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Impact of Foreign Direct Investment on Agricultural Exports in Arab countries: An empirical analysis

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Abstract: This search empirically examines the effect of foreign direct investment on agricultural exports. The search uses a panel dataset from 13 Arab countries from 2000 to 2019. According to the results of the Breusch-Pagan (LM) test and the Hausman test, the random-effects model is reliable than the pooled OLS model and the fixed-effect model. The results of the random-effects model show that FDI is positive and highly significant towards agricultural exports. Empirical results indicate that a 1% increase in FDI leads to an increase in agricultural exports by 0.055%. Therefore, foreign direct investment destined for agricultural export in Arab countries should be encouraged. Further, Policymakers should ensure that removes the barrier to FDI in Arab countries. Moreover, strengthening the position of Arab countries as a major attraction for foreign direct investment at the global level

Keywords:

Foreign Direct Investment, Arab countries, Agricultural exports, Panel data, Pooled OLS, Fixed effect, Random effect

1. Introduction

For decades, Foreign Direct Investment (FDI) plays a major role in supporting the developing countries' economic development process (Jacob & Jiji, 2021; Raeskyesa & Suryandaru, 2020). In addition, FDI promotes the opportunity for the host countries to export by facilitating access to foreign markets. According to UNCTAD (2020) Countries use FDI and exports as sources of long-term development as they expand their economies, with more liberalization policies followed. Foreign Direct Investment (FDI) plays a key role in enhancing the agricultural exports and economic growth of an economy. In recent years, FDI flows increased significantly in Arab countries, 34.7billion dollars in 2019, but these investment flows are

still limited compared to direct investment flows in economic regions of the world, particularly in the European Union Member States, the Association of Southeast Asian Nations, and the North American Free Trade Agreement 429, 389, 297 billion dollars in 2019 respectively. Despite the Arab countries being rich with natural resources such as arable land, forests, livestock, oil, and mining, In addition, they are geographically contiguous, the agricultural intra-export bout 33.7% of the total agricultural export in 2018 and, the proportion of intra-regional trade to the total foreign trade of Arab countries about 11.1 percent in 2019 (Fund, 2020). Therefore, direct foreign investment has become important for the Arab countries' economies, being the most important external funding source as it contributes to easy access to agricultural technology, allowance a better use of resources, increasing production, enhancing quality, and reducing the cost to the reach they become competitive with their foreign rivals. This kind of investment considers an essential engine for increase agricultural exports. Research on this subject is important because, despite the abundant literature on FDI, the nexus between FDI and agricultural exports in Arab countries more specifically appears somewhat lacking. The main objective of this research empirically examines the influence of foreign direct investments on agricultural exports from 2000 to 2019 for 13 Arab nations; the countries chosen are dependent on the data set's availability. This is one of a few studies on the influence of FDI on agricultural exports in Arab countries, and it uses a new methodology to achieve the goals. Many Arab nations often suffer from structural economic imbalances especially, in the efficiency of investments and spending domestic investment. Such a situation often motivates these countries to attract more FDI flow to their agricultural sectors due to the vital role those investments play in improving the conditions of payments budgets of the host countries through enhancing the conditions of their agricultural trade balance using increasing agricultural exports. Therefore, this research will try to answer the question; does FDI contribute to increasing agricultural exports in Arab countries?

