Journal of Information Systems Engineering and Management
2025, 10(1s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Evaluating Business Investment Decisions: Destination Management and the Impact of Outward FDI on Indian Exports

Vrujesh Jalindar Salunkhe[1], Suresh Kumar Kashyap[2]

[1]*Research Scholar, Mittal School Of Business, Lovely Professional University, Phagwara, Panjab, India. salunkhevrujesh@hotmail.com ORCID: 0000-0002-4092-0501*

[2]*Professor, Mittal School Of Business, Lovely Professional University, Phagwara, Panjab, India. suresh.kashyap@lpu.co.in*

Corresponding Author: salunkhevrujesh@hotmail.com

ARTICLE INFO

Received: 01 Oct 2024

Revised: 30 Nov 2024

Accepted: 10 Dec 2024

ABSTRACT

Indian outward foreign direct investment (OFDI) has experienced significant growth, reflecting its critical role in driving India's economic expansion as an emerging economy. This study examines the selection criteria for Indian OFDI destinations by considering national distance across five dimensions: geographical, cultural, institutional, economic, and informational. Utilizing data from 2011 to 2023, the analysis employs EViews 12.0 and compares OFDI flows to the top 30 countries during this period. The OFDI size determination model highlights that while geographical, cultural, economic, and informational distances do not significantly influence destination choices, institutional distance emerges as a key determinant, emphasizing the importance of institutional factors. The study also investigates the impact of OFDI on Indian exports, revealing a long-run relationship. The findings suggest that Indian OFDI may either enhance exports by generating demand for intermediary products or substitute traditional exports through cost-effective and efficient entry modes like FDI. These insights provide valuable implications for policymakers and businesses aiming to optimize India's global investment and trade strategies.

Keywords: OFDI, Location choices, Export, Management, Indian Economy, Distances, Business Investment Decision

1. INTRODUCTION

As the Indian economy evolved and regulations became more liberalized, Indian companies increasingly sought growth through inorganic expansion in global markets [1]. Despite not having fully acquired the technological know-how to drive large-scale shifts in production like developed countries, Indian firms have significantly advanced, particularly in knowledge-based industries such as pharmaceuticals, information technology, telecommunications, software, and automobiles. Initially, Indian firms were merely adopters of foreign technology, but over time, they have strengthened their capabilities. Today, many Indian corporations recognize the need to move beyond exports and establish a physical presence overseas [2]. This drive to expand into foreign markets is further fueled by the opportunities to access new markets, increase profitability, and gain a competitive edge, thereby fostering both Indian outward foreign direct investment (OFDI) and exports.

A key factor influencing OFDI is the concept of national distance [3], encompassing geographical, cultural, institutional, economic, and informational dimensions [4]. Scholars argue that economic globalization has either magnified national heterogeneity or diminished differences between countries as developing nations converge with developed economies. This study adopts the perspective that deepening globalization accentuates the heterogeneity among nations, making national distance a critical determinant in the location choice of OFDI.

The relationship between outward foreign direct investment (OFDI) and exports has garnered significant attention in international business literature, particularly in recent years [5]. Traditionally, developed countries have been the primary source of OFDI, driven by their superior technological capabilities and financial resources to penetrate large

foreign markets. However, the past two decades have witnessed a paradigm shift, with emerging economies like India emerging as major contributors to global FDI flows. India, in particular, has accounted for a significant share of OFDI among emerging economies, underscoring its growing role in the global investment landscape.

Understanding the impact of OFDI on a home country's exports is crucial to evaluating whether foreign production substitutes or complements domestic trade. OFDI that substitutes home country exports may negatively affect the balance of payments by leading to a net outflow of resources and funds [6]. In such cases, the economy misses the potential demand from its multinational enterprises (MNEs) sourcing inputs domestically. Conversely, complementary OFDI strengthens home exports by fostering forward and backward linkages with domestic firms, thereby generating foreign exchange, stimulating domestic investments, and accelerating economic growth [7]. Despite its importance, the nature of the relationship between OFDI and exports remains ambiguous, with studies presenting mixed results.

Drawing on the Eclectic Theory of International Production [8], this study investigates the impact of national distance—comprising geographical, cultural, institutional, economic, and informational dimensions—on Indian OFDI location decisions. It further explores how Indian OFDI influences home country exports, providing insights into whether outward investments act as substitutes or complements to trade. By combining theoretical and empirical analyses, this study offers a comprehensive understanding of the interplay between national distance, OFDI location choices, and export dynamics, contributing to the broader discourse on the internationalization strategies of emerging economies like India.

This study explores how the heterogeneity of geographical, cultural, institutional, economic, and informational distances across countries influences the location choices of Chinese OFDI. By adopting a national distance perspective and utilizing the OFDI size determination model, it empirically analyzes the impact of these distance-based factors on Chinese OFDI decisions. The study contributes to the understanding of how diverse national environments shape investment patterns, providing valuable insights for optimizing location strategies. Its findings offer practical guidance for Chinese enterprises in making informed OFDI decisions and enhancing investment returns, ultimately supporting more effective international expansion.

2. HYPOTHESIS CONSTRUCTION

Building on existing research, the study builds a hypothesis to examine the correlation between various dependent and control variables of Indian OFDI to evaluate their influence on OFDI location choices and exports.

