Can Culture Lead to Export? Empirical Data on the Belt and Road Initiative

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Abstract: The B&R Initiative is a modernized and specific manifestation of China's "going global" development strategy. It undertakes the historic mission of promoting communication and exchange between cultures and nations, but also has a positive role in the development of international economy and trade relations. As a messenger of the essence of Chinese culture, Confucius Institutes have a positive impact on the development of Asian and world civilizations. Using Difference-in-Difference estimation methods to study the statistical data from the countries along the B&R routes, this paper examines the relationship between cultural and commodity outputs and comes to the following conclusions: Cultural output is an important factor in increasing commodity exports; Confucius Institutes help increase China's exports to the countries along the B&R routes; and the growth in cultural exports shows regional differences, hysteresis, and fluctuations. As China's cultural outputs are still at an immature stage, their promotional effects on exports are unstable. In the future, China should further standardize its management and operational systems and accelerate the Confucius Institutes' content-based development to enhance the effects of cultural outputs in increasing exports, boosting China's soft power.

Keywords: Confucius Institute; Export; B&R Initiative; Difference-in-Difference

1. Raising the Question

The development strategy of "bringing in" put forward by China at the beginning of its reform and opening-up opened new paths for fast economic

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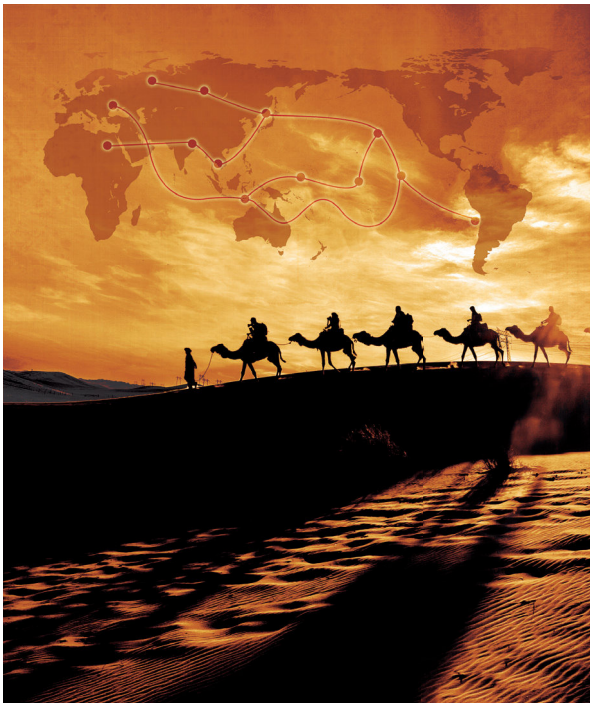
development through import trade, attracting FDI and introducing advanced foreign technology and management experiences. The development strategy of "going global" in 2000 is an important embodiment of the upgraded connotation of opening-up and has become a new force driving China's sustained and steady economic growth in the new era. As a modernized and specific manifestation of the "going global" development strategy, the B&R Initiative has received close attention and widespread recognition from the international community since it was first proposed, and has injected new vitality into the leap-forward development of China's export trade. Stemming from the ancient "Silk Road," the strategic concept of the "B&R" (namely the Silk Road Economic Belt and the 21st Century Maritime Silk Road) was officially put forward by China in October 2013. The aim of the initiative is to strengthen the people-to-people exchanges among Asian, European and African countries and promote the economy and trade cooperation between the countries along the routes and regional economic growth. Currently, the 65 countries along the B&R routes account for 63 percent of the global population and 29 percent of the global economy. From ancient times, China has maintained friendly cultural exchanges and good economy and trade cooperation with the countries along the B&R routes. Today, these countries are very important trading partners of our country. With growing economic strength, commodity exports in our country have developed to a comparatively high level. In 2014, the volume of export trade amounted to 14,390 billion RMB, and China continues to be the world's largest commodity trading power. Cultural exports have been put on the agenda and have enjoyed fast development. As a concentrated expression of China's cultural output, Confucius Institutes① have developed rapidly since the first one was established in 2004. Currently, the Confucius Institutes in 126 countries (territories) across the five continents of the world have become an important channel to spread Chinese civilization and have greatly improved China's international influence. The B&R Initiative is an important platform for China's cultural communications and exchanges in the new era. By the end of 2014, China had already established 174 Confucius Institutes in the countries along the B&R routes (See Fig. 1). They have made significant contributions to the communications and exchanges of ethnic cultures between China and countries in Asia, Europe and Africa. The B&R routes cover important areas that are also highly



Stemming from the ancient "Silk Road," the strategic concept of the "B&R" was officially put forward by China in October 2013.

