects on exports. Sharing a common border, common language, common religion and common legal system all appear to have positive and significant effects on exports. These variables capture the familiarity effect of culture and language and are consistent with the positive and significant effect of institutions on exports.

<Insert Table 4 Here>

In columns (3)-(4) we examine the effects of cultural institutes on home country imports from country j . While the effect is positive and significant in column (3), it disappears once we include the gravity controls in column (4). It appears that cultural institutes have a significantly larger effect on merchandise goods exports than imports. Similar to the case of exports, joint area size, common colonial past, language or legal system, PTAs and EU membership, affect imports positively. Common religion or sharing a border, however, does not seem to have any significant effect on imports.

Columns (5)-(6) show the effect of cultural institutes on services exports, which is positive and significant both with and without gravity controls. Similar to merchandise goods exports, we find that the effect of cultural institutes drops significantly from 0.659 in column (5) to 0.28 in column (6) where we control for gravity variables. For the most part, other control variables retain their signs and significance levels with the exception of common border and PTA effects. We find that, similar to merchandise exports, distance has a negative effect on services exports while having a common colonial past, sharing a common language, religion, or legal system all have a positive effect. The results also suggest a stronger effect of *Inst* on services exports than merchandise exports (i.e. 0.280 vs. 0.187).

The results in columns (7)-(8) suggest that cultural institutes significantly increase services imports. The coefficient estimate increases significantly from 0.004 for merchandise

goods imports in column (4) to 0.307 for services imports in column (8) and becomes significant at 1% level. Arguably, cultural familiarity is more important for services trade than goods trade as consumers are more directly exposed to language and cultural barriers.⁹ Other Gravity controls appear with expected signs and significance levels as in column (4). We should note, however, that the number of observations as well as country coverage drops significantly for services trade sample.

Columns (1)-(2) in Table 5 shows the effects of cultural institutes on FDI outflows from home county i to destination country j and reveal a significantly positive effect. We also note that the economic effect of cultural institutes on FDI outflows is significantly larger than the effect on trade flows: a ten percent rise in the number of cultural institutes increases FDI outflows from i to j by 9.76 percent, which is quite large. Regarding other control variables, they lose most of their significance levels but retain the correct signs. In columns (3)-(4) we examine the effects of cultural institutes on FDI inflows to home countries but do not find any significant or robust effect. The results suggest that cultural institutes affect FDI outflows but not inflows.

<Insert Table 5 Here>

Last but not least, in all sets of regressions in Tables 4 and 5 the coefficient estimates for cultural institutes drop significantly once we introduce gravity variables including common language, religion, legal code and colonial linkages. These results provide support to our estimation methodology as we expect the effect of cultural institutes to be smaller for those country pairs that already share a common language, religion, legal system or colonial past.

3.2 Panel data analysis

In Table 6 we present results from the panel data analysis, which allows us to explore time-variant effects of cultural institutes. However, this comes at a cost as three countries, France, the

U.K. and Turkey, do not have time series information on their cultural institutes and therefore had to be dropped from the sample. Table 6 replicates the regression estimations of Table 4 but this time using panel data with country and year fixed effects, in addition to other country and time variant control variables. Columns (1)-(2) show the results for total merchandise goods exports and yield a significantly positive coefficient estimate for cultural institutes. Compared to cross section results in Table 4, the coefficient estimate for *Inst* is found to be higher (0.187 vs. 0.281). Gravity controls appear with expected signs and significance levels and are similar to those reported in Table 4.

<Insert Table 6 Here>

In column (3)-(4) we find that cultural institutes have a significantly positive effect on merchandise goods imports. Unlike the case with cross sectional analysis in Table 4, *Inst* remains positive and significant even after the inclusion of Gravity controls in column (4). Similar to Table 4, however, the economic effect is smaller than that for exports (0.196 vs. 0.281). Columns (5)-(6) and (7)-(8) show that *Inst* has a significantly positive effect on services exports and imports. The effect on services exports in column (6) is larger than that for merchandise goods in column (2). The effect on services imports in column (8), on the other hand, is lower than that for merchandise imports in column (4). Unlike the case in Table 4 where the effect of *Inst* appeared to be quite similar, here we find that it is stronger for services exports than services imports. Gravity controls, for the most part, again appear to have the expected sign and significance levels. The effect of sharing a common border, however, is found to be negative in all sets of regressions. We should also note that the number of observations for services trade is significantly lower than those for merchandise goods trade as the number of trading country pairs dropped significantly in the sample. All regressions include four sets of (unreported) control

variables for income and market size at home and destination markets that are home and host country nominal GDPs and per capita incomes (in current dollars), which are reported fully in the online Appendix.

Table 7 presents panel data results for FDI flows as the dependent variable. In columns (1)-(2) we find that *Inst* has a significantly positive effect on FDI outflows from home to host countries, similar to the cross sectional results in Table 5. Likewise, we again find that *Inst* has a stronger effect on FDI outflows than on merchandise goods exports or imports.¹⁰ Regarding FDI inflows in columns (3)-(4), we again do not find any significant effect of *Inst*, very much as in Table 5 with the cross section analysis. This finding provides support to the view that cultural institutes are more instrumental in establishing networks and increasing know-how about destination countries, enabling more investment flows in that direction. However, we find no evidence of a two-way relationship that could suggest that the same was true for destination countries. In all sets of regressions other control variables are found with expected signs for the most part, showing that increasing distance discourages FDI inflows and outflows while colonial past, common language, and PTAs increase FDI outflows. Common religion, unlike the case with trade flows, do not appear to have any effect of FDI inflows or outflows. Common legal code is found to have a positive effect only on FDI inflows. In both Table 6 and 7, we confirm the finding from Tables 4 and 5 showing that the effect of *Inst* drops significantly once we include Gravity controls.

<Insert Table 7 Here>

3.3 Partner country heterogeneity

The results presented in Tables 4-7 suggest that cultural institutes have a significantly positive effect on bilateral goods and services exports and imports and FDI outflows. However, the trade

and investment flow enhancing effect of cultural institutes might be conditional on the economic development level of partner countries. The effects of Confucius Institutes on Chinese exports and imports to and from a developing country such as Brazil, for example, might be different than a developed country such as the US. For example, the availability and accessibility of other sources of language acquisition, cultural recognition and educational scholarship opportunities are much limited in developing countries than developed ones and therefore cultural institutes such as the British Council can have a larger marginal effect in those markets. Furthermore, developing country markets enjoy higher growth potential than more mature economies, allowing cultural institutes to facilitate faster trade and investment growth. Therefore, we expect increasing cultural and language ties with developing countries to have stronger trade and investment boosting effects than those with more mature economies. The expectations and motivations of home countries in opening such institutes may also differ across developed and developing countries.

To test this hypothesis we divide the sample of host countries into two using the IMF's categorization of advanced economies and repeat the regression analysis for these two subsets using the benchmark specification. For brevity we only report the coefficient estimates for *Inst* but provide the rest of the results in the online Appendix. Table 8 repeats the cross-sectional analysis of Table 4 for goods and services trade and suggests significant differences between advanced host economies and the rest. Particularly, in columns (1)-(2) we find that cultural institutes have a significantly positive effect on goods exports but only to developing and not to advanced markets. On the other hand, similar to Table 4, we do not detect any effect on bilateral imports in either groups of countries (columns 3-4). With regard to services trade in columns (5)-

(8), we find that cultural institutes have a significantly positive effect on both exports and imports of services and in both groups of countries with almost identical coefficient estimates.

<Insert Table 8 Here>

Table 9 presents results for FDI flows using the cross-sectional analysis. Again, the results suggests that the significantly positive effect of *Inst* on FDI outflows are limited only with developing countries and show no evidence of such effects in advanced host economies.¹¹ The coefficient estimate almost doubles from 0.591 for advanced economies to 1.082 for developing countries and becomes significant at the 5% level. In columns (3)-(4), similar to Table 5, we do not find any effect on FDI inflows, either from advanced or developing countries.

<Insert Table 9 Here>

Next, in Tables 10 and 11 we examine the case of advanced and developing countries using the panel data analysis. Table 10, similar to Table 6, shows that *Inst* has a significantly positive effect on merchandise exports and imports of home countries. However, there are distinct differences between advanced economies and the rest. Particularly, as in Table 8, we find that the economic effect is significantly higher for developing than advanced countries. For goods exports, for example, the effect is more than eight times larger (0.555 vs. 0.069).

Regarding services trade, we find that *Inst* has a significantly positive effect on exports to developing but not to advanced economies (columns 5-6). For services imports we find a significantly positive effect for both groups of countries. However, as in goods trade, the economic effect is significantly larger for developing than advanced destination markets. For services exports it is more than 20 times larger (0.999 vs. 0.048) while for services imports it is almost four times larger (0.241 vs. 0.065). We also continue to find that *Inst* has a larger effect on exports of goods and services than on imports of goods and services.

<Insert Table 10 & 11 Here>

Table 11 shows the effects on FDI outflows and inflows to and from advanced and developing economies using the panel data analysis. Similar to Table 7 we find a significantly positive effect on FDI outflows on both groups of countries. However, as in Table 10 for goods and services trade, this effect is significantly larger for FDI outflows to developing economies. In addition, unlike in Table 7, we find that cultural institutes have a significantly positive effect on FDI inflows but only for those from developing countries (column 4).