2.1 Location Selection

The selection of investment locations for Indian outward foreign direct investment (OFDI) is influenced by various national distance factors [9], each playing a unique role in shaping decision-making. Geographical distance, rooted in Cost Theory, suggests that greater distances increase transportation and information acquisition costs, thereby reducing the willingness of enterprises to invest [10]. Cultural distance, as highlighted by Transaction Cost Theory, emphasizes the higher transaction and operating costs associated with cultural differences, leading to increased investment risks and reduced attractiveness of distant locations. Institutional distance, reflecting disparities in institutional environments between home and host countries [11], introduces risks and higher transaction costs, which may deter investment by lowering expected returns. Economic distance presents a more debated perspective, where closer economic proximity may facilitate market-seeking OFDI by aligning economic size and consumption demand structures. Informational distance [12], reflecting disparities in informational development levels, also impacts national productivity and competitiveness, further shaping OFDI decisions. Beyond these distance factors, host country attributes such as economic development level, economic freedom, and trade closeness are significant determinants. Improved economic development levels and strong economic ties between countries enhance the attractiveness of the host country for Indian OFDI. Based on these theoretical foundations, the study formulates hypotheses to investigate the impact of geographical, cultural, institutional, economic, and informational distances on the location choices of Indian OFDI. Thus, the study states hypotheses based on this theory and analyzes them to determine the overall decision for OFDI location selection.

H1: Geographical distance is not significantly correlated with the location choice of Indian ODFI.

H2: Cultural distance is not significantly correlated with the location choice of Indian OFDI.

H3: Institutional distance is not significantly correlated with the location choice of Indian OFDI.

H4: Economic distance is not significantly correlated with the location choice of Indian OFDI.

H5: Informational distance is not significantly correlated with the location choice of Indian OFDI.

2.2 OFDI and Indian Export

The hypotheses regarding the relationship between outward foreign direct investment (OFDI) and exports are shaped by the complex and debated interaction between these two economic activities. Traditional trade theories suggest that OFDI substitutes exports by shifting production abroad, thereby reducing trade from the home country [13]. In contrast, recent empirical studies propose a complementary relationship, where OFDI boosts exports, especially for intermediate goods, when host-country suppliers cannot meet production requirements [14]. Internalization theory views OFDI and exports as alternative market entry strategies, influenced by factors such as cost efficiency and trade barriers. The impact of OFDI depends on its type [15]. A horizontal OFDI, driven by the proximity-concentration trade-off, often displaces exports by directly serving foreign markets, while vertical OFDI, aimed at exploiting cost advantages or resources in less-developed economies, tends to complement exports by increasing the demand for intermediate goods from the home country.

Based on these theoretical insights, hypotheses are designed to examine whether OFDI acts as a substitute for or complement to exports, the presence of long-term and short-term relationships, and the direction of causality between the two. Host-country attributes, such as market size, trade policies, and infrastructure, along with firm-specific motivations, significantly influence these hypotheses, allowing for a detailed analysis of OFDI's effects on India's export dynamics. The hypotheses in this study are developed based on theoretical and empirical insights into the relationship between outward foreign direct investment (OFDI) and exports in the Indian economy. Thus, the study states the hypotheses as below considering both economic theories and observed trends and ensuring a comprehensive exploration of the dynamics.

H6: There is a long run relationship between exports and OFDI.

H7: Exports and OFDI are substitutes for each other.

H8: There is a long run causality running from OFDI towards home countries' exports.

H9: There is a long run causality running from home countries' exports towards OFDI

3. METHODOLOGY

The proposed method examines the national distance of OFDI locations from India and the impact of OFDI on Indian exports. Statistical analysis is conducted using EViews 12.0, enabling the identification of statistical significance and correlations between variables. The study employs a balanced dataset of Indian OFDI and exports, incorporating trade openness data from UNCTAD Statistics and the World Development Indicators in the World Bank database. Given the longitudinal nature of the data, appropriate analytical techniques are applied.

Dataset: The dataset spans July 2011 to July 2023, offering a comprehensive view of India's OFDI patterns. It includes variables such as economic distance (INECO), informational distance (ININFO), institutional distance (ININS), geographical distance (INDIS), and cultural distance (INCUL) for the top 30 investment destinations. Additionally, it analyzes Indian OFDI and exports using data on exports (EXPO), exchange rates (EXR), and trade openness (TRD). This robust dataset provides critical insights into the dynamics of Indian OFDI and its influence on export activities.

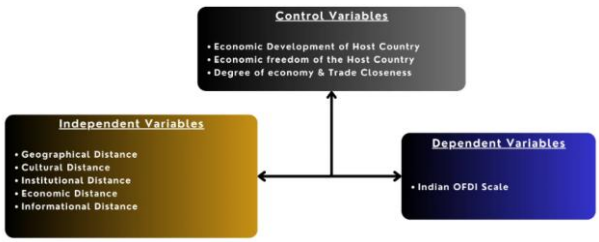


Figure 1: Conceptual Model For Selection of OFDI Location

3.1 Location Selection

To determine the appropriate model for panel data analysis, F-tests and Hausman tests were conducted using EViews 12.0 statistical software. The F-test, with an F-statistic of 2.2034 (p = 0.0703), indicated moderate explanatory power and rejected the null hypothesis, suggesting that a mixed-effect model is not suitable. Subsequently, the Hausman test was performed, yielding a p-value below 0.1, which led to the rejection of the null hypothesis and demonstrated that the random-effect model is not appropriate. This result supports the use of a fixed-effect model, as it accounts for the correlation between unobserved variables and the independent variables. Consequently, the "fixed-effect model" was selected for the empirical study, ensuring that country-specific characteristics influencing INOFDI are appropriately captured.

It used the OFDI size determination model to analyse the effect of national distance on the location choice of Indian OFDI. The model is based on the commonly used traditional trade gravity model, which predicts trade flows based on factors like distance and economic size in economics. To enhance the stability of the variables and reduce heteroscedasticity, converting all variables (except "inten") into their natural logarithms in addition to addressing potential endogeneity between the dependent and independent variables by some independent variables in the model lagged by one period, as shown in the formula.

$$\ln ofdi_{ijt} = C_0 + C_1 \ln dis_{ijt} + C_2 \ln cul_{ijt} + C_3 \ln ins_{ijt} + C_4 \ln eco_{ijt} + C_5 \ln info_{ijt} + C_6 \ln gdppc_{ijt} + C_7 \ln inten_{ijt} + C_8 \ln infree_{ijt} + \mu_j \varepsilon_{ijt} \quad (1)$$

In this equation, *ln* signifies the natural logarithm transformation. Here, i and j represent India and the host country, respectively. It shows the constant term C_o and error term ε_{ijt} along with year t representing a year. In addition, the nation-specific fixed effect μ_j accounts for country-level differences that remain constant over time.

3.2 Impact on Export

The model formulation includes long-term and short-term causality in an econometric framework, particularly using error correction models (ECMs) and co-integration analysis. In Model 1, Dependent Variable D(EXPO) represents the changes in exports, and it is explained by the lagged values of exports, and OFDI, capturing both the long-term equilibrium relationship and short-term dynamics. When variables are co-integrated, they share a long-term equilibrium relationship, even if short-term deviations occur.

The Dependent Variable D(EXPO) is given by

$$D(EXPO) = C(1) * (EXPO(-1) - 1.45371649975 * \mathrm{OFDI}(-1) - 178775.462317) + \mathrm{C}(2) * \mathrm{D}\big(\mathrm{EXPO}(-1)\big) + \mathrm{C}(3) * \mathrm{D}\big(\mathrm{OFDI}(-1)\big) + \mathrm{C}(4) \quad (2)$$

The coefficient of the error correction term (C(1)) in the co-integrating equation measures the speed of adjustment toward this equilibrium. If C(1) is negative and statistically significant, it indicates that deviations from the long-term relationship are corrected over time, confirming the existence of a long-term causal relationship between the variables. To test for short-term causality, the Wald test is applied to the coefficients of lagged explanatory variables, such as C(3). The null hypothesis in the Wald test posits that the coefficients of these lagged variables are equal to zero, thus no short-term causality exists.

In Model 2, the dependent variable D(OFDI) represents the short-term changes in OFDI, which are influenced by its own lagged value, the lagged value of exports (EXPO), and the error correction term. The model also includes the short-term dynamics captured by the lagged changes in OFDI and EXPO, with each term weighted by their respective coefficients.

$$D(OFDI) = C(1) * (OFDI(-1) - 0.687892034086 * EXPO(-1) - 122978.216418) + \mathrm{C}(2) * \mathrm{D}\big(OFDI(-1)\big) + \mathrm{C}(3) * \mathrm{D}\big(EXPO(-1)\big) + \mathrm{C}(4) \quad (3)$$

The coefficient C(1) represents the speed at which the system adjusts toward long-run equilibrium. In contrast, the coefficient C(3) captures the short-term causality between them. A negative and significant value of C(1) indicates the presence of a long-term causal relationship between the two variables.

4. RESULT ANALYSIS

The results of the statistical analysis using EViews 12.0 software are discussed in this section for hypotheses regarding location choices and the impact of OFDI on Indian exports.

4.1 Location Selection

In this study, EViews 12.0 statistical software is used to perform a Pearson correlation test to check for correlations among the independent variables. Including multiple variables increases the likelihood of inter-variable correlation, so this test helps identify potential multicollinearity, ensuring the robustness of the analysis.

a. Correlation analysis

Table 1 shows that Institutional Distance (ININS) has a moderate negative correlation (-0.4102) with Outward Foreign Direct Investment (OFDI) and a p-value of 0.0244. This suggests that higher institutional quality differences discourage OFDI, supporting the hypothesis that institutional disparities influence investment decisions. Trade Closeness (INDIS) is negatively correlated with Geographical Distance implying that increased trade integration reduces the perceived impact of geographical distance. This aligns with the hypothesis that trade closeness mitigates the effects of physical distance between countries.

Table 1: Correlation coefficient matrix

Covariance Correlation Probability	INOFDI	INDIS	INCUL	ININS	INECO	ININFO	INGDPPC	INTEN	INFREE
INOFDI	1.903938 1.000000 -----								
INDIS	0.091830 0.126459 0.5055	0.276961 1.000000 -----							
INCUL	-0.056696 -0.026954 0.8876	-0.207083 -0.258125 0.1684	2.323854 1.000000 -----						
ININS	0.053757 0.107951 0.5702	0.072598 0.382241 0.0371	-0.049585 -0.090093 0.6359	0.130245 1.000000 -----					
INECO	0.469169 0.093298 0.6239	-0.245896 -0.128207 0.4996	-2.763619 -0.497444 0.0052	0.136876 0.104068 0.5842	13.28186 1.000000 -----				
ININFO	-0.069484 -0.082954 0.6530	0.009880 0.030925 0.8711	0.417762 0.451443 0.0123	-0.089866 -0.410196 0.0244	-1.652476 -0.746937 0.0000	0.368505 1.000000 -----			
INGDPPC	0.172502 0.104814 0.5815	0.172874 0.275403 0.1407	-0.059652 -0.032807 0.8634	0.323639 0.751847 0.0000	-0.206796 -0.047573 0.8029	-0.271826 -0.375421 0.0409	1.422665 1.000000 -----		
INTEN	0.015719 0.170938 0.3664	-0.015392 -0.438981 0.0153	0.036571 0.369578 0.0507	-0.010944 -0.455022 0.0115	-0.030962 -0.127481 0.5020	0.018018 0.445370 0.0136	-0.048694 -0.612588 0.0003	0.004441 1.000000 -----	
INFREE	0.046713 0.268889 0.1508	0.020608 0.311016 0.0943	0.005833 0.030391 0.8733	0.039030 0.858969 0.0000	0.013211 0.028791 0.8800	-0.031043 -0.406166 0.0259	0.109883 0.731709 0.0000	-0.004318 -0.514648 0.0036	0.015852 1.000000 -----

Table 1 shows that the absolute values of the correlation coefficients among the variables are all less than 0.85. Thus, multi-collinearity does not exist among these variables. To ensure their correlation, a variance inflation factor (VIF) test is conducted, as shown in Table 2 below. To further verify the correlation among the variables, the variance inflation factor test (VIF test) is performed. The test results are shown in Table 2 below.

Table 2: VIF test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	208.9837	4239.890	NA
INGDPPC	0.124948	266.6285	3.606409
INFREE	15.57366	5742.064	5.008546
INTEN	28.39950	4.263852	2.558958
INDIS	0.309007	469.8220	1.736320
INCUL	0.040219	3.328914	1.896197
ININS	2.084690	542.0268	5.508625
INECO	0.013148	30.19700	3.542820
ININFO	0.598460	23.76165	4.474252

b. Regression results and analysis

After confirming the absence of multi-collinearity through correlation analysis, multiple regression analysis is conducted using the Ordinary Least Squares (OLS) method. The analysis is carried out using Eviews 12.0. The results of the regression are presented in Table 3, providing insights into the significance and fit of the model.

It can be seen from Table 3 that DW is in the vicinity of 1.28, indicating that there is a potential positive autocorrelation of the model. The significance level (Prob.) of the F test is less than 0.10, indicating that the model significantly passes the F test at the 10% level. R^2(0.4563) indicates that the explanatory power of the independent

variables is moderate, and the goodness-of-fit of the model is adequate. The specific analyses of the research results in this study are as follows.

Table 3: Regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-46.70590	14.45627	-3.230841	0.0040
INGDPPC	0.547811	0.353480	1.549763	0.1361
INFREE	12.16109	3.946347	3.081606	0.0057
INTEN	17.22500	5.329118	3.232243	0.0040
INDIS	0.953816	0.555884	1.715855	0.1009
INCUL	-0.212413	0.200547	-1.059167	0.3016
ININS	-3.751316	1.443845	-2.598142	0.0168
INECO	0.105147	0.114663	0.917011	0.3695
ININFO	0.169720	0.773602	0.219389	0.8285

R-squared	0.456344	Mean dependent var	7.631128
Adjusted R-squared	0.249237	S.D. dependent var	1.403421
S.E. of regression	1.216017	Akaike info criterion	3.472363
Sum squared resid	31.05262	Schwarz criterion	3.892722
Log likelihood	-43.08545	Hannan-Quinn criter.	3.606840
F-statistic	2.203419	Durbin-Watson stat	1.280588
Prob(F-statistic)	0.070300		

c. Robustness test

In order to ensure the credibility of the research results, a robustness test is required. Based on the robustness test results in Table 4, it is evident that Indian OFDI has market-seeking motivations. These findings confirm that factors such as host country economic freedom, trade relationships, and institutional quality differences significantly influence Indian OFDI decisions.

Table 4: Robustness Test

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-49.33959	15.59621	-3.163562	0.0016
INGDPPC	0.532655	0.381354	1.396746	0.1625
INFREE	12.87008	4.257536	3.022894	0.0025
INTEN	17.26113	5.749344	3.002278	0.0027
INDIS	1.007664	0.599718	1.680230	0.0929
INCUL	-0.175054	0.216361	-0.809081	0.4185
ININS	-3.952992	1.557700	-2.537711	0.0112
INECO	0.113164	0.123705	0.914788	0.3603
ININFO	0.183192	0.834604	0.219496	0.8263

Robust Statistics

R-squared	0.420742	Adjusted R-squared	0.200072
Rw-squared	0.521190	Adjust Rw-squared	0.521190
Akaike info criterion	40.32909	Schwarz criterion	56.75765
Deviance	27.39932	Scale	1.023670
Rn-squared statistic	16.13470	Prob(Rn-squared stat.)	0.040492

Non-robust Statistics

Mean dependent var	7.631128	S.D. dependent var	1.403421
S.E. of regression	1.218979	Sum squared resid	31.20408

Although variables such as cultural distance, economic distance, and informational distance were not statistically significant ($p > 0.05$), the overall robustness test results show consistency with the empirical findings. These results reinforce the reliability of the research conclusions and underscore the importance of host country characteristics in shaping Indian OFDI flows. Despite the lack of significance for some variables, the model's moderate explanatory power ($R^2 = 0.420742$) and robustness checks enhance the credibility of the results, confirming the relevance of institutional distance and host country characteristics in influencing Indian OFDI decisions.

4.2 Impact on Export

The study conducts a Group unit root test to assess the stationarity of variables. The results show that EXPO, OFDI, EXR, and TRD are non-stationary at level but become stationary at their first difference, indicating they are I(1). These findings confirm the absence of unit roots, reducing the risk of spurious regression and enhancing the reliability of further analyses like co-integration and causality testing. Additionally, the IPS unit root test reveals that exports (EXPO) are non-stationary, requiring transformations, while OFDI, EXR, and TRD are stationary and can be used directly in regression models.

Table 5: Group Unit Root tests

Group unit root test: Summary
Series: EXPO, OFDI, EXR, TRD
Date: 10/15/24 Time: 17:10
Sample: 1 30
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.27387	0.0000	4	116
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.16115	0.0000	4	116
ADF - Fisher Chi-square	58.8916	0.0000	4	116
PP - Fisher Chi-square	62.3555	0.0000	4	116

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

a. Centered Long Run Covariance test

The covariance results between the variables exports (EXPO), Outward Foreign Direct Investment (OFDI), exchange rate (EXR), and trade openness (TRD) reveal several interesting relationships as shown in Table 6.

Table 6: CLRC tests

Centered Long-run Covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)				
	EXPO	OFDI	EXR	TRD
EXPO	8.87E+13	3.05E+10	54523209	-83531924
OFDI	3.05E+10	96126288	-124207.8	-123140.2
EXR	54523209	-124207.8	1074.627	835.5884
TRD	-83531924	-123140.2	835.5884	4477.738

The large covariance between OFDI and EXPO indicates that increased outward investments drive exports, fostering economic activity and trade. In contrast, the smaller covariance between EXPO and EXR shows a weaker impact of exchange rates on exports. A negative covariance between EXPO and TRD suggests that greater trade openness might reduce exports due to structural factors. The low negative covariance between OFDI and EXR implies minimal exchange rate influence on OFDI, while a modest positive covariance between OFDI and TRD suggests trade openness slightly encourages investments. The weak positive covariance between EXR and TRD indicates a minor effect of exchange rates on trade openness. Overall, OFDI and trade openness have a stronger influence on exports than exchange rates.

b. Engle-Granger Cointegration Test

The Engle-Granger Cointegration Test was applied to evaluate the long-term equilibrium relationships among the variables. Table 7 shows the results of the Engle-Granger cointegration test. The results show varying degrees of cointegration among the variables. The test indicates strong cointegration for EXR and TRD, moderate evidence for OFDI, and no significant long-term relationship for EXPO within the dataset. Overall, most of the test statistics are significant, indicating the presence of cointegration among the variables. Based on these findings, we reject the null hypothesis of no cointegration for the significant variables and conclude that a long-run relationship exists among most variables. The test results confirm the presence of cointegration, reflecting a stable long-term equilibrium for the system.

Table 7: Engle-Granger cointegration test

Engle-Granger Cointegration Test

Date: 10/15/24 Time: 17:36
Series: EXPO EXR OFDI TRD
Sample: 1 30
Included observations: 30
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministics: C
Automatic lags specification based on Schwarz criterion (maxlag=6)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
EXPO	-3.405001	0.2853	-22.94084	0.0631
EXR	-4.987464	0.0195	-27.23007	0.0160
OFDI	-4.312540	0.0698	-23.48441	0.0540
TRD	-5.243923	0.0116	-28.88871	0.0087

*MacKinnon (1996) p-values.

Intermediate Results:

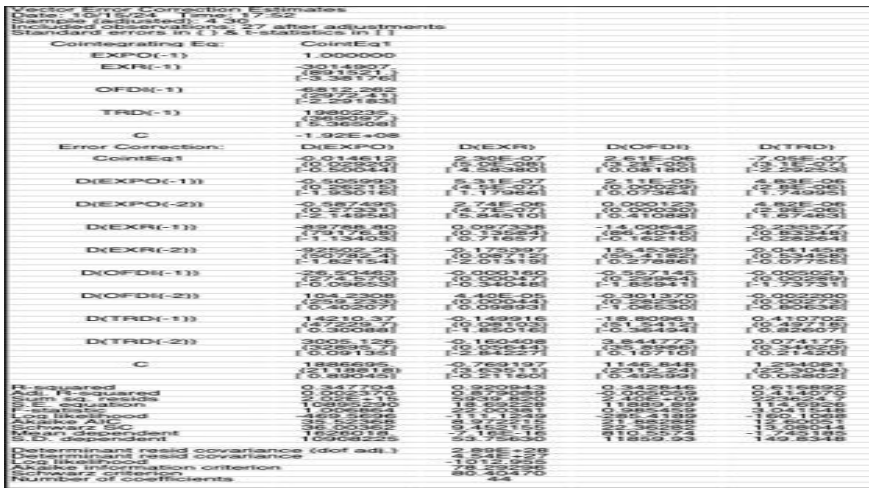
	EXPO	EXR	OFDI	TRD
Rho - 1	-0.791064	-0.938968	-0.809807	-0.996163
Rho S.E.	0.232324	0.188266	0.187780	0.189965
Residual variance	7.47E+13	1239.680	64173362	7973.459
Long-run residual variance	7.47E+13	1239.680	64173362	7973.459
Number of lags	0	0	0	0
Number of observations	29	29	29	29
Number of stochastic trends**	4	4	4	4

**Number of stochastic trends in asymptotic distribution

c. Vector error correction model (VECM)

The results of the estimated ECMs are presented in Table 8. To test for short-run causality, the Wald test was conducted. The test statistics were found to be insignificant in both directions, leading to the acceptance of the null hypothesis that the coefficients of the lagged explanatory variables are equal to zero. Thus, there is no evidence of bidirectional short-run causality between exports and OFDI. These findings are detailed in Table 8. The VECM helps to evaluate the proposed hypotheses concerning the relationship and causality between exports and OFDI.

Table 6: VECM test



5. DISCUSSION:

5.1 Location Selection Hypotheses

Based on the statistical results and data from the top 30 countries receiving Indian OFDI, the hypotheses are explained as follows. The correlation analysis plays an important role in testing these hypotheses.

The study investigates various factors influencing Indian outward foreign direct investment (OFDI) location decisions through five hypotheses. H1 posits that the geographical distance between India and the host country does not significantly affect OFDI decisions. With a p-value greater than 0.05, H1 is confirmed, as geographical distance is not significantly correlated with Indian OFDI at a 50.55% level. This indicates that physical distance does not play a critical role in determining location choices. H2 suggests that cultural distance does not significantly influence OFDI decisions. With a high p-value (>0.05), H2 is also confirmed, showing that cultural differences are not significantly correlated with Indian OFDI at an 88.76% level, implying minimal impact of cultural norms on location selection.

H3 focuses on institutional distance, hypothesizing that variations in regulatory quality or governance do not significantly affect Indian OFDI. The p-value exceeding 0.05 confirms H3, with an 88.16% level of non-significance,

suggesting institutional differences are not a key determinant. H4 examines economic distance, measured by GDP differences, and concludes that it does not significantly influence OFDI decisions. Although its correlation is relatively higher, the p-value (0.0939) still exceeds 0.05, confirming H4 with a 9.39% level of non-significance. This implies that disparities in economic development between India and host countries do not heavily impact location choices.

Lastly, H5 addresses informational distance, defined as differences in information and communication technology development. With a p-value well above 0.05, H5 is confirmed, indicating no significant correlation at a 65.30% level. This suggests that differences in informational infrastructure have minimal influence on Indian OFDI decisions. In conclusion, all hypotheses of geographical, cultural, institutional, economic, and informational distance are confirmed as not significantly correlated with Indian OFDI location choices, highlighting their limited role in shaping investment decisions.

Indian OFDI is expanding beyond neighboring countries like Sri Lanka, UAE, and Oman to distant nations such as the US, British Virgin Islands, and the Cayman Islands, indicating that geographical distance has a diminishing impact due to strong resource-seeking motivations. Indian investments also flow into culturally distinct countries like Bermuda, Russia, and Saudi Arabia, showing that cultural distance is becoming less significant as shown in Figure 2.

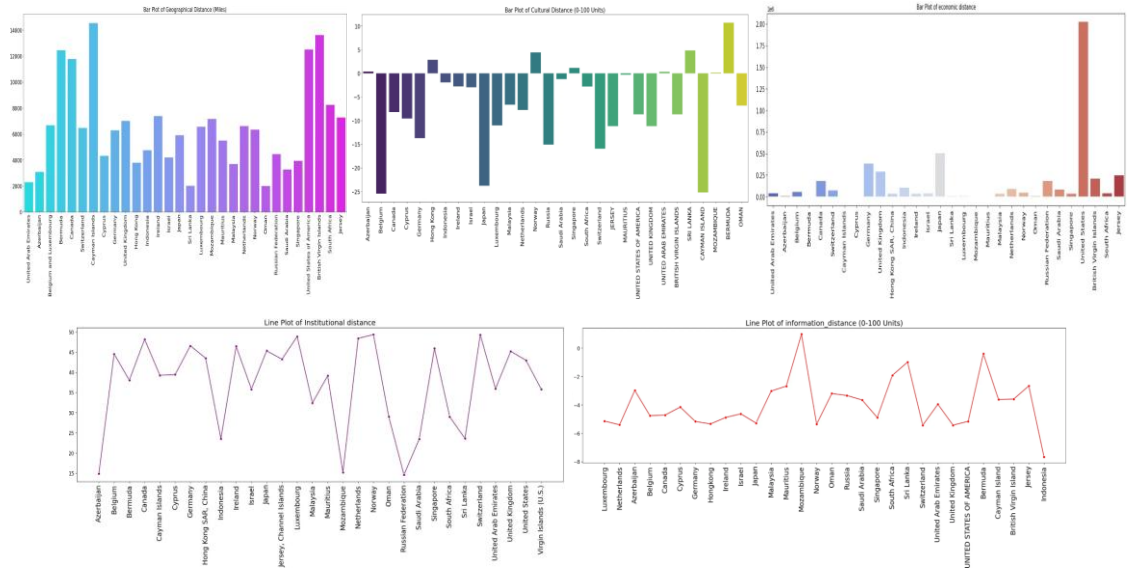


Figure 2: a) Geographical Distance b) Cultural Distance c) Economic Distance d) Institutional Distance e) Informational Distance of Countries