① Confucius Institutes include Confucius Institutes and Confucius Classrooms, the same below.

Fig.1 Map of 174 Confucius Institutes in 65 Countries along the B&R routes in 2014

potential trading partners of China. As important contents of "going global," are there any inner connections between cultural and commodity outputs? Has the development of the Confucius Institutes expanded China's exports to the countries along the B&R routes? These are important questions that should be answered in the new era, and are also topics well worth studying.

Through analyzing the development of the Confucius Institutes in the countries along the B&R routes, this paper attempts to examine the relationships between commodity outputs and cultural outputs and conduct empirical tests on the effects of export growth of China's cultural outputs based on the empirical data of the B&R Initiative, so as to provide scientific theory basis and valuable critical thinking on the implementation of the strategic concept of the B&R, and accelerate China's transformation from a trading nation into a trading power.

2. Literature Review

Export trade is the result of several factors working together. Available literature primarily focus on the analysis of the influences on export trade by economic, political, geographical distance and other traditional factors, and few articles examine the influence of cultural factors on export trade from an economic perspective. Through mining the few relevant domestic and foreign articles available, scholars mainly analyzed culture's influence on export trade through cultural similarities and cultural differences. Straubhaar (1991) described the cultural similarity between countries with the concept of cultural proximity: Believing that it is easier for countries with cultural proximity sharing significant similarities in languages, religious beliefs, manners and customs to engage in bilateral or multilateral trade, especially trade in cultural products. The greater the cultural proximity between countries, the bigger the trade volume will be (Zang Xin, Lin Zhu, Shao Jun, 2012). Sharing common language may facilitate the development of trade in cultural products, and common colonial experience will have a positive impact on the imports and exports of cultural heritage products and visual art products (Disdior, 2007). Bedassa & Roger (2010) arrive at a similar conclusion when examining the export trade of the US using the extended gravity model

of trade. Other scholars have analyzed export trade from the perspective of cultural differences. Hoskins & Mirus (1988) described cultural differences with the concept of cultural discount: When the culture of one country spreads to other countries, its attraction will decrease due to differences in religious beliefs, behavioral patterns and cultural styles, resulting in a phenomenon called cultural discount. As cultural discount may reduce the utility level of the consumers in importing countries and have a negative impact on the aggregate demand for goods, it is detrimental to the development of export trade (Wang Hongtao, 2014). There are negative correlations between cultural distance and export trade (Chang & Lee, 2003; Tadesse & White, 2008; Chen Xiaoqing, Zhan Zhengmao, 2008). In general, cultural distance has a negative effect on export trade (Xu Chensheng, Cheng Juan, 2013). However, other scholars hold that cultural differences may add to the varieties of products, expand the scope of choice for consumers and has a positive effect on export trade (Lankhuizen, 2011; Qu Ruxiao, Han Lili, 2010).

The strategic concept of the B&R has gained high attention and widespread recognition among scholars since it was first put forward, and researchers have studied the B&R initiative from different perspectives. Some scholars have analyzed it from the perspective of cultural communication. Cai Wu (2014) holds that the construction of the B&R should make culture development priority, and efforts should be made to promote regional economic cooperation and development through cultural communications and exchanges with the countries along the B&R routes. Wu Minghai (2015) believes that the spirit of Confucius is essentially continuous with the spirit of the Silk Road. Establishing Confucius Institutes in the countries along the B&R routes may not only maintain the ecological balance of diversified cultures, but also facilitate cultural communication and exchanges among nations. Some scholars have studied from the perspective of public diplomacy, while others have made an analysis from the angle of regional economic cooperation. Liu Sisi (2014) analyzed the B&R initiative from the perspective of cross-border sub-regional cooperation, believing that due to such factors as geographical contiguity and strong complementarity of economic development, the cross-border cooperation between countries in Asia and Europe may contribute to the common development of regional economies. Shen Xianjie and Xiao Jincheng (2014) analyzed the strategic significance of the B&R Initiative on multilateral and regional trade cooperation from the perspective of international regional economic cooperation. Taking ceramics as an example of the goods traded along the ancient Silk Road, Mao Xiaoming, Yin Jidong and Wang Yushuai (2015) examined the opportunities brought to Jiangxi Province's export trade by the B&R initiative, believing that, as the starting point of the Maritime Silk Road, Jiangxi Province enjoys unique geographical advantages in connecting the east with the west and linking the south with the north.