2. Literature review

There is a large of literature in economics literature analyzing the impact of FDI on exports. Alıcı and Ucal (2003), estimated the causal links among inward FDI, exports, and economic growth in the Turkish economy during the period of 1987 to 2002 and found that the linkage of FDI – led export growth was not found in Turkey. Zhang (2005),Conducted the study on the basis of cross-section studies of 186 industriesthat found a positive and significant relationship between FDI and export growth in China. Further, FDI has a more export promoting effect than domestic capital. Pacheco-López (2005), estimated the causal relationship between inward FDI and Export performance in Mexico by using the Granger causality test and found that there is bi-directional causality between inward FDI and export performance. Damijan et al. (2008), investigated the export performance in the CEE countries, focusing on the transition countries. Their results showed that higher levels of FDI contributed to increasing exports. Njong and Tchakount'e (2008), investigated the association between FDI and export in Cameroon using ` data for the period 1980-2003. He found a positive impact of FDI on export through increased supply capacity and spillover effects.Jevcak et al. (2010), conducted the study on 10 new EU member countries (EU enlargement from 2004). They indicated that FDI in the mentioned countries does not have a higher contribution to export potential.Jongwanich (2010), estimated the relationship between FDI and export performance for eight Asian countries over the years 1993-2008 and found that the inward FDI is positively related to the export performance in these countries. Zaman et al. (2011), conducted the study on Romanian data. They found that the agricultural sector generated positive results for the commercial

balance, while FDI inflows in the extraction industry and commerce sector generated rise negative results for foreign trade. Shawa and Shen (2013), studied FDI inflows in developing countries, they found that the impact of FDI on exports is significant in terms of defining the relevant strategies; FDI can strongly influence the growth of exports. Bouras and Raggad (2015), investigate the export and FDI substitute or complement each other 10 countries in Africa and Europe over the period 1988 to 2012 by using random-effect model used data analysis. Their results showed that exports in these countries generate additional FDI flows from investing countries. Moreover, the impact of exports on FDI was positive.Anghelache et al. (2016), empirically investigate the relationship between exports and FDI using a correlogram with a dataset during the period of 1996-2013 in Romania. They found a positive relation between FDI and export developments. Mitic and Ivic (2016), investigated the relation between FDI and total exports for eleven CEE countries by using correlation analysis (Pearson correlation coefficient) and including one lag in their analysis over the period 1996 to 2012. Their results showed a tighter correlation between FDI and exports based on high technology than the correlation between FDI and total exports for the CEE region.Selimi et al. (2016), employed panel regression techniques, Least Square Dummy Variable (LSDV) regression method, and a pooled OLS, to analyze empirically the foreign direct investment and export performance during the period of 1996-2013 in 9 Western Balkan countries. According to their findings, FDI positively affects export performance in the sample countries in various model specifications. Popovici (2018), conducted the study by using A GMM analysis for the period 1999-2012 on EU countries. The study indicates that foreign investments seem to have a higher impact on increasing exports in the new Members of the European Union than in the old ones. Also, both foreign and domestic investments have a positive impact on exports.Sultanuzzaman et al. (2018), investigated the long-run and short-run relationship between foreign direct investment (FDI) inflows, exports, and economic growth in Sri Lanka by Autoregressive Distributed Lag (ARDL) bounds testing approach over the period 1980 to 2016. Their results showed that If FDI inflows increase, GDP growth will increase,while exports had a negative and significant relationship with economic growth in the long run. Magdalena et al. (2020), investigated causality between total FDI and the commercial balance (goods) and between foreign direct investment stocks in the manufacturing economic sectors and the commercial balance of manufactured goods for some Central and Eastern European countries by using the Granger causality test during the crisis period and post-crisis period. Their results showed that a bi-directional causality between FDI stock-exports-imports and impact of FDI stock on the trade balance of manufactured goods than the impact of total FDI stock on the commercial balance of goods in CEE countries. Xiong and Sun (2021), estimated the relationship between exports and foreign direct investment (FDI) using the data from over 140 countries from 2001 to 2006 by applying augmented gravity models. They concluded that FDI and exports are complementary. In addition, such a complementary relationship is significant and more positivewith developed–developing country pairs when compared to other combinations (developed–developed and developing–developing pairs). Furthermore, FDI from developed to developing countries encourages more exports, while FDI from developed countries to developed countries is less important in promoting exports.

