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Testing the Emigration-Exports Nexus: Empirical Evidence from Pakistan

Noureen Fatima [1] Abdul Jalil [2]

1. Pakistan Institute of Development Economics, Islamabad, Pakistan
2. Pakistan Institute of Development Economics, Islamabad, Pakistan

Abstract

This paper investigateslong-run relationship between stock of Pakistani emigrants working in major destination countries i.e. Gulf, Malaysia and Korea, and exports of Pakistan. This study usepanel unit root and co-integration tests robust to cross-sectional heterogeneity for 1980 to 2018. The long-run relationship is estimated using Fully Modified OLS. Besides, panel data estimation is used for panel-based vector error correction model. Results suggest that an annual increase in stock of Pakistani emigrants in these destination countries increasesexports of Pakistan towards these countries. Additionally, Gross Domestic Product of Pakistan does nothave potential to strengthen exports of Pakistan. Gravity model estimates confirm robustness of results.

Key Words: Economic Growth, Emigration, Gulf Countries, International Trade, Korea, Pakistan

Introduction

Many developed and oil-rich countries heavily rely on immigrants from South-East Asia and South Asia, in order to meet their labor shortage. Besides, mitigating the labor shortages of host countries, immigrants strengthen economic activities of their home country. Migration is a source to decent work, remittances and investment: henceforth for long-run economic growth (Hyder et al. 2016) thereby contributing to their balance of tradeof home country and economic growth.

Gould (1994) believes that migration facilitates international trade. First, emigrants prefer products of their own country.Also, while residing abroad, emigrants maintain their 'taste for home-country products'(Akbari and Hyder 2011). Secondly, emigrants are aware of their culture, language, and traditions. Using this knowledge, they can facilitate flow of information for buyers and sellers of various countries. Third, in international trade, emigrants and their networks can be a good source of contract enforcement in weak environment of contract implementation, promoting trade by reducing transaction cost of trade.Besides all, emigrants do not cut ties with homecommunity. Connectivity is primary channel helping emigrants to affect exports.Emigrants foster connectivityand help in generating new ideas.

Developing countries tend to adopt various market and institutional reforms to enhance exports(Hyder et al. 2016). However, the contribution of emigrants in international trade has received little attention inacademia. Available studies on subject are within context of migration between developing and advanced countries. In context of Pakistan, only Akbari and Hyder (2011)consider the contribution of

overseas Pakistanis residing in Organization for Economic Cooperation and Development (OECD), in exports. Although, Gulf Cooperation Council (GCC) is major hub of Pakistani emigrants, but empirical analysis with respect to GCC, in exports of Pakistan, is missing.

Annually, 98 percent of Pakistani worker force proceeds towards GCC countries.Korea and Malaysia are also the major destinations for Pakistani workers. By using the arguments cited above as a backdrop, this paper analyzes the contribution of Pakistanis working in major destination countries, in exports of Pakistan. Itis also an attempt to analyze impact of international emigration on international trade between developing countries.

We use panel unit root, co-integration test, and panel estimation procedure to enhance the authenticity of study. FollowingGirma and Yu (2002), robustness of results is checked byusing gravity model. With a per capita income of about $ 1197 in 2018, Pakistan is among lower-middle-income countries. Vohra (2001) indicates a positive and significant impact of exports on economic growth if the country reaches a certain level of economic development that Pakistan has achieved now. Therefore, all factors promoting exports can be of greater interest to policymakers to achieve certain level of economic growth.

Overview of Emigration from Pakistan and the Contribution of Study

A total of 10.9 million Pakistani workers went abroad during1971 to 2019. Based on the available data,this study focus on contribution of Pakistani emigrants in exports of Pakistan with ix oil-exporting GCCcountries,Korea and Malaysia.

Pakistan is primary source country of labor supply for Gulf countries.With a population of over 1.5 million, Pakistani is the second-largest nations in UAE after India, constituting 12.5 percent of its total population. It is the third-largest overseas community in Saudi Arab and UAE. Since 1980s, bilateral trade, that is US$1.1 billion, has strengthened the economic relationship between Pakistan and South Korea. Korean Trade Centre is playing vital role in enhancing trade relations as Pakistan maintains a strong base in South Korea for its trade agreements and treaty. In Malaysia, Pakistanis forms the 6thmost significant group of expatriates.Pakistani origin people and their descendants in South Korea and Malaysia are close to 2, 14,000.

Besides significant number of Pakistani workers, the Gulf countries, Korea and Malaysia are trade partners of Pakistan. Data on these countries are consistently available from 1980 to 2018.As international trade play vital role in economic growth Kavoussi (1985) therefore, studies that demonstrate economic impact of overseas Pakistanis on exports will, in turn, demonstrate their role in economic development. More specifically, present study contributes in the following ways:

i. Itestablishes nexus between Pakistani expatriates working in Gulf countries, Korea and Malaysia, with exports of Pakistan.

ii. The study uses time series and panel unit root tests to examine stationarity properties of data.

iii. In addition to Johanson co-integration test, Panel co-integration tests are applied so that data may not suffer power loss due to an infinite sample.

iv. Co-integrating vectors are estimated using FMOLS estimation technique that allows consistent and efficient estimation of co-integrating vectors. It allows consistency of long-run relation with short-run adjustment deals with endogenity of repressors and respects time-series properties of data.

v. Short-run estimates through Error Correction Model enhance utility of data.

The rest of paper is organized as follows: Section II provides literature review. Section III presents econometric model and variable definition. Section IV discusses data and variable construction used for estimation. Section V discusses empirical results. Section VI presents concluding remarks and policy implications.

Literature Review

The available empirical studies that establish nexus between international trade and international emigration are in context of developed countries. Gould (1994) and Head and Ries (1998) and Girma and Yu (2002) by use of gravity model, report statistically significant contribution of immigrants regarding imports and exports for selected countries,supporting the hypothesis that preference of immigrants for their home country products, provision of reliable information and networking give increase to exports from home country. Akbari and Hyder (2011) and Hyder et al. (2016) confirm the same relationship for Pakistan.

The available empirical studies in a similar context are for developed countries, with only a few for Pakistan. These studies have used only the static gravity model of international trade, without caring for econometric estimation techniques. In fact, for a significant number of time-series observations, instead of using the FEM, REM or Generalized Least Square (GLS) model, it is better to use Panel co-integration and FMOLs estimation techniques to estimate long-run relationship. Thirdly, major destination countries such as GCC, Malaysia and Korea have ignored. The present study is pioneer in testing such a relationship by using better econometric techniques to establish log-run relationship among variables.

The Econometric Model and Variable Definition

To empirically investigate the relationship betweenstock of Pakistani migrant workers in GCC, Malaysia and Korea, and exports from Pakistan towards these countries, we use following model:

$$logexp_{pjt} = \alpha + \gamma logy_{pt} + \emptyset logy_{jt} + \pi logPop_{pt} + \delta logPop_{jt} + \partial logREER + \vartheta log$$

Where OP_{pjt} indicate exports of Pakistani to j^{th}country, j indicates host countries; t is time that is from 1980 to 2018. Logarithmic form is used to obtain results in terms of elasticity. The dependent variable is exp_{pjt} that is exports from Pakistan to j^{th} country (each host country) or dollar value of goods and services

exported to j^{th},y_{pt} is Gross Domestic Product of Pakistan, y_{jt} is GDP of each host country and a proxy for wealth Akbari and Hyder (2011). GDP of the domestic country is believed to reflect supply capacity to export goods Kristjánsdóttir (2005) that determines a exports and imports of a countryAkbari and Hyder (2011).

Pop_{pt} and $Pop_{jt}$is the population of Pakistan and of each of host country is population ofPopulation reflects the strength of network originating from a single country. GDP and population indicate export capacity of Pakistan. The coefficient for host country population is generally, expected to be positive.Bigger market in host country is expected todemand for imports. Similarly, exporter country is expected to be capable ofsupplying more products as itspopulation grows in size.Withincrease in expatriates, there come greater ties of relationship such as kinship, friendship and feeling of a shared origin, creating network of emigrants

Exchange rates significantly affect trade flows. More strong national currency, exports reduce while imports rise, indicatingloss in trade competitiveness for exporting country.To achieve the objective of quantitative assessment of Pakistani emigrants on exports of Pakistan, an independent variable namely Overseas Pakistanis OP_{pjt} is added in model.

Data and Variable Construction

Data on exports of Pakistan are taken from Foreign Trade Statistics, International Monetary Fund (IMF), expressed in US million dollars.Data for GDP, in constant US Dollar 2010, and population are taken from World Development Indicators (WDI), the World Bank (2019).Data on Real Effective Exchange Rate are taken from International Financial Statistics (IFS).

Data on annual flow of Pakistani migrant workers (converted into stock data to improve reliability) are obtained from the website of BE&OE, Government of Pakistan (2019)

Empirical Results

To utilize available data in more efficient manner, we use of Panel Unit Root andPanel Co-integration tests. Long-run relationship is estimated through Panel FMOLS.

The results of ADF test (inconclusive) and Panel Unit root test reliable) are reported in Table 1 and 2 respectively. The results of panel unit root test support the hypothesis of unit root in all variables and zero order integration in first difference. Country-specific Johansen maximum likelihood co-integration results are reported in Table 3, indicate existence of co-integration. Kao Engle Granger, Pedroni and Fisher chi-square test (Table 4 and 5) support presence of co-integrating vectors, indicating long-run relationship among variables.

Country specific and Panel FMOLS results (Table 6) indicate that elasticity of exports from Pakistan to each of host country with respect to income of Pakistan is negative. For instance, it is -1.83 and -1.58 for KSA and UAE. However, the same

with respect to income of each of host country has mix results.Similarly, results are mix for population of Pakistan, host countries and real effective exchange rate.The elasticity of exports of Pakistan with respect to Pakistani migrant workers is positive, except for Korea. Results indicate same pattern of movement between number of Pakistani emigrants and exports towards that country.

Table 1
Unit Root (ADF test: Ho: unit root)

Pakistan					
	Level	-0.92	-1.52	-2.09	
	Ist diff	-3.62**	-4.17*	-4.82*	
Countries					
KSA	Level	-0.08	-0.54	-2.52	-2.36
	Ist diff	-3.84*	-3.78*	-5.13*	-5.33*
UAE	Level	-2.14	-0.68	-0.66	-1.4
	Ist diff	-4.65*	-7.68*	-5.22*	-6.58*
Bahrain	Level	-4.69*	-1.79	-1.21	-1.09
	Ist diff	…	-8.04*	-5.96*	-7.52*
Kuwait	Level	-10.09*	-1.025	-2.4	-1.34
	Ist diff	…	-4.92*	-5.87*	-6.55*
Qatar	Level	-2.42	-0.055	-1.45	-2.65
	Ist diff	-4.33*	-6.88*	-6.42*	-7.17*
Oman	Level	-0.28	-0.56	-0.66	-1.4
	Ist diff	-3.78*	2.85***	-5.22*	-6.58*
Malaysia	Level	-2.03	-4.5*	-1.13	-2.15
	Ist diff	-15.32*	…	-6.75*	-7.82*
Korea	Level	-5.6*	-7.78*	-1.88	-2.14
	Ist diff	…	…	-5.74*	-6.14*

Note: Level and Diff ADF t-tests for unit root in levels and First differences. Number of lags selected using AIC criterion. (*), (**) and (***)
signify rejection of unit root hypothesis at 1%, 5% and 10% levels.

Table 2
Panel Unit Root Test

	IPS level	MW level	IPS (First difference)	MW (First Difference)
logy	-14.48	92.75	**-13.84***	**110.08***
logexp	-0.72	16.15	**16.63***	**212.78***
logREER	-1.81	22.08	**-10.59***	**126.31***
logPop	-0.71	10.76	**-0.123***	**8.543***
logPop	-1.38	56.99	**-7.623***	**104.80***
logOP	-0.889	18.93	**-15.95***	**199.64***

Note: * shows rejection of null hypothesis at 5 % level. Critical values for MW test are 37.7, 31.41 at 1 % and 5% statistical level. Boldfaced values indicate evidence in favor of unit roots.

Table 3
Johansen Co-integration tests

Country	**Max Eigen value Statistics Ho: rank=r**					
	r=0(46.23)	**r ≤ 1 (40.09)**	**r≤ 2 (33.87)**	**r ≤3 (27.58)**	**r ≤ 4 (21.13)**	**r ≤ 5 (14.26)**
KSA	118.02*	67.95*	47.98*	34.57*	31.53*	8.3
UAE	144.65*	98.51*	65.58*	47.07*	32.55*	12.13
Bahrain	123.003*	79.84*	66.72*	33.11*	21.13*	11.6
Kuwait	141.16*	70.51*	45.32*	31.94*	23.18*	10.51
Qatar	134.92*	97.68*	81.25*	45.77*	34.52*	9.1
Oman	139.27*	94.89*	69.6*	44.77*	33.15*	5.65
Malaysia	131.35*	36.75*	45.008*	34.84*	24.27*	8.12
Korea	132.49*	73.89*	39.42*	33.66*	22.48*	9.28

Note: r denotes number of co-integrating vectors. The optimal lag lengths for the VARs were selected by AIC criterion. Numbers in parentheses next to r = 0, r ≤ 1 1, r ≤ 1 2,r ≤ 1 and 3 r ≤ 4 represent 5% critical values of test statistic. An (*) indicates rejection of null hypotheses.

Table 4
Kao Engle-Granger, Pedroni test:

Kao-test: Ho: No Co-integration.
t-stat=2.61 probability= 0.0045

Pedroni test:

Case 1 (No deterministic T)			**Case 2 (Deterministic Inter &T)**		**Case 3 (No deterministic Inter or T)**	
	Static	**Weighted Stat**	**Static**	**Weighted Stat**	**Static**	**Weighted Stat**
	Alternative hypothesis: Common AR Coefficient (within dimension)					
Panel V-stat	-2.00 (0.9773)	-3.093 (0.999)	-3.14 (0.992)	-4.27 (0.830)	-1.69 (0.954)	-2.56 (0.994)
Panel Rho-stat	0.65 (0.742)	2.64 (0.995)	2.00 (0.9875)	3.82 (0.999)	-0.17 (0.432)	1.82 (0.954)
Panel PP-stat	0	-3.09* (0.001)	0	0	-5.14* (0.000)	-0.05 (0.136)
Panel ADF-stat	0	-6.33* (0.000)	_	_	-4.38* (0.000)	-5.11* (0.000)
	Alternative hypothesis :individual AR Coefficient (Between Dimension)					
Group rho-stat	2.28 (0.998)		3.41 (0.999)		1.534 (0.938)	
Group PP-stat	0		0		-0.002 (0.528)	
Group ADF-stat	-5.64* (0.000)		0		-4.40* (0.000)	

Note: T stands for Trend and Inter for intercept. Probability is given in brakets. Automatic selection of lag-length based on SIC with

maximum number of 08 lags. *shows significance at 5 % level indicating existence of co-integration.

Table 5
Fisher Chi-Square test: Panel Co-integration

r=0	r≤1	r≤2	r≤3	r≤4	r≤5
159.3	86.76	68.23	48.18	32.14	29.13
(0.000)	(0.000)	(0.000)	(0.248)	(0.0124)	(0.2537)

Note: Critical values for Fisher Chi-squared test are 37.57 and 31.41 at 1% and 5 % significance level. Fisher's Co-integration test is computed based on rho—values from Johansen's maximum likelihood co-integrating method. Hence, test is applied regardless of dependent variable.

Panel FMOLS results indicate that elasticity of exports with respect to income of host countries is positive while it is negative with respect to income of Pakistan. The results are so, due to production sub-optimality. Moreover, economies of scale which are accounted by size of GDP of Pakistan do not seem to be influential for exports. Additionally, exports of Pakistan are largely driven by agricultural or raw products. These results are in-line with findings of Kristjánsdóttir (2005).

The estimated coefficient of export elasticity with respect to income of host country (logyj) indicates that 1 percent increase in host country income will increase exports from Pakistan by 1.25 percent. It reflects that imports of host countries from Pakistan are more influential towards their own income. Positivecoefficient of GDP of host country implies increase in demand for exports as economic size of trading country increases confirming the results of Javid, Sharif, and Alkhathlan (2018) and Kristjánsdóttir (2005).

High positive export elasticity coefficients for population of Pakistan (logpp, 3.73)indicates that growing level of population of Pakistan is contributory towards its exports and adds value in exports. Market size of Pakistan, is influential for exports. Theresultsconfirm earlier findings of Nuroglu (2010).

Panel FMOLS results indicate negative and significant import elasticity of host country i.e. -1.14. it is justified as country having less population will get more share of exports as compared to other country. Secondly, for a country that initially had less population, which later on increased, and accordingly its imports declined is also an indicator of higher value-added allowing for own production. This negative effect is in-line with that reported by Kristjánsdóttir (2005).

Estimated exports elasticity with respect to log REER is negative implying that with rise in the real exchange effective rate domestic currency appreciates resulting in exports more expensive for the importers, so exports decline.

Table 6
FMOLS Estimates: (dependent variable: logexp)

Country	Constant							R^2
KSA	39.19*	-1.83*	-0.14*	2.96*	-0.69**	-0.79*	0.186*	0.59
	(9.25)	(-8.14)	(-9.91)	(11.25)	(-2.51)	(-13.37)	(16.53)	
UAE	-44.09*	-1.58*	1.93*	-2.39*	1.39*	-2.21*	0.028***	0.94
	(-6.34)	(-4.21)	(13.11)	(-3.09)	(11.95)	(-18.99)	(1.65)	

Bahrain	-1.86*	-4.40*	-1.64**	-8.02*	-1.35***	-0.96*	0.23*	0.92
	(-2.23)	(-4.57)	(-2.31)	(-3.77)	(-1.98)	(-3.09)	(2.84)	
Kuwait	-7.64	-9.43*	-1.53*	-1.69*	-1.28*	-2.96*	0.195*	0.91
	(-1.14)	(-6.04)	(-6.22)	(-6.49)	(-3.01)	(-5.96)	(5.31)	
Qatar	-53.64*	-3.78*	2.54*	-5.07*	-2.62*	-1.14*	0.127*	0.81
	(-6.35)	(-4.59)	(8.1)	(-3.22)	(-9.73)	(-5.53)	(3.02)	
Oman	-59.67*	-0.49*	-2.17*	-6.58*	-3.62*	-3.49*	0.021***	0.79
	(-13.93)	(-2.93)	(-9.02)	(-9.07)	(-12.38)	(-24.86)	(1.74)	
Malaysia	-10.53*	-0.533	-0.59*	-7.14***	-6.28***	-0.61***	0.099**	0.82
	(-2.40)	(-0.48)	(-5.35)	(-1.67)	(-1.64)	(-1.97)	(2.56)	
Korea	-10.36*	5.72*	-0.08**	-2.95*	-4.82*	-2.94*	-0.22*	0.94
	(-3.66)	(-4.81)	(-2.05)	(-6.38)	(-3.58)	(-4.83)	(-8.82)	
Panel	**-20.35***	**-2.027***	**1.259***	**3.73****	**-1.142***	**-0.643***	**0.092***	**0.93**
	(-8.72)	**(-4.702)**	**(4.74)**	**(2.41)**	**(-8.52)**	**(-3.56)**	**(3.25)**	

Note: t-stat reported in brakets.*,**,*** shows significance at 1%, 5 and 10 % level. Auto Schwar Certieria, Barklett and Bandwidth method is Neway-West Automatic

The variable of interest, migrant workers (log OP), has a positive and significant coefficient i.e. 0.092 indicting that Pakistani emigrants are contributing positively in export promotion. The results support that Pakistani emigrants bring with them knowledge about culture and heritage: hence they are instrumental in promotion of exports andreduce trade-related transaction cost. Emigrants create network knowledge of Pakistani markets, business and cultural ties such as common language and preferences, therefore, reduce trade-related transaction cost that creates additional demand for Pakistani products.

After getting necessary technical training in the destination countries, emigrants engage themselves ortheir friends in production of such products within Pakistan that were earlier imported. Thus, it is expected that as the stock of Pakistani migrants rises above some threshold level, their impact on Pakistani exports may further rise. The results are in-line with empirical findings of Akbari and Hyder (2011).

To calculate the monetary impact of each additional Pakistani migrant worker on exports between Pakistan and destination countries, we took the elasticity of exports with respect to Pakistani emigrants, evaluated at its average value and average of stock of Pakistani migrants. Each additional migrant contributed per year $ 200 to exports towards GCC, Malaysia and Korea.

Table 7
Short-Run Estimates: Error Correction Model

	KSA	**UAE**	**Bahrain**	**Kuwait**	**Qatar**	**Oman**	**Malaysia**	**Korea**
Dlog(xp(-1)	0.33***	0.38**	0.11**	0.048**	0.29***	0.32**	0.19**	-0.01**
	(-1.67)	(-2.)2	(-2.48)	(-2.28)	(-1.69)	(-2.13)	(-2.01)	(-2.15)
Dlog(xp(-2)	_	0.36**	_	-0.27***	-0.01**		0.36**	_
		(-2.09)		(-1.75)	(-2.09)		(-2.24)	

Dlog(yp)	-2.04***	-2.64***	_	_	_	-5.13**	_	_
	(-1.98)	(-1.83)				(-2.09)		
Dlog(yp(-1))	_	_	_	_	_	-9.15**	_	_
						(-2.72)		
Dlog(yj)	_	0.09**	1.48***	_	_	_	0.76**	5.50*
		(-2.73)	(-1.75)				(-2.42)	(-3.93)
Dlog(yj(-1))	_	0.17**	_	-1.05**	_	_	-0.26***	_
		(-2.44)		(-2.49)			(-1.78)	
Dlog(yj(-2))	_	_	_	0.53***	_	_	0.54***	_
				(-1.79)			(-1.67)	
Dlog(pp)	_	_	_	_	0.49***	2.53**	_	_
					(-1.76)	(-1.75)		
Dlog(pp(-1))	_	-7.09***	0.61**	3.04***	-0.22***	-1.78***	5.67***	-9.54***
		(-1.63)	(-2.21)	(-1.64)	(-1.74)	(-1.65)	(-1.64)	(-1.98)
Dlog(pj)	4.72**	_	-0.08**	_	_	2.57**	_	_
	(-2.16)		(-2.08)			(-2.76)		
Dlog(pj(-1)	4.51**	_	_	_	_	2.68***	_	_
	(-2.13)					(-1.64)		
Dlog(pj(-2))	_	0.63***	_	_	0.78***	_	_	_
		(-1.87)			(-1.68)			
Dlog(reer)	_	-1.28***	-1.06***	_	_	_	_	_
		(-1.84)	(-1.64)					
Dlog(reer(-1)	_	_	_	_	-0.83***	_	_	_
					(-1.94)			
Dlog(reer(-2)	_	1.19**	_	0.25**	0.92***	_	_	_
		(-2.05)		(-2.27)	(-1.65)			
	-0.65*	-0.88**	-0.61**	-0.32**	-0.39**	-0.90*	-0.78*	-0.47**
ECM(-1)	(-3.27)	(-2.05)	(-2.43)	(-2.40)	(-2.81)	(-4.39)	(-3.93)	(-2.67)
R2	0.591	0.47	0.42	0.46	0.498	0.63	0.56	0.46
Adj-R2	0.449	0.4618	0.41	0.43	0.42	0.483	0.433	0.493
S.E of Reg	0.214	0.013	0.0124	0.132	0.25	0.0312	0.032	0.035

Note: t-stat is given in brakets.*, **, *** shows significance at 1%, 5% and 10 % level.

The estimated short-run results (reported in Table 7)are in line with the long-run estimates. Negative sign of ECM term for each country indicatesthe existence of a long-run relationship emigration and exports from Pakistan. There is a fairly reasonable speed of adjustment between short term and long term equilibrium behavior of exports and its explanatory variables. The results of post estimation tests i,e Ramsey Reset, Normality and White-hetro test are satisfactory.For robustness, time-series tests and procedures are used (Table: 8).

Table 8
Generalized Least Square Estimation: (dependent variable: exports)

Variables	1	2	3	4	5
C	4.51**	6.14**	28.24*	10.38*	8.80*
	(2.51)	(2.73)	(10.69)	(4.35)	(3.38)
$logy_{pt}$	-2.68*	-2.66*	-2.38*	-3.09*	-2.12*
	(-3.06)	(-3.06)	(-3.18)	(-4.57)	(-3.14)
$logy_{tj}$	0.03**	0.03*	0.15*	0.11*	0.19*
	(2.61)	(3.72)	(5.31)	(4.97)	(5.76)
$logPop_{pt}$	0.63	6.10*	4.72*	6.05*	4.39*
	(0.41)	(4.10)	(3.78)	(5.20)	(3.83)
$logPop_{jt}$	0.33*	0.37*	0.671*	0.53*	0.42*
	(3.18)	(3.22)	(21.36)	(16.61)	(14.86)
logREER		-0.19	-0.21	-0.29**	-0.85*
		(-0.83)	(-1.04)	(-2.59)	(-4.31)
$logDist_{pjt}$			-2.68*	-0.005*	-0.01*
			(-30.07)	(-12.07)	(-10.74)
$logOP_{pjt}$				0.11*	0.07*
				(5.21)	(5.42)
D_Bah					-0.99**
					(-2.74)
D_Kor					0.68*
					(5.98)
D_KSA					-0.58*
					(-4.74)
D_Kuw					-0.65*
					(-7.20)
D_Qat					-0.767*
					(-6.57)
D_UAE					0.0627*
					(5.14)
D_Oman					-0.84*
					(-8.68)
D_Mal					-1.0**
					(-2.24)
R2	0.90	0.91	0.88	0.88	0.99
AdjR2	0.90	0.91	0.86	0.88	0.99
F-Stat	257.6	240.9	209.2	154.3	230.9
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
S.E of reg	0.4824	0.4821	0.615	0.657	0.4201

Note:*, **, *** indicate significance at 1%, 5% and 10 % level.

To check the robustness of results reported, we estimate the traditional gravity model of international trade. This model uses $Dist$ that indicates geographic distance between home and host country. Distance variable incorporates effect of transaction and transport cost of exports that rise with increase in distance. It represents all possible sources of international trade cost Javid, Sharif, and Alkhathlan (2018).Huge distance between trade partners reduces international trade

as well as investment. Therefore, the exports from Pakistan and distance are expected to be negatively related. In this study, distance between Pakistan's capital city, Islamabad and capital cities of respective importing countries is calculated by great circular formu The model has been estimated by using gravity model of estimation.

$$logexp_{pjt} = \alpha + \gamma logy_{pjt} + \beta logy_j + \pi logPop_{pt} + \partial logPop_{jt} + \mu logREER + \infty logDist_{pj} + \vartheta logOP_{pt} + \epsilon_t$$

Fixed Effects Model is largely criticized due to presence of heteroskedasticity of unknown form between the error term and independent variables. Therefore, Generalized Least Square (GLS) method is used to account for un-observed heteroskedasticity that could have resulted from correlation between the error term and independent variables. The coefficient of number of migrant workers in host countries (log op) is positive and statically significant. It indicates with one percent increase in growth rate of emigrants from Pakistan increases exports by 7 percent. The results of GLS are consistent with those obtained from panel FMOLs estimation.

Conclusion

The present study combines cross-sectional and time-series data to examine relationship between Pakistani emigrants in GCC countries, Malaysia and Korea and found their contribution in exports of Pakistan. The results indicate positive contribution of these workers in exports of Pakistan. The ECM results indicate reasonable speed of adjustment in short-run. Each additional Pakistani migrant worker per year contributed $ 200 in exports of Pakistan, towards these selected countries for the period 1980-2018. The result can be attributed to taste and preferences of migrants for "made in Pakistan products". It also has a strong implication for economic growth as indicated by Vohra (2001)for Philippines, Malaysia and Thailand. Same relationship can be developed for Pakistan. Since 2018, with a per capita income of $ 1197, Pakistan has now been a lower-middle-income country.

The findings of the study suggest that emigrants have good social, cultural and economic terms with foreign community; they developdemand for Pakistani products. Therefore, there is a need to promote potential liberal market polices to encourage exports. The export policy in developing countries also needs to review network of expatriates being a viable source of export promotion. Secondly, government can provide assistance to overseas workers to make them aware regarding investmentopportunities in Pakistan. Establishment of business by emigrants can prove helpful in promoting export. Thirdly, there is a need to open regional offices of Migrant Resource Centers (MRCs) to connect emigrant with residents and businesspersons. Pakistan can also facilitate overseas entrepreneurs inopening high-tech firms on pattern of China.

The network of facilities provided to already establish business of overseas Pakistanis, as Kentucky Fried Chicken, McDonalds, Reebok plant,need extension. Besides, Omer Libran Engineering Industries, Ghazi Fabrics, Bestway Cement and Food Industry are some the businesses established on basis of foreign-obtained skills. Such businesses can help abolishing import dependence and reduction in

unemployment. The results given, in the present study give input on the economic impact of emigration on developing countries. The results can be confirmed or denied on other similar topic based on survey studies in future.

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