OFDI is concentrated in developing countries with larger institutional distances, such as Singapore and Luxembourg, where reduced institutional costs enhance competitiveness. Additionally, economic and informational disparities between India and host countries, such as Indonesia, Japan, and the Netherlands, positively correlate with OFDI growth. However, informational distance does not significantly influence Indian OFDI decisions, as investments continue in regions like Mozambique and Bermuda due to other factors like resource availability and market potential.

5.2 Impact on Export Hypotheses

Based on the VECM results, the hypotheses can be explained as follows. The presence of a long-run relationship is indicated by the significance of the error correction term (ECT). The VECM results reveal that there is a significant and negative ECT for the direction from exports to OFDI, which establishes a long-run equilibrium adjustment between the two variables in this direction. However, the ECT is positive for the direction from OFDI to exports, violating the condition for a valid long-run relationship in this direction. Therefore, there is evidence supporting a long-run relationship between exports and OFDI (H6), but it is unidirectional, running from exports to OFDI.

The substitution effect between exports and OFDI (H7) is indirectly supported by the findings. While exports demonstrate a long-run influence on OFDI, the lack of reciprocal causality suggests that OFDI does not reinforce or complement exports. This asymmetry could imply that firms shift from exports to foreign direct investment as a

means to access foreign markets directly, reducing reliance on exports and treating OFDI as a substitute rather than a complement. The results reject hypothesis H8 since the ECT for the direction from OFDI to exports is positive and significant, which does not satisfy the required condition for long-run causality. This indicates that OFDI does not have a long-term causal influence on exports. Thus, foreign affiliates established through OFDI do not significantly contribute to increasing home country exports in the long run (H8). Hypothesis H9 is supported by the results as ECT for the direction from exports to OFDI is both negative and significant, demonstrating the existence of long-run causality (H9). This suggests that the exports of the home country play a significant role in driving outward foreign direct investment over time, potentially as firms use exports as a stepping stone to establish a more permanent presence in foreign markets through OFDI. Thus, the results provide evidence for H6 and H9 while rejecting H7 (in favour of substitution) and H8. These insights highlight the asymmetric relationship between exports and OFDI, where exports influence OFDI but not vice versa.

Trade openness, measured as the ratio of exports and imports to GDP, varies across countries, reflecting their global economic integration. Figure 3 shows Indian OFDI in nations with different trade openness levels, exchange rates and Indian exports. High-openness economies like Hong Kong SAR, Luxembourg, and Singapore heavily rely on international trade, while the UAE, Cyprus, and Ireland show moderate openness, and the Russian Federation, Saudi Arabia, and South Africa exhibit lower levels. The data suggests a link between trade networks and OFDI. Exchange rates, indicating currency value relative to others, influence trade and OFDI. Countries like Indonesia, Japan, and Russia have higher exchange rates, increasing investment costs, while Azerbaijan, Bermuda, the U.S., the U.K., and Eurozone nations (e.g., Cyprus, Germany, and Ireland) with lower rates provide favourable conditions. This reflects Indian OFDI's focus on stable, high-value, and cost-competitive markets. The U.S. is the largest destination, followed by Germany, Japan, the U.K., and Hong Kong. Moderate export volumes are seen in the Netherlands, Canada, the UAE, and Singapore, while Mozambique, Cyprus, and Bermuda show lower volumes. This highlights India's focus on key economies and a diverse global export strategy.

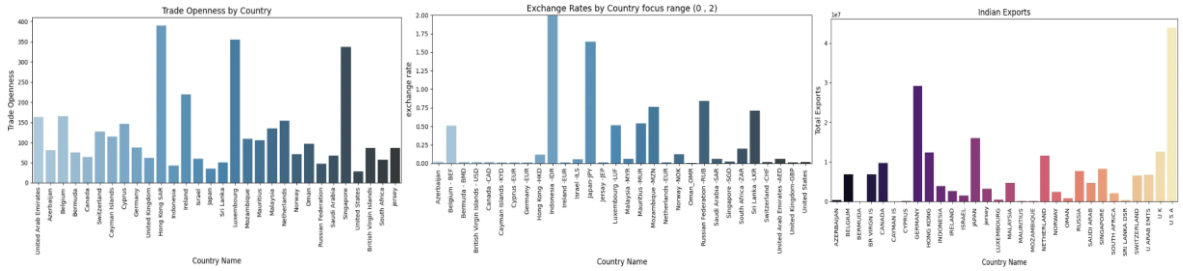


Figure 3: a) Trade openness b) Exchange rates c) Indian Exports in different countries

6. CONCLUSION

This study provides valuable insights into the factors influencing the selection of investment locations for Indian outward foreign direct investment (OFDI) and its impact on home-country exports. The statistical regression analysis reveals that geographical, cultural, and informational distances do not significantly affect Indian OFDI location decisions, while institutional distance plays a pivotal role, highlighting the importance of stable and supportive institutional environments. Economic distance similarly lacks a significant influence, suggesting that disparities in economic development do not deter Indian companies from pursuing OFDI opportunities. Robustness tests confirm these findings, further solidifying the non-significance of cultural, economic, and informational distances.