Despite the vast literature on FDI, the relation between FDI and agricultural exports in Arab countries appears somewhat lacking for example. Soliman (2003), investigated the role of FDI in export promotion of four MENA countries (Egypt, Tunisia, Morocco, and Turkey) for the period of 1970-1995 by applying the gravity model. He found a positive relationship between FDI inflow and export. However, an

insignificant relationship between FDI and share of manufacturing export in total merchandise exports. Al-Najafi and Rashad (2010), examined the influence of agricultural investments on the growth rates in the agricultural sector of many Arab nations in order to specify the effectiveness of investments. Using statistical analysis, they concluded that the amount of direct foreign investment is one of the major variables in agricultural production. Quaidry (2011) focused in his study on found out the role of foreign direct investment and economic development in Algeria and concluded that many countries of the world became in need of these foreign direct investments due to the decrease of local financial resources, a decrease of agricultural production levels, and the increase of its imports. This investment works on providing renewed resources of hard currencies. In addition, increases the contribution of the agricultural sector to the overall national income and facilitates the acquisition of modern technologies by the host country. Shahinaz (2013), studied foreign direct investments and their role in economic development in Algeria, the results showed that most Arab countries are competing to attract more companies of foreign direct investment considering their role in achieving targeted levels of growth and providing foreign currencies. Mukhtarov et al. (2019), conducted the impacts of foreign direct investment on exports by using the Autoregressive Distributed Lag Bounds Testing (ARDL BT) for the period 1980 to 2018 on Jordan. They showed that there was a positive and statistically significant impact of FDI on export in the long run.

As mentioned in the previous section the effects of FDI on exports is contentious. Most of the studies in the literature find a positive impact of FDI on exports. Whereas some other studies find no robust evidence or weak influence of FDI on exports: (Al-Najafi & Rashad, 2010; 2003; Jevcak et al., 2010; Sultanuzzaman et al., 2018). They concluded that the amount of direct foreign investment is one of the major variables in agricultural sector.

3. Data and Methodology:

3.1. Data

The current study has collected data from 2000 to 2019 for 13 countries across the Arab countries. The selection of samples depends upon the availability of the data set. The variables summarized in Table 1.

Table 1: Variables used in the panel data regression model and their expected effects

Variable	*Description*	*Source*	*Expected sign*
Dependent Variable			
EX	Values of agricultural exports (current US$)	Food and Agriculture Organization (FAO)	
Independent Variables			
FDI	Foreign direct investment (current US$)	Food and Agriculture Organization (FAO)	Positive (+)
REER	Real effective exchange rate	International Monetary Fund	Positive

		(IMF)	(+)
GDP	Agricultural Gross domestic product (current US$)	Arab Monetary Fund	Positive (+)
OPENN	Trade openness	calculated from Food and Agriculture Organization (FAO) and Arab Monetary Fund	Positive (+)

Note: OPENN is the ratio of Export + Import/GDP.

3.2. Methodology

Foreign direct investment's (FDI) affects agricultural export by applying three models are Pooled Regression Model (PRM), Fixed Effects Model (FEM), and Random Effects Model (REM). Three tests are needed to find the most efficient results. Lagrange Multiplier test (LM) (W. H. Greene, 2002) to test the reliability of pooled OLS model, F-test to show the necessity of including individual effect term, and Hausman test (Hausman, 1978)If we reject the null hypothesis, then we prefer the fixed effect model. While, if we do not reject the null hypothesis, we prefer the random effect model.

The pooled model:

Pooled regression model does not take into account the division of observations by a unit of time and cross-section(Badi Hani Baltagi, 2008; Badi H Baltagi, 2021; W. Greene). The empirical model is as follow:

$$yit = \beta x'_{it} + z'_i\alpha + \varepsilon_{it}$$

Where, y is the dependent variable observed for individual i in time t, X is the vector of explanatory variables with coefficients, β_i is a (k × 1) vector of slope coefficients, $z'_i\alpha$ the heterogeneity, or individual effect and ