Does Transnational Traffic Effects Bilateral Trade Exceeding Political Trust: Evidence from China-Pakistan Traffic

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Abstract. This paper uses Cox Proportional-Hazards Model, analyzes transnational traffic and political trust 's influence on China and Pakistan bilateral trade. Results show time, political consistency and culture identity have little hazard on bilateral trade; traffic accessibility, transportation construction force and tolerance to turbulence are hazardous to bilateral trade. It indicates that technological delay, inconsistent tariff, trade restrictions, trade imbalance, cultural disidentity will not influence bilateral, whereas tolerance of terrorism and turbulence will have an influence on bilateral trade growth.

Keywords: Circulation Effect; Overflow; Cox Proportional Hazards Model

1 Introduction

Transnational rail transit is an important substantial intermediary and circulation channel with regards to economic integration (EI). To be given an example, China-Pakistan Railway is a "Major Artery" implanted in the China-Pakistan Economic Corridor project as well as the Silk Road Economic Belt (SREB) blueprint. It has been expected to play an key role for enhancing Pakistan's economic development and China's trade increase, especially trade increase and economic developments of most western city of Kashgar in Xinjiang Uyghur Autonomous Region. As a collection of transnational traffic, China-Pakistan Railway have positive effect on economic development and political stability, does this transnational traffic is likely to have any effect on China and Pakistan?

2 Transnational Traffic Policy Trust and Trade

2.1 Circulation Effect of Production Factors

Brenneman et al (2002) believe that improvement of transportation quality significantly improves health status and education level [1]. Feng CL (2017) found transportation has a significant positive impact on China's total factor productivity [2]. Zhang XP

(2016) points out that China's transportation has a significant spatial spillover effect [3]. Song XF (2017) argued this railway will enhance China's status in Middle and South Asia, consolidate China's opening strategic layout [4].

2.2   Decrease Effect of Trade Cost

Some scholars explored how tariff reduction, transportation cost reduction and income similarity affect growth of world trade. Xu JY (2015) reckoned China-Pakistan Railway strengthen tourism and cultural exchanges between China and Pakistan [5]. Li XG (2015) perceived this railway can push Kashi's influence to Central Asia. China-Pakistan Railway will reduce dependence on Malacca Strait, shorten transportation distance, provide more efficient import channel [6].

2.3   Overflow Effect of Exportation

With the deepening of political trust between China and Uzbekistan and Kazakhstan, overflow effect will also affect trade increase. This railway will promote construction of China-Kyrgyzstation-Uzbekistan Railway, China-India Railway and China-Arab Railway. Dong Y (2006) reckoned this railway has optimized Xinjiang's transportation network and highlighted location advantages of Kashi [7]. Wang GR (2017) reckons this railway will deepen economic and trade cooperation between Xinjiang and Pakistan, alleviate the trade imbalance [8].

2.4   Security Effect of Trade Environment

China and Pakistan's political trust can bring security consolidation, elimination of terrorism, domestic contradiction harmonization. Construction of the China-Pakistan railway has also improved the speed of the police and strengthened the cooperation against terrorism. Meanwhile. Maynur (2016) argued that China-Pakistan Railway can reduce China's dependence on Strait of Malacca, and Pakistan's antiquated and inefficient rail system will be updated [9].

3   Methodology and Model

3.1   Methodology

This chapter introduces Cox Proportional-Hazards Model (D·R·Cox), so as to explore bilateral trade's development' influence factor. The basic form of the model is:

$$h(t) = h_0(t)\exp(\beta_1 x_1 + \beta_2 x_2 + \beta_p x_p) \tag{1}$$

β is partial regression coefficient, which needs to be analyzed to get a parameter. When the variable X is 0, the benchmark risk function of h(t) (namely, the risk function at time t from the beginning of the study) needs to be estimated from the sample data. Take the natural logarithm of both sides of the equation (1):

$$\ln[h(t, X)/h_0(t)] = \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \cdots\cdots \beta_m x_m \tag{2}$$

3.2 Variable

The variables were selected as following, traffic accessibility (TA) represents the degree of connectivity. Transportation construction force represents the ability or potential to build transportation infrastructure linkage. Political consistency represents the tendency to reduce transaction costs, increase economic integration and mutual trust. Cultural identity represents tolerance cultural difference. The tolerance to turbulence represents attitude of maintaining trade security and channel smoothness.

Table 1. Variable and Grouping and Assignment

Variable		Grouping and Assignment
Transnational Traffic	Traffic Accessibility (TA)	≤0.5: 0; 0.5<TA<0.8:1; ≥0.8: 2
	Transportation Construction Force (TCF)	I degree:0; II degree:1; III degree:2
Political Trust	Consistency of Policy (CP)	≤0.5: 0; 0.5<CP<0.7:1; ≥0.7: 2
	Cultural Identity (CI)	≤0.3: 0; 0.3<CI<0.5:1; ≥0.5: 2
	Tolerance to Turbulence (TT)	≤0.3: 0; 0.3<TT<0.5:1; ≥0.5: 2
Dependent Variables	t	month
	Bilateral Trade Status (BTS)	restrain:0; facilitation:1

Note: Data in the table is owner-draw.