Existing research findings indicate that most scholars have examined export trade from the perspective of traditional elements, but few have studied the impacts of cultural elements on export trade. The limited research on the relationships between cultures and exports have examined only the two most basic aspects: Cultural similarities and cultural differences. As the B&R initiative was put forward not long ago, the research in this respect is still confined to culture and national strategic development, and no one has yet examined the relationships between cultural outputs and export trade in the countries along the B&R routes from the perspective of the Confucius Institutes. The main contribution of this paper is, using the Confucius Institutes as the proxy variable of China's

cultural outputs, it searches for matching objects for countries in the treatment group through the matching methods of Mahalanobis Matching and the Nearest Neighbor, conducts empirical examination of the relationships between the cultures and exports of the countries along the B&R routes with difference-in-difference models, and tests the regional difference, hysteresis and robustness of cultural outputs in promoting export growth. The research findings may provide scientific theory basis and important decision reference for the implementation of the B&R initiative, and has important practical significance for the "going global" of Chinese enterprises, expanding Chinese culture's international influence and improving China's national soft power.

3. Models, Variables and Data

3.1 Measurement Models

Scholars have generally used the Difference-in-Difference Method to evaluate policy effects. China's establishment of Confucius Institutes in the countries along the B&R routes is like a social experiment. Through examining the changes in the volumes of export trade before and after the establishment of the Confucius Institutes, we may evaluate the effects of cultural outputs. There are mainly 65 countries along the B&R routes. The sample countries may be divided into two groups: The treatment group (countries with Confucius Institutes) and the control group (countries without Confucius Institutes). To conduct lateral contrast, we have established the binary dummy variable of CI_i (Confucius Institute). If there is a Confucius Institute in country i, the value of the variable will be 1, or the value will be 0. To conduct vertical contrast, we have established the time dummy variable TD_t. If a Confucius Institute has been established, its value will be 1, or the value will be 0. The change in the volume of export trade of a country with a Confucius Institute is expressed in $\triangle EXit^1$, and the change in the volume of export trade of the country in the same period when the Confucius Institute was not yet established is expressed in $\triangle EXit^0$. The actual influence of the Confucius Institute on export trade flow may be expressed in the following formula:

$$\lambda=E(\lambda_i|CI_i=1)=E(\Delta EX_{it}^{1}|CI_i=1)-E(\Delta EX_{it}^{0}|CI_i=1) \quad (1)$$

As $E(\Delta EX_{it}^{0}|CIi=1)$ in formula (1) indicates the change in export trade flow of a country with a Confucius Institute in the same period when the Confucius Institute was not established, so this variable is unobservable. Rubin (1980) uses Mahalanobis Matching to match countries in the treatment group with countries in the control group, and the calculation formula of Mahalanobis distance D is:

$$D(i,j)=(U_i-V_j)^T \bullet C^{-1} \bullet (U_i-V_j) \quad (2)$$

In this formula, U_i and V_i respectively stand for the matching variable values of country i of the treatment group and country j of the control group, and C stands for the covariance matrix of matching variables. When D is minimal, it means the country in the treatment group has found its best matching object among the countries of the control group, and the observable export trade variation $E(\Delta EX_{it}^{0}|CI_i=0)$ of the country in the control group matched through the Mahalanobis Matching may be used to replace the unobservable $E(\Delta EX_{it}^{0}|CI_i=1)$. Therefore, formula (1) may be transformed into:

$$\lambda =E(\lambda_i|CI_i=1)=E(\Delta EX_{it}^{1}|CI_i=1)-E(\Delta EX_{it}^{0}|CI_i=0) \quad (3)$$

The expression form of the measurement model in formula (3) is:

$$EX_{it}=\alpha_0+\alpha_1 \bullet CI+\alpha_2 \bullet TD+\lambda \bullet CI \bullet TD+\varepsilon_{it} \quad (4)$$

If the λ in formula (4) is greater than 0, it means the Confucius Institute has expanded China's exports to the country along the R&B routes; if the λ is less than 0, it means the Confucius Institute has a negative influence on China's exports to the country along the R&B routes; if the λ is equal to 0, it means the Confucius Institute has no influence on China's exports to the country along the R&B routes. Export trade is the result of many factors working together. To improve the accuracy of the regression result, other factors that may influence exports have been added as control variables X which include: China's Gross Domestic Product(CGDP), the importing country's Gross Domestic Product (GDP), political stability (PS), economic freedom (EF), legal perfection (LP), whether it is a bordering country (B), and whether it belongs to the circle of Confucian culture (RJ). The final Difference-in-Difference model used in this paper is:

$$EX_{it}=\alpha_0+\alpha_1 \bullet CI+\alpha_2 \bullet TD+\lambda \bullet CI \bullet TD+\beta \bullet X_t+v_j+v_k+\varepsilon_{it} \quad (5)$$

In this formula, v_j stands for the country-based effect, v_k stands for the time-based effect, ε_{it} stands for the random disturbance term.

3.2 Sources of Variables and Data

This paper examines the influence of cultural outputs on export trade taking countries along the B&R routes as examples. Therefore, the dependent variable is export trade flow (EX) which is expressed through the annual volume of exports from China to the sample country. The data came from the *Database of United Nations Statistics Division*. The core explanatory variable is cultural output (CI), the Confucius Institutes are the proxy variables of China's cultural output, and relevant data are collected from the Chinese Language Council International (*Hanban* for short) and the conference documents of the Confucius Institute over the years. The countries along the B&R routes mainly include 65 countries.① China has established 174 Confucius Institutes in 51 of them.② In 2004, there were only two Confucius Institutes in the countries along the B&R routes. In 2014, that number increased to 174. The Confucius Institutes have experienced gradual development in the countries along the B&R routes. That is to say, some countries have maintained reformative status since 2004, reforms started in some countries after 2004, and the 14 countries without Confucius Institutes have not carried out reforms and are thus like quasi natural experiments. For the purpose of accuracy, we have set up the explanatory variables for the Confucius Institutes in the current year (CID) and Confucius Institute in the nth year (CIN). The value of the variable of the Confucius Institute in the current year is 1, or the value is 0; the value of Confucius Institute in the nth year is 1 in the nth year after the establishment of the Confucius Institute in the country, or the value is 0.

According to the principle of data availability and the need to analyze the problems, the period analyzed in this paper was confined to the period from 1998 to 2014. Please refer to Table 1 for the descriptive statistics on the variables.

① 65 sample countries include: China, Mongolia and 10 ASEAN countries (Singapore, Malaysia, Indonesia, Myanmar, Thailand, Laos, Cambodia, Vietnam, Brunei and the Philippines) from East Asia, 18 countries from West Asia (Iran, Iraq, Turkey, Syria, Jordan, Lebanon, Israel, Palestine, Saudi Arabia, Yemen, Oman, UAE, Qatar, Kuwait, Bahrain, Greece, Cyprus and Egypt), 8 countries from South Asia (India, Pakistan, Bangladesh, Afghanistan, Sri Lanka, Maldives, Nepal and Bhutan), 5 countries from Central Asia (Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan and Kyrgyzstan), 7 countries from the Commonwealth of Independent States (Russia, Ukraine, Belarus, Georgia, Azerbaijan, Armenia and Moldova) and 16 countries from Central and Eastern Europe (Poland, Lithuania, Estonia, Latvia, the Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Albania, Romania, Bulgaria and Macedonia).

② 14 countries without Confucius Institutes along the B&R route: Brunei, Iraq, Syria, Palestine, Saudi Arabia, Yemen, Oman, Qatar, Kuwait, Maldives, Bhutan, Uzbekistan, Turkmenistan, Bosnia and Herzegovina.

Table 1 Descriptive statistics of variable data

Variable	Mean	Standard deviation	The maximum	The minimum
EX	6873762.00	12901.0000	17877679.0	1241.00000
CI	98.0000000	25.0000000	174.000000	0.00000000
CGDP	90762473.0	48732.0000	457997315.	205483512.
GDP	31577589.0	16392.0000	563257469.	74132.0000
PS	47.3600000	14.2500000	88.0000000	1.00000000
EF	61.6300000	11.5700000	85.0000000	9.40000000
LP	42.2900000	11.5400000	89.0000000	0.00000000
B	0.35800000	0.01280000	1.00000000	0.00000000
RJ	0.32700000	0.04700000	1.00000000	0.00000000

Table 2 Matching experiment in 2014

Variable	Before the matching		T Value	After the matching		T Value
	The Treatment group	The control group		The Treatment group	The control group	
RGDP	7.312	5.258	15.34	7.312	7.319	−0.18***
GDP	6.152	4.186	19.11	6.152	6.131	0.32***
PS	3.279	2.183	17.25	3.279	3.283	−0.44***
EF	1.392	1.001	12.65	1.392	1.419	−0.52***
LP	2.769	1.004	18.03	2.769	2.528	0.33***
B	0.520	0.099	10.27	0.520	0.513	0.26***
RJ	0.816	0.028	11.38	0.816	0.807	0.17***

*Note: *** refers to 1% significance level.*

4. Estimation Results and Analysis

4.1 Mahalanobis Distance Matching

Before applying the Difference-in-Difference Method, we identified countries as the control group and matched them by year with those in the treatment group by using Mahalanobis Matching. Due to the similarity between matching results and given the limited space, this paper only presents the matching results of 2014 (See Table 2). Results show that before the matching, sample countries with Confucius Institutes and those without Confucius Institutes have significant differences in politics, economy and culture. However, after the Mahalanobis distance matching, sample countries with Confucius Institutes and those without Confucius Institutes show strong similarities in politics, economy and culture, which indicates that the Mahalanobis distance method can find the suitable paired country in the control group for the country in the treatment group.

4.2 Benchmark Estimation Results and Analysis

We conducted the benchmark regression analysis by using the Difference-in-Difference Method. The results are shown in Table 3. Model 1 is the estimation results without control variables and fixed effects. Model 2 is the estimation results with control variables but without fixed effects. Model 3 is the estimation results with control variables and

Table 3 Benchmark estimation results of the B&R Initiative

	Model 1	Model 2	Model 3	Model 4
CI	0.417 (11.33)***	0.400 (15.16)***	0.411 (9.88)***	0.426 (12.69)***
TD	0.020 (3.27)*	0.021 (2.19)**	0.017 (3.51)*	0.022 (4.05)**
CI×TD	0.525 (13.27)***	0.519 (12.48)***	0.507 (11.73)***	0.493 (14.52)***
GDP		1.309 (22.47)***	1.264 (24.79)***	1.173 (22.16)***
CGDP		0.516 (13.27)***	0.509 (12.72)***	0.493 (11.68)***
PS		0.006 (0.77)*	0.001 (0.69)	0.003 (0.50)
EF		0.011 (0.56)	0.016 (0.89)*	0.009 (0.71)
LP		0.005 (0.31)	0.004 (0.59)	0.001 (0.36)
B		0.527 (16.29)***	0.533 (17.11)***	0.509 (15.97)***
RJ		0.319 (14.41)***	0.300 (12.36)***	0.326 (15.16)***
C	0.517 (17.19)***	0.466 (14.51)**	0.537 (14.62)***	0.371 (12.62)***
G	No	No	Yes	Yes
S	No	No	No	Yes
Adj.R2	0.517	0.528	0.496	0.488
F	157.91	188.1	171.8	167.5

*Note: ***, ** and * refer to 1%, 5% and 10% significance levels. G refers to the effect of country and S refers to the effect of time.*

fixed effects by country. Model 4 is the estimation results with control variables and fixed effects by country and by time. The coefficient of CI from Model 1 through to Model 4 is significantly positive, which indicates that at the beginning year China's export to countries in the treatment group is larger than that to those in the control group. The fact that TD has a positive coefficient and passes the test at a low significance level indicates that as time goes by, China's export to countries along the B&R routes presents the trend of progressive growth. The product term CI×TD is an important variable whose coefficient is significantly positive. But after the control variable and fixed effect are considered, the coefficient is gradually reduced. As Model 1 fails to consider the influence of other factors, the coefficient of the product term is relatively large. But taking other factors into consideration makes it close to the actual influence and it could show that China exports more to countries along the B&R routes in term of culture, which means that cultural output leads to exports. Having a close look at the control variable, we find two economic variables have passed the test significantly, which supports the traditional conclusion. China's economic strength propels the growth of the export trade and the large market in the import countries has much attraction to Chinese products. Three variables of policy fail to pass the significance test in several models although they have a positive coefficient, which means that China's export trade is prone to countries with qualified policies. However, policy is not the dominant factor that affects the export trade. A positive coefficient in the variable of neighboring country indicates that shared borders make it easier for neighboring countries to communicate, which serves as an important condition for trans-border trade. The variable of Confucian culture also passes the test, indicating that similarity between countries in the circle of Confucian culture in terms of cultural tradition, outlook on life and outlook on value facilitates the development of bilateral trade.

4.3 Estimation by Country

The first Confucius Institute in the country along the B&R routes was established in 2004, not long after China's entry into the WTO. The WTO entry is an important factor for promoting China's export development. To further prove that culture leads to exports, we need to extract the factor of the WTO entry. Therefore, this paper classifies the

sample countries into WTO members and non-WTO members. If there is no significant disparity between two groups, it manifests that the influence of China's cultural output on promoting export trade is steady. The estimation results are shown in models 1 and 2 in Table 4. The B&R Initiative mainly involves Asian and European countries that are different in economic development level. To examine whether cultural output is linked to economic development level, we classify sample countries into Asian countries and European countries. The estimation results are shown in models 3 and 4 in Table 4. It can be concluded that models 1 and 2 show no significant differences. The coefficients of the core explanatory variable CI×TD in Model 1 and Model 2 are both positive. The only difference is that the coefficient of Model 2 is smaller than that of Model 1. This indicates that the cultural output to countries along the B&R routes is little influenced by WTO entry and has a steady impetus for export trade. The coefficients of the core explanatory variable CI×TD in Model 1 and Model 2 are both positive, but the coefficient of Model 3 is much bigger than that of Model 4. This indicates that China's cultural output to Asian countries has a better effect than that to European countries. Since estimation results of the control group show no significant difference with the standard model, this paper will not make further elaboration.

Table 4 Classification estimation results of the B&R Initiative

	Model 1	Model 2	Model 3	Model 4
	WTO members	Non−WTO members	Asian countries	European countries
CI	0.418 (9.49)★★★	0.409 (12.41)★★★	0.382 (11.73)★★★	0.394 (10.53)★★★
TD	0.015 (1.47)★★	0.010 (1.34)★★	0.021 (1.05)★★	0.020 (0.99)★★
CI×TD	0.520 (17.48)★★★	0.514 (18.11)★★★	0.541 (15.29)★★★	0.418 (18.14)★★★
GDP	1.204 (25.28)★★	1.185 (29.71)★	1.108 (28.73)★★	1.207 (29.61)★★★
CGDP	0.316 (9.22)★	0.279 (8.19)★	0.288 (7.22)★	0.317 (9.28)★★★
PS	0.007 (0.21)	0.002 (0.44)	0.001 (0.37)	0.003 (0.45)★
EF	0.013 (0.74)★	0.007 (0.41)	0.008 (0.60)★	0.014 (0.46)
LP	0.001 (0.29)	0.003 (0.33)	0.001 (0.20)	0.005 (0.27)
B	0.533 (16.20)★★★	0.519 (20.52)★★★	0.527 (19.18)★★★	0.522 (18.77)★★★
RJ	0.380 (13.40)★★★	0.377 (12.83)★★★	0.395 (15.61)★★★★	0.319 (14.43)★★
C	0.831 (14.60)★★★	0.729 (17.51)★★★	0.809 (19.89)★★★	0.911 (16.66)★★★
G	Yes	Yes	Yes	Yes
S	Yes	Yes	Yes	Yes
Adj.R2	0.377	0.419	0.398	0.407
F	190.4	148.9	177.4	163.9

Note: the same as in Table 3.

4.4 Delay Effect Test

The previous section has indicated that culture leads to export. But cultural output is an enduring process and it will take time for other countries to accept Chinese culture. From which year can culture play a role in promoting export trade? To answer this question, this paper assesses the value of the Confucius Institute over the 10 years after its establishment. The results are shown in Table 5. Model 0 is the effect of the Confucius Institute in the year of its establishment. Given that the effect in the first and second years of its establishment is not significant, we only list estimation results in models 1-8 which are the effect of the Confucius Institute from the third to the tenth year of its establishment. The coefficients of the core explanatory variable CI×TD in models 0-8 are all positive, indicating that cultural output has a positive correlation with commodity exports. But Model 0 fails to pass the significance test. Models 1-8 all pass the significance test, but relevant coefficients show a trend of

Table 5 Delay test of the B&R Initiative

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	CID	CIN3	CIN4	CIN5	CIN6	CIN7	CIN8	CIN9	CIN10
DU	0.079 (0.76)	0.131 (3.46)*	0.169 (5.33)*	0.297 (6.31)**	0.390 (8.29)*	0.485 (8.17)*	0.316 (8.17)*	0.562 (7.25)**	0.322 (8.00)**
DT	0.002 (0.10)	0.008 (0.46)*	0.010 (0.62)*	0.037 (0.77)**	0.025 (1.59)***	0.017 (0.94)**	0.039 (0.83)*	0.031 (1.26)**	0.038 (1.40)***
DU×DT	0.076 (0.22)	0.152 (9.31)*	0.274 (11.28)*	0.487 (15.62)**	0.319 (16.74)*	0.546 (17.63)***	0.307 (13.64)*	0.694 (18.16)**	0.476 (16.42)**
GDP	1.052 (17.96)**	1.179 (15.15)***	1.311 (20.19)***	1.253 (22.36)***	1.194 (22.43)***	1.072 (25.83)***	1.273 (19.97)***	1.309 (28.52)***	1.250 (27.36)***
CGDP	0.297 (8.26)***	0.302 (8.51)**	0.274 (10.28)***	0.315 (8.52)**	0.336 (9.33)***	0.327 (10.07)***	0.276 (7.29)**	0.352 (6.52)*	0.341 (9.71)*
PS	0.001 (0.03)	0.003 (0.26)	0.007 (0.31)	0.014 (0.62)	0.007 (0.11)	0.009 (0.46)	0.003 (0.70)	0.001 (0.77)	0.001 (0.51)
EF	0.009 (0.47)	0.016 (0.88)	0.006 (0.90)*	0.017 (0.42)	0.008 (0.93)*	0.025 (0.53)	0.011 (0.42)	0.042 (0.63)	0.002 (0.75)
LP	0.001 (0.07)	0.015 (0.43)	0.001 (0.37)	0.004 (0.55)	0.023 (0.49)	0.001 (0.62)	0.003 (0.72)	0.005 (0.73)	0.004 (0.62)
RJ	0.361 (8.16)***	0.344 (9.36)**	0.274 (8.53)*	0.409 (9.26)**	0.333 (7.95)***	0.317 (8.52)**	0.411 (9.59)***	0.360 (8.27)***	0.380 (10.11)***
C	0.963 (10.37)***	0.732 (14.35)***	0.830 (17.52)***	0.739 (16.73)***	0.526 (17.52)***	0.694 (19.25)***	0.736 (19.15)***	0.569 (17.40)***	0.730 (18.27)***
R	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R2	0.502	0.403	0.411	0.385	0.417	0.462	0.436	0.489	0.430
F	190.3	180.6	157.4	188.8	174.2	189.3	163.1	195.8	174.2

Note: the same as in Table 3.

unsteady increase. This indicates that the impetus of cultural output for export trade has a lagging effect and shows up from the third year. Given that China's cultural output is in its development stage and has much to improve, the impetus of cultural output for export trade is unsteady yet increasing on the whole. Since estimation results of the control group show no significant difference with the standard model, this paper will not make further elaboration.