In examining the relationship between Indian OFDI and exports, the study finds evidence of a significant long-run connection characterized by substitution effects. The bidirectional causality analysis demonstrates that OFDI significantly influences exports in both the short and long run, while exports impact OFDI primarily over the long term. This interconnectedness underscores the dual role of OFDI in enhancing exports by creating demand for intermediary products and serving as a substitute for traditional export models. These findings highlight the need for integrated policies that consider both OFDI and exports as interdependent components of India's economic strategy, aimed at fostering sustainable growth and global competitiveness.

REFERENCES

[1] A. Sur, A. Nandy, and P. Ray, "Does foreign currency borrowing make firms vulnerable? Experience of

emerging India," *J. Policy Model.*, vol. 46, no. 3, pp. 530–551, May 2024, doi: 10.1016/j.jpolmod.2024.01.003.

[2] K. Aktaş and V. Gattai, "Inward FDI, outward FDI, and firm-level performance in India," *Eurasian Geogr. Econ.*, vol. 64, no. 2, pp. 139–172, Feb. 2023, doi: 10.1080/15387216.2021.1980415.

[3] J.-D. Kim and I.-S. Rang, "Outward FDI and exports: The case of South Korea and Japan," *J. Asian Econ.*, vol. 8, no. 1, pp. 39–50, Mar. 1997, doi: 10.1016/S1049-0078(97)90004-X.

[4] I. Campari and A. Frank, "Cultural Differences and Cultural Aspects in Geographical Information Systems," in *Cognitive Aspects of Human-Computer Interaction for Geographic Information Systems*, Dordrecht: Springer Netherlands, 1995, pp. 249–266. doi: 10.1007/978-94-011-0103-5_18.

[5] Z. Yan, S. Sui, F. Wu, and L. Cao, "The Impact of Outward Foreign Direct Investment on Product Quality and Export: Evidence from China," *Sustainability*, vol. 15, no. 5, p. 4227, Feb. 2023, doi: 10.3390/su15054227.

[6] C. Yuan, Z. Han, and H. Wu, "The impact of trade barriers on outward foreign direct investment: Evidence from Chinese manufacturing firms," *Rev. Dev. Econ.*, Aug. 2024, doi: 10.1111/rode.13151.

[7] S. Zhang, C. Chen, and H. Li, "Can outward FDI promote export diversification for emerging economies? Firm-level evidence from China," *Struct. Chang. Econ. Dyn.*, vol. 68, pp. 269–280, Mar. 2024, doi: 10.1016/j.strueco.2023.10.009.

[8] A. Goldar, "Explaining Firm-Level Manufacturing Outward FDI from India Under Alternate Theoretical Frameworks," *J. Int. Commer. Econ. Policy*, vol. 15, no. 02, Jun. 2024, doi: 10.1142/S1793993324500066.

[9] R. Nayyar and J. M. Luiz, "Location choice and Indian outward foreign direct investment: institutional thresholds and differentiating between institutional quality and institutional distance," *J. Institutional Econ.*, vol. 20, p. e6, Dec. 2024, doi: 10.1017/S1744137423000292.

[10] Y. Chen, M. Chen, and L. Tian, "What determines China's energy OFDI: Economic, geographical, institutional, and cultural distance?," *Energy Strateg. Rev.*, vol. 47, p. 101084, May 2023, doi: 10.1016/j.esr.2023.101084.

[11] X. Wang and S. Anwar, "Institutional distance and China's horizontal outward foreign direct investment," *Int. Rev. Econ. Financ.*, vol. 78, pp. 1–22, Mar. 2022, doi: 10.1016/j.iref.2021.09.012.

[12] M. N. Bhat, F. Ikram, and M. N. Rahman, "Foreign Direct Investment and Imports in India: Exploring Institutional Dimensions," *J. Knowl. Econ.*, vol. 15, no. 1, pp. 1386–1417, Mar. 2024, doi: 10.1007/s13132-023-01136-9.

[13] B. Goldar, Y. Parida, and A. Goldar, "Complementarity Versus Substitution Relationship between Outward FDI and Exports: Evidence from India," *J. Asian Econ. Integr.*, vol. 6, no. 1, pp. 90–117, Apr. 2024, doi: 10.1177/26316846241229827.

[14] N. Bhasin and K. Kapoor, "Impact of outward FDI on home country exports," *Int. J. Emerg. Mark.*, vol. 16, no. 6, pp. 1150–1175, Jul. 2021, doi: 10.1108/IJOEM-05-2017-0160.

[15] A. Krishnan and P. Mundakkad, "Outward FDI and its impact on the parent firm: A case of Indian manufacturing firms," *Econ. Bull.*, vol. 43, no. 3, pp. 1470–1484, 2023.