3.3 Data

As explicit variables, time(t) is 528 months, since the completion of China-Pakistan Karakoram Highway (KH) is in 1978. Bilateral trade status (BTS) is defined as facilitation and restrain, which respectively represented in 1and 0, means that trade can or can not survive. Cultural identity below 30% is considered to be non-survival, above 50% is considered to be good survival, and between 30% and 50% is considered to be mediocre survival, the same as turbulence tolerance. Political consistency lower than 50% is considered to be non-survival, higher than 50% is considered to be good survival, and between 30% and 50% is considered to be mediocre survival. Traffic accessibility (TA) lower than 50% is considered to be non-survival, higher than 80% is considered to be good survival, between 50% and 80% is considered to be mediocre survival.

Table 2. Summary Statistics

Variables	N	Mean	Sd	Min	Max
id	30	15.50	8.803	1	30
t	30	17.60	9.324	6	47
BTS	30	0.800	0.407	0	1

TA	30	0.797	0.209	0.400	1
TCF	30	2.133	0.900	1	3
CP	30	0.560	0.206	0.200	0.900
CI	30	0.480	0.0664	0.400	0.600
TT	30	0.473	0.0740	0.400	0.600

Note: Data comes from "Kashi Foreign Trade Statistical Yearbook", it is tested by Stata 14.0.

4   Cox Proportional Hazards Model Test

Analysis shows on Table 3, traffic accessibility (TA)'s Haz. Ratio is 106.5%, the coefficient is -9.76e-15, the implication is that low traffic accessibility is the hazardous factor. Transportation construction Force (TCF)'s Haz. Ratio is 112%, the coefficient is -1.47e-15, the implication is that the weak transportation construction force is one of the hazardous factor. Consistency of Policy (CP) 's Haz. Ratio is 45.9%, the coefficient is 1.74e-15, the implication is that low policy inconformity or barrier is 54.1% more dangerous than high policy coordination, it is depicted that political consistency is one of the hazardous factor. The cultural identity (CI)'s Haz. Ratio is 30.6%, the coefficient is 3.24e-14, the implication is that culture differences of China and Pakistan has little influence on bilateral trade, indicating China and Pakistan's bilateral trade development is capable of survive on the basis of culture difference. Tolerance to Turbulence (TT) 's Haz. Ratio is 138.7%, the coefficient is -4.95e-15, the implication is that high turbulence tolerance results in 61.3% risks increase compared to low turbulence tolerance.

Table 3. Cox Regression—Breslow Method for Ties

_t	Haz.Ratio	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
BTS	(omitted)						
t	0.153	4.91e-15	0.034189	-0.00	0.600	0.9351862	1.069306
TA	1.065	-9.76e-15	3.124208	0.00	0.732	0.0021911	456.3846
TCF	1.120	-1.47e-15	0.469553	-0.00	0.042	0.3983964	2.510063
CP	0.459	1.74e-15	2.071441	-0.00	0.853	0.0172499	57.97137
CI	0.306	3.24e-14	3.440616	0.00	0.056	0.0011785	848.5108
TT	1.387	-4.95e-15	3.138545	-0.00	1.000	0.0021304	469.3902

Note: Data comes from test result of Cox Regression. It is tested by Stata 14.0.

Analysis result of test of Proportional-Hazards Assumption is shown on Table 4. Traffic Accessibility (TA)'s Prob is 0.036<0.05, rho is 72.8%, it indicates traffic ac-

cessibility does not meet original assumption, traffic accessibility is hazardous factor. Transportation Construction Force (TCF)'s Prob is 0.018<0.05, rho is 62.5%, it indicates transportation construction force does not meet original assumption, transportation construction force is hazardous factor. Besides, tolerance to turbulence (TT) 's Prob is 0.038<0.05, rho is 61.6%, it indicates high turbulence tolerance between two countries results in risks increase. The rest of variables, time, traffic accessibility (TA), consistency of policy (CP), cultural identity (CI) show acceptance of original assumption. Global test result prob=0.181>0.05 shows Cox Regression basically meet original assumption, indicating a satisfactory results.

Table 4. Proportional-Hazards Assumption Test

	RHO	CHI2	DF	PROB>CHI2
o.BTS	0.018	0.060	1	0.814
t	0.112	1.941	1	0.163
TA	0.728	7.582	1	0.036
TCF	0.625	0.447	1	0.018
CP	0.988	0.977	1	0.426
CI	1.012	0.993	1	0.221
TT	0.616	0.441	1	0.038
GLOBAL TEST	0.514	1.777	6	0.181

Note: Data comes from test of Proportional-Hazards Assumption. It is tested by Stata 14.0.

5 Conclusion and Prospects

5.1 Conclusion and Prospect

Time, political consistency and culture identity have little hazard on bilateral trade. Time has no correlation with bilateral trade advance. Reality events are consistent with 1978's Karakoram Highway opening, bilateral trade has increased. Even if without consistent trade policy, bilateral trade between China and Pakistan will be also advanced through mutual benefit. Chinese and Pakistan mainstream culture have definitely no obstacle for bilateral trade.

With China's infrastructure construction ability's improvement, China has ability to connect traffic to any part of the country including Khunklapu Port in Kashgar, western Xinjiang. However, it doesn't happened to Pakistan, Pakistan has no ability make its traffic connecting China's borderline, that means they are hazardous factors for China and Pakistan's bilateral trade.

With full implementation of "Islamization" in Pakistan, extremism has been growing. Xinjiang's terrorism has been on the rise since the 1980s and reached its peak after the "July 5 Urumqi Incident" in 2009. The turbulence has severely inhibited development of bilateral trade. Any act of tolerating terrorism and turbulence is a hazardous factor for China and Pakistan's bilateral trade.

Acknowledgement

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