4.5 Robustness Test

The above mentioned tests are based on the Mahalanobis Matching to match countries in the treatment group with those in the control group. To further assess the robustness of the estimation results, we applied the Nearest Neighbor Matching method to match the samples. If two methods reach similar estimation results, we can conclude that the estimation results are robust.

The estimation results are shown in Table 6. Model 1 is the estimation results without control variables and fixed effects. Model 2 is added with control variables. Model 3 is added with control variables and fixed effects by country. Model 4 is added with control variables and fixed effects by country and by time. Table 3 and Table 6 show similar estimation results, which means the estimation results are robust whether the

Table 6 Robustness test

	Model 1	Model 2	Model 3	Model 4
CI	0.418 (14.36)***	0.409 (13.27)***	0.382 (11.40)***	0.394 (13.54)***
TD	0.019 (3.79)*	0.023 (2.92)**	0.019 (3.88)*	0.021 (4.31)**
CI×TD	0.521 (15.47)***	0.517 (13.62)***	0.511 (12.41)***	0.503 (13.17)***
GDP		1.311 (20.71)***	1.285 (22.77)***	1.268 (26.92)***
CGDP		0.500 (17.69)***	0.514 (15.61)***	0.487 (16.27)***
PS		0.002 (0.69)*	0.001 (0.57)	0.004 (0.90)
EF		0.008 (0.72)	0.010 (0.50)*	0.019 (0.93)
LP		0.002 0.531	0.005 0.527	0.001 0.518
B		(17.46)*** (20.52)***	(19.62)*** (19.18)***	(18.16)*** (18.77)***
RJ		0.322 (17.31)***	0.316 (15.56)***	0.319 (18.29)***
C	0.628 (15.33)***	0.559 (13.27)**	0.475 (16.18)***	0.490 (18.37)***
G	No	No	Yes	Yes
S	No	No	No	Yes
Adj.R2	0.509	0.529	0.477	0.493
F	173.3	190.6	180.6	197.1

Note: the same as in Table 3.

Mahalanobis Matching method or the Nearest Neighbor Matching method is applied. It further supports the theory that culture leads to exports and that establishing Confucius Institutes in countries along the B&R routes promotes the development of China's export trade.

5. Conclusion and Suggestion

The B&R Initiative is an incarnated manifestation of China's "going global" strategy as well as the extension and development of the ancient Silk Road. It not only undertakes the historical mission of promoting cultural communications between nationalities, but also propels the development of international economy and trade relations. As a messenger of the essence of Chinese culture, the Confucius Institute generates great influence on the development of Asian civilizations, and even world civilizations, largely enhancing China's international influence. This paper analyzed the internal relationship between cultural output and commodity exports by collecting data of Confucius Institutes and export trade of countries along the B&R routes and applying the Difference-in-Difference Method. It concludes that culture leads to exports. The Confucius Institute has promoted China's exports to countries along the B&R routes and cultural output has an export growth effect which is better in Asian countries than in European countries. Given that it takes time for other countries to accept Chinese culture and there is a time delay, the effect to promote export trade only shows up in the third year after the establishment of the Confucius Institute. With the Mahalanobis Matching method and the Nearest Neighbor Matching method, this paper supports the robustness of the estimation results. Given that China's cultural output is still in its development stage and has much to improve, the impetus of cultural output for export trade is yet unsteady.

This paper has a policy significance in that China has become the largest goods exporter in the world since 2009 and is currently in the process of transformation from trade nation to trade power. The role of traditional factors to promote the development of export trade has been played to the extreme, and export trade is now facing a growth bottleneck. Cultural output is an important factor in increasing commodity exports. Confucius Institutes help increase China's exports to the countries along the B&R routes; and the growth in cultural exports exhibits regional differences, hysteresis, and fluctuations. As China's cultural outputs are

still at an immature stage, their promotional effects on exports are unstable. In the future, China should further standardize its management and operational systems and accelerate the re-orientation of the Confucius Institutes' development to a content-based direction to enhance the effects of cultural outputs in increasing exports and boosting China's soft power.

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