3.4 Robustness analysis

In this section we conduct a rich battery of robustness tests to examine the sensitivity of our findings from both cross-sectional and panel data analysis to sample selection, multilateral resistance, and estimation methodology. All unreported test results are available in the online Appendix. First, to remove the effect of outliers, we excluded those observations where trade and FDI flows are below and above the one percentile thresholds. Second, to remove the effect of small states, we dropped countries with populations smaller than one million. Third, we restricted the sample to those above and below the bottom and top one percentile levels of GDP per capita. Fourth, to test the sensitivity of our results to individual home countries such as China or Germany, we dropped one-country at a time from the sample. Fifth, we supplemented the FDI data for China using the Chinese Statistical Institute statistics, which allowed us to include non-OECD investment partners of China. We continued to use the OECD data for all OECD partner countries of China.¹² Last, we replaced all missing observations in the FDI dataset with zeros given that they may indeed be zero values rather than being unavailable. After these exercises, our main results remained intact.

Next we examined any nonlinear effects of cultural institutes as there may be thresholds below or above which the effects differ. To this end, we first repeated our regressions by dropping those

country pairs where the number of cultural institutes was zero. Next, we looked at the effects of cultural institutes at the 50 percentile of the sample, which corresponds to at least one institute in a given destination in a given year. Our results again remain unchanged.

In our benchmark regressions we used country and year fixed effects to control for country specific and year specific effects. However, as pointed out by Anderson and van Wincoop (2003), bilateral trade between i and j can be affected by country specific and time varying multilateral resistance from other trade partners. To control for this issue, we repeated our benchmark regressions by including exporter-year and importer-year fixed effects. However, including these effects causes country-year specific control variables to drop from the regressors set, and also put pressure on our estimation because of the presence of a large number of dummy variables (4,800+). We report the results in Table 12 and again find very similar results to those before.

<Insert Table 12 Here>

We expect the effects of cultural institutes to be persistent over time. To test for the presence of any delayed effects, we examine the effect of cultural institutes up to 5th lag. Using lags also allows us to control for any reverse causality problem running from bilateral economic exchanges to cultural institutes. The results suggest the continuation of a significantly positive effect over each of these lags.

Next, we test the sensitivity of our results to the estimation method, heteroskedasticity and serial correlation problem. First, we repeat our panel regressions using the Prais-Winsten method with robust standard errors, which employs the generalized least-squares method and help correct for any serial correlation in the error terms. Second, we employed the feasible generalized least squares method and controlled for any possible AR(1) autocorrelation within

panels, and cross-sectional correlation and heteroskedasticity across panels. The results again support our main findings.

4. Conclusion

The use of cultural and language institutes for economic and political benefits is a long-standing practice among developed countries. After all, there is a reason why most colonies continued to use the language of the colonial centers even centuries after the end of colonial rule. In some cases this came through the destruction and forced assimilation of native languages, as in North and South America, Australia and New Zealand. In some others, the newly independent states chose to continue using the colonial languages for economic and political benefits, as in Tunisia, India or in most West and South Africa. In addition, in most countries, teaching a foreign language is a major part of school curriculums, partly conditioned by the existing or expected economic benefits. In Turkey, for example, the teaching of French and German, which was common in the early 20th century, was later replaced by the teaching of English as the economic and political priorities of the country changed. The same is true for the USA where teaching Spanish and Mandarin has become more common than other languages as the economic and political importance of Latin America and China for the US has changed in the 21st century.

In this paper we examined the question of whether or not cultural and language institutes such as the British Council or Confucius Institute affect bilateral economic exchanges. The empirical analysis, using the most comprehensive dataset available, provides an affirmative answer. We find that cultural institutes have an economically and statistically significant and robust positive effect on bilateral exports and imports of goods and services, and on FDI outflows. We also show that cultural institutes have a stronger effect on: services trade than goods trade, goods exports than goods imports; services exports than services imports; and FDI

outflows than inflows. The strongest effect appears to be for services exports followed by services imports while the weakest (and insignificant) effect is on FDI inflows. We also find that the positive effects are significantly stronger for developed than developing host countries.

Overall the results suggest that developed and emerging economies use these institutes as a part of their soft power, allowing them to increase market penetration, trade expansion and new investment opportunities. Our findings also complement recent studies that highlight the importance of cultural diffusion for the expansion of bilateral trade patterns. Future research should explore the determinants of these cultural institutes and examine any differences in the motivations and expectations of home countries. We also expect new research to explain the differential responses of goods and services trade and FDI flows to cultural institutes.

Endnotes

¹ Using meta-analysis on 81 articles, Egger and Lassmann (2012) show that the effect of common language on trade is positive and significant, increasing trade on average by 44%. Ku and Zussman (2010) also show that the level of English proficiency, measured by TOEFL scores has a positive effect on trade, suggesting that language acquisition can help negate historically determined fixed language barriers to trade.

² Ginsburgh et al. (2017) find that trade linkages increase the demand for foreign language acquisition.

³ British Council (2015) reports that people who attended British Council's cultural and language activities trust the UK on average 24 percentage points more than other countries.

⁴ The British Council, for example, states that it aims at promoting equality and human rights while fighting against discrimination (British Council, 2015).

⁵ The annual report of British Council (2015) indicated that they helped establish networks with emerging markets and facilitated the export of 1.3 billions pounds worth direct higher education exports and indirect contribution to higher education of 5.5 billion pounds in 2015.

⁶ The Confucius Institute is also referred to as Hanban, named after the parent organization headquartered in Beijing.

⁷ We also contacted these institutes through e-mail but did not receive any response regarding their establishment dates.

⁸ *Religion* is measured as the products of population shares with the same religion, including Buddhist, Christian, Hindu, Jewish and Muslim, atheists, which are further broken down to Roman Catholic, Catholic Orthodox, Protestants, Shia and Sunni (Head and Mayer,(2013).

⁹ For example, compare the effect of language and cultural affinity on demand for tourism or financial services compared to demand for crude oil or smart phones.

¹⁰ This is a similar finding to that of Lien et al. (2012) where they report stronger effects on FDI outflows than exports for the case of Confucius Institutes.

¹¹ Lien et al. (2012) report a similar positive effect of Confucius Institutes on Chinese exports and FDI outflows to developing but not to developed countries.

¹² We should note that there are significant differences between Chinese statistics and the OECD data.

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Table 1: Summary Statistics: Cross section data

	Obs	Mean	Median	Std	Max	Min
<i>lnExports_{ij}</i>	1,480	18.627	18.862	3.170	26.850	3.510
<i>lnImports_{ij}</i>	1,452	17.898	18.286	3.824	25.882	3.071
<i>lnServices_Ex_{ij}</i>	611	5.152	4.994	2.343	11.303	0.095
<i>lnServices_Im_{ij}</i>	471	5.370	5.227	2.376	10.902	0.095
<i>lnFDI_Out_{ij}</i>	795	1.402	0.086	3.701	10.684	-9.270
<i>lnFDI_In_{ij}</i>	782	0.940	0	3.267	10.318	-10.498
<i>Inst_{ij}</i>	1,480	0.832	0	3.176	99	0
<i>Inst_positive_{ij}</i>	548	2.248	1	4.907	99	0
<i>lnGDP_j</i>	1,285	24.525	24.437	2.164	30.521	18.826
<i>lnGDP_i</i>	1,480	28.293	28.682	1.146	30.035	26.017
<i>lnGDPPC_j</i>	1,369	8.547	8.538	1.442	11.510	5.628
<i>lnGDPPC_i</i>	1,480	10.051	10.449	0.626	10.690	8.996
<i>lnDistance_{ij}</i>	1,480	8.628	8.812	0.784	9.883	5.156
<i>lnAreap_{ij}</i>	1,480	24.609	24.906	2.877	32.728	15.404
<i>Colony_{ij}</i>	1,480	0.097	0	0.296	1	0
<i>Border_{ij}</i>	1,480	0.028	0	0.164	1	0
<i>Language_{ij}</i>	1,480	0.083	0	0.276	1	0
<i>Religion_{ij}</i>	1,480	0.162	0.022	0.261	0.991	0
<i>Legal_{ij}</i>	1,480	0.345	0	0.476	1	0
<i>PTA_{ij}</i>	1,480	0.319	0	0.466	1	0
<i>EU_{ij}</i>	1,480	0.051	0	0.221	1	0

Notes: All data are for 2015. Home countries are China, France, Germany, Spain, Japan, Portugal, Turkey, and U.K. *Obs.* is number of observations, *mean* and *median* are sample mean and median values. *Std* is the standard deviation, *max* and *min* are the maximum and minimum values, respectively. *ln* is natural logs and all values are in current dollar prices. *Exports* and *Imports* are exports and imports of country *i* to (from) country *j* in 2015. *Services_Ex* and *Services-Im*, are service exports and imports of country *i* to (from) country *j*. *FDI_Out* and *FDI_In* are FDI outflows from and inflows to country *i* to (from) country *j*. *Inst* is total number of cultural institutes by home country *i* in host country *j*. *Inst_positive* is the total number of non-zero cultural institutes by home country *i* in host country *j*. *GDP_i* and *GDP_j* are the (log) GDP of country *i* and *j*; *GDPPC_i* and *GDPPC_j* are the GDP per capita of country *i* and *j*; *Distance* is

(km) distance between i and j . $Areap$ is (log product) area in square km of i and j . $Language_{ij}$, $Border_{ij}$, $Colony_{ij}$, $Religion_{ij}$ and $Legal_{ij}$ are equal to one if i and j share a common: language, common border, colonial past, religion or legal code, respectively. PTA_{ijt} is a dummy variable equaling one if i and j have a PTA; and EU_{ijt} is a dummy variable equaling 1 if i and j are both in EU members.

Table 2: Summary Statistics: Panel Data

	Obs	Mean	Median	Std	Max	Min
<i>lnExports_{ijt}</i>	22,309	17.836	17.927	3.317	26.850	2.665
<i>lnImports_{ijt}</i>	21,364	17.521	17.700	3.683	25.991	2.197
<i>lnServices_Ex_{ijt}</i>	3,410	5.653	5.882	2.436	10.970	-2.096
<i>lnServices_Im_{ijt}</i>	4,837	5.117	5.370	2.460	10.646	-4.711
<i>lnFDI_Out_{ijt}</i>	9,031	1.906	1.281	3.548	10.836	-10.278
<i>lnFDI_In_{ijt}</i>	8,593	1.094	0	3.253	11.375	-10.331
<i>Inst_{ijt}</i>	22,309	0.399	0	1.891	99	0
<i>Inst_positive_{ijt}</i>	4,424	2.011	1	3.846	99	1
<i>lnGDP_{jt}</i>	22,309	23.533	23.288	2.407	30.521	15.990
<i>lnGDP_{it}</i>	22,309	27.904	28.199	1.288	30.035	25.089
<i>lnGDPPC_{jt}</i>	22,309	8.012	7.995	1.631	11.674	4.187
<i>lnGDPPC_{it}</i>	22,309	9.573	10.055	1.271	10.792	5.765
<i>lnDistance_{ij}</i>	22,309	8.738	8.911	0.722	9.883	5.156
<i>lnAreap_{ij}</i>	22,309	24.765	24.985	2.951	32.728	14.692
<i>Colony_{ij}</i>	22,309	0.040	0	0.195	1	0
<i>Border_{ij}</i>	22,309	0.027	0	0.161	1	0
<i>Language_{ij}</i>	22,309	0.037	0	0.189	1	0
<i>Religion_{ij}</i>	22,183	0.154	0.009	0.257	0.943	0
<i>Legal_{ij}</i>	22,309	0.270	0	0.444	1	0
<i>PTA_{ijt}</i>	22,309	0.160	0	0.367	1	0
<i>EU_{ijt}</i>	22,309	0.059	0	0.235	1	0

Notes: Data refer to observations used in the panel data analysis for the period of 1990-2015 for five countries, which are China, Germany, Spain, Japan, and Portugal. For other variable definitions refer to Table 1.

Table 3: Regional Distribution of Cultural Institutes

Host Region\ Home country	China	Germany	France	Spain	Japan	Portugal	Turkey	U.K.
East Asia & Pacific	78	25	22	8	8	8	2	25
Europe & Central Asia	172	60	97	42	7	65	29	67
Latin America & Caribbean	35	15	7	8	2	12	0	15
MENA	13	17	42	9	1	1	8	28
North America	110	9	2	6	3	3	1	5
South Asia	8	10	2	1	2	0	1	21
Sub Saharan Africa	37	15	35	1	0	32	2	32

Notes: Data refer to total number of cultural institutes by each home country in respective geographical region in 2015. MENA refers to the Middle East and North Africa.

Table 4: Cultural Institutes and trade in goods and services- cross section analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Exports	Exports	Imports	Imports	ServicesEx	ServicesEx	ServicesIm	ServicesIm
<i>lnInst_{ij}</i>	0.585*** (0.103)	0.187** (0.077)	0.407*** (0.109)	0.004 (0.096)	0.659*** (0.116)	0.280*** (0.077)	0.580*** (0.118)	0.307*** (0.093)
<i>lnDistance_{ij}</i>		-1.194*** (0.094)		-1.174*** (0.125)		-0.736*** (0.103)		-0.614*** (0.102)
<i>lnAreap_{ij}</i>		1.484*** (0.059)		1.388*** (0.105)		0.469*** (0.101)		0.732*** (0.139)
<i>Colony_{ij}</i>		0.661*** (0.135)		0.658*** (0.187)		0.476*** (0.124)		0.454** (0.212)
<i>Border_{ij}</i>		-0.100 (0.210)		-0.457 (0.283)		-0.442** (0.175)		-0.425** (0.212)
<i>Language_{ij}</i>		0.524*** (0.161)		0.483** (0.219)		0.668*** (0.140)		0.293 (0.210)
<i>Religion_{ij}</i>		0.594*** (0.134)		0.349 (0.262)		0.666** (0.261)		1.286*** (0.337)
<i>Legal_{ij}</i>		0.319*** (0.074)		0.276** (0.120)		0.265*** (0.086)		0.201* (0.109)
<i>PTA_{ij}</i>	1.015*** (0.111)	0.085 (0.115)	1.372*** (0.168)	0.518*** (0.189)	0.698*** (0.232)	0.105 (0.234)	1.092*** (0.252)	0.495* (0.267)
<i>EU_{ij}</i>	1.107*** (0.132)	0.877*** (0.128)	0.684*** (0.171)	0.536*** (0.164)	0.493** (0.214)	0.271* (0.161)	-0.372 (0.259)	-0.339* (0.203)
<i>Constant</i>	20.329*** (0.113)	-9.354*** (1.398)	18.914*** (0.180)	-8.303*** (2.669)	3.653*** (0.234)	-2.147 (3.020)	4.324*** (0.265)	-10.155** (3.960)
Obs	1,501	1,480	1,475	1,454	633	625	482	478
R-squared	0.862	0.905	0.809	0.832	0.889	0.929	0.904	0.936
Host FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The dependent variables are log levels of goods exports, imports, service exports and service imports in 2015. Home countries are China, France, Germany, Spain, Japan, Portugal, Turkey, and U.K. *, **, and *** refer to significance at 10%, 5% and 1% levels.

Host FE and Home FE are host and home country fixed effects. Robust standard errors are in parenthesis. For other variables refer to Table 1.

Table 5: Cultural institutes and FDI flows-cross section analysis

	(1)	(2)	(3)	(4)
	FDI Out	FDI Out	FDI In	FDI In
<i>lnInst_{ij}</i>	1.124** (0.436)	0.976** (0.475)	0.258 (0.373)	-0.018 (0.349)
<i>lnDistance_{ij}</i>		-0.323 (0.364)		-0.490 (0.308)
<i>lnAreap_{ij}</i>		0.624 (0.457)		0.963*** (0.352)
<i>Colony_{ij}</i>		0.685 (0.621)		0.561 (0.479)
<i>Border_{ij}</i>		0.048 (1.402)		1.217 (1.273)
<i>Language_{ij}</i>		0.900 (0.945)		1.124 (0.956)
<i>Religion_{ij}</i>		0.563 (0.560)		0.524 (0.500)
<i>Legal_{ij}</i>		-0.821* (0.420)		0.140 (0.385)
<i>PTA_{ij}</i>	0.530 (0.455)	0.179 (0.529)	1.218*** (0.320)	0.754* (0.407)
<i>EU_{ij}</i>	0.271 (1.169)	0.310 (1.264)	-0.754 (1.138)	-1.367 (1.100)
<i>Constant</i>	1.886* (1.109)	-11.823 (11.043)	2.717*** (0.897)	-18.855** (8.477)
Observations	837	817	832	809
R-squared	0.300	0.311	0.421	0.451
Host FE	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes

Notes: The dependent variables are FDI outflows from i to j in columns (1)-(2) and FDI inflows to i from j in columns (3)-(4) in 2015. The sample home countries are China, France, Germany, Spain, Japan, Portugal, Turkey, and U.K. *, **, and *** refer to significance at 10%, 5% and 1% levels. Host FE and Home FE are host and home country fixed effects. Robust standard errors are in parenthesis. For other variable definitions refer to Tables 1 and 4.

Table 6: Cultural institutes and trade in goods and services-panel analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Exports	Exports	Imports	Imports	ServicesEx	ServicesEx	ServicesIm	ServicesIm
<i>lnInst_{ijt}</i>	0.632*** (0.033)	0.281*** (0.024)	0.562*** (0.033)	0.196*** (0.030)	0.640*** (0.050)	0.447*** (0.036)	0.306*** (0.038)	0.171*** (0.030)
<i>lnDistance_{ij}</i>		-1.206*** (0.020)		-1.382*** (0.031)		-0.819*** (0.033)		-0.752*** (0.033)
<i>lnAreap_{ij}</i>		-0.041 (0.288)		-0.520 (0.483)		-0.558 (0.516)		0.310 (0.528)
<i>Colony_{ij}</i>		0.969*** (0.063)		0.854*** (0.089)		0.655*** (0.083)		1.005*** (0.082)
<i>Border_{ij}</i>		-0.322*** (0.062)		-0.393*** (0.073)		-0.954*** (0.092)		-0.380*** (0.099)
<i>Language_{ij}</i>		0.795*** (0.068)		0.194** (0.086)		0.648*** (0.086)		-0.059 (0.094)
<i>Religion_{ij}</i>		-0.097* (0.050)		0.123 (0.078)		0.430*** (0.095)		0.856*** (0.101)
<i>Legal_{ij}</i>		0.270*** (0.023)		0.250*** (0.033)		0.529*** (0.036)		0.190*** (0.035)
<i>PTA_{ijt}</i>	0.927*** (0.032)	0.253*** (0.032)	0.888*** (0.048)	0.094* (0.050)	0.837*** (0.059)	0.322*** (0.050)	1.117*** (0.063)	0.473*** (0.049)
<i>EU_{ijt}</i>	0.820*** (0.039)	0.340*** (0.037)	0.680*** (0.053)	0.085* (0.048)	0.835*** (0.077)	0.391*** (0.061)	0.586*** (0.071)	0.177*** (0.059)
<i>Constant</i>	-28.028*** (6.946)	-23.469*** (2.666)	-35.051*** (10.286)	-17.284*** (4.664)	-42.129*** (14.290)	0.743 (5.932)	-1.068 (13.211)	-25.291*** (6.501)
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Host FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	22,309	22,183	21,557	21,444	4,880	4,877	3,419	3,419
R-squared	0.865	0.899	0.773	0.801	0.867	0.910	0.891	0.927

Notes: The sample includes China, Germany, Spain, Japan, and Portugal. *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. *Income* refers to unreported variables of current GDP and GDP per capita of home and host countries. For other variable definitions refer to Tables 1 and 4.

Table 7: Cultural institutes and FDI flows-panel analysis

	(1)	(2)	(3)	(4)
	FDI Out	FDI Out	FDI In	FDI In
<i>lnInst_{ijt}</i>	0.568*** (0.101)	0.308*** (0.102)	0.141 (0.115)	-0.009 (0.120)
<i>lnDistance_{ij}</i>		-0.729*** (0.085)		-0.286*** (0.094)
<i>lnAreap_{ij}</i>		-2.002 (2.599)		-3.625 (2.782)
<i>Colony_{ij}</i>		0.555** (0.261)		0.186 (0.310)
<i>Border_{ij}</i>		-0.435 (0.380)		0.504 (0.403)
<i>Language_{ij}</i>		1.089*** (0.355)		0.551 (0.398)
<i>Religion_{ij}</i>		0.280 (0.260)		0.120 (0.283)
<i>Legal_{ij}</i>		0.193 (0.123)		0.535*** (0.127)
<i>PTA_{ijt}</i>	1.120*** (0.124)	0.620*** (0.135)	0.906*** (0.116)	0.690*** (0.128)
<i>EU_{ijt}</i>	-0.162 (0.195)	-0.462** (0.197)	-0.076 (0.199)	-0.300 (0.200)
<i>Constant</i>	-118.749** (51.067)	-20.731 (23.071)	-113.343** (55.416)	-14.464 (23.849)
Income	Yes	Yes	Yes	Yes
Host FE	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	9,253	9,197	8,798	8,746
R-squared	0.286	0.302	0.226	0.236

Notes: The sample includes China, Germany, Spain, Japan, and Portugal. *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. For other variable definitions refer to Tables 1, 4 and 7.

Table 8: Cultural Institutes and trade in goods and services- cross section: Country heterogeneity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Exports	Exports	Imports	Imports	ServicesEx	ServicesEx	ServicesIm	ServicesIm
	Advanced	Developing	Advanced	Developing	Advanced	Developing	Advanced	Developing
<i>lnInst_{ij}</i>	0.075	0.237**	0.076	-0.008	0.230**	0.264**	0.295***	0.296*
	(0.081)	(0.098)	(0.110)	(0.126)	(0.094)	(0.127)	(0.108)	(0.156)
Gravity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Host FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	267	1,213	267	1,187	194	431	187	291
R-squared	0.937	0.889	0.926	0.788	0.953	0.893	0.950	0.906

Notes: *Advanced* refers to subsample of destination countries that are classified as advanced economies by the IMF. *Developing* refers to all other destination countries. *Gravity* refers to the same set of gravity controls as in previous tables. *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. For other variable definitions refer to Tables 1 and 4.

Table 9: Cultural institutes and FDI flows-cross section analysis: Country heterogeneity

	(1)	(2)	(3)	(4)
	FDI_Out	FDI_Out	FDI_In	FDI_In
	Advanced	Developing	Advanced	Developing
<i>lnInst_{ij}</i>	0.591 (0.839)	1.082** (0.505)	-0.213 (0.632)	0.305 (0.365)
Gravity	Yes	Yes	Yes	Yes
Observations	196	621	196	613
R-squared	0.311	0.367	0.444	0.457
Host FE	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes

Notes: The dependent variables are FDI inflows to home countries in columns (1)-(2) and FDI outflows in columns (3)-(4). *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. For other variable definitions refer to Tables 1, 4 and 8.

Table 10: Cultural institutes and trade in goods and services-panel analysis: Country heterogeneity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Exports	Exports	Imports	Imports	ServicesEx	ServicesEx	ServicesIm	ServicesIm
	Advanced	Developing	Advanced	Developing	Advanced	Developing	Advanced	Developing
<i>lnInst_{ijt}</i>	0.069*** (0.022)	0.555*** (0.033)	0.085*** (0.028)	0.291*** (0.041)	0.048 (0.040)	0.999*** (0.067)	0.065* (0.036)	0.241*** (0.042)
Gravity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Host FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	4,104	18,079	4,090	17,354	1,944	2,594	2,061	1,358
R-squared	0.943	0.874	0.926	0.743	0.928	0.733	0.938	0.930

Notes: *Income* refers to unreported variables of current GDP and GDP per capita of home and host countries. *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. For other variable definitions refer to Tables 1, 4 and 8.

Table 11: Cultural institutes and FDI flows-panel analysis

	(1)	(2)	(3)	(4)
	FDI_Out	FDI_Out	FDI_In	FDI_In
	Advanced	Developing	Advanced	Developing
<i>lnInst_{ijt}</i>	0.373** (0.169)	0.571*** (0.127)	0.096 (0.215)	0.228** (0.102)
Gravity	Yes	Yes	Yes	Yes
Income	Yes	Yes	Yes	Yes
Host FE	Yes	Yes	Yes	Yes
Home FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	3,193	6,004	3,219	5,527
R-squared	0.233	0.375	0.206	0.169

Notes: *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. For other variable definitions refer to Table 1, 4 and 8.

Table 12: Panel analysis with country-time fixed effects

	(1)	(2)	(3)	(4)	(5)	(6)
	Exports	Imports	ServicesEx	ServicesIm	FDI_Out	FDI_In
<i>lnInst_{ijt}</i>	0.290*** (0.030)	0.156*** (0.035)	0.525*** (0.050)	0.210*** (0.045)	0.468*** (0.156)	0.124 (0.180)
<i>lnDistance_{ij}</i>	-1.146*** (0.021)	-1.457*** (0.032)	-0.820*** (0.049)	-0.590*** (0.048)	-0.705*** (0.123)	-0.444*** (0.149)
<i>lnAreap_{ij}</i>	0.647*** (0.033)	0.218*** (0.052)	0.224 (0.173)	0.397*** (0.059)	-0.319 (0.246)	-0.672*** (0.224)
<i>Colony_{ij}</i>	0.875*** (0.070)	0.757*** (0.090)	0.585*** (0.111)	1.064*** (0.108)	0.419 (0.333)	0.008 (0.412)
<i>Border_{ij}</i>	-0.136** (0.066)	-0.346*** (0.076)	-0.977*** (0.117)	-0.255** (0.127)	-0.053 (0.438)	0.575 (0.490)
<i>Language_{ij}</i>	0.880*** (0.077)	0.255*** (0.087)	0.651*** (0.115)	-0.041 (0.125)	1.052** (0.450)	0.578 (0.541)
<i>Religion_{ij}</i>	-0.018 (0.051)	0.135* (0.076)	0.385*** (0.116)	0.927*** (0.121)	0.166 (0.352)	0.077 (0.398)
<i>Legal_{ij}</i>	0.309*** (0.022)	0.255*** (0.033)	0.532*** (0.045)	0.228*** (0.043)	0.238 (0.159)	0.503*** (0.172)
<i>PTA_{ijt}</i>	0.348*** (0.040)	0.100 (0.065)	0.709*** (0.105)	1.195*** (0.106)	0.401* (0.243)	0.377 (0.267)
<i>EU_{ijt}</i>	0.409*** (0.048)	-0.112* (0.063)	-0.327*** (0.115)	-0.328*** (0.125)	-0.408 (0.331)	-0.803** (0.376)
<i>Constant</i>	9.605*** (0.782)	22.772*** (1.242)	3.800 (4.135)	-2.073 (1.493)	12.811** (5.883)	19.455*** (5.477)
Host-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Home-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	23,319	22,478	5,003	3,446	9,651	9,190
R-squared	0.915	0.837	0.951	0.953	0.555	0.504

*Notes: Host-year and Home-year FE refer to home country-year and host country-year fixed effects. *, **, and *** refer to significance at 10%, 5% and 1% levels. Robust standard errors are in parenthesis. For other variable definitions refer to Table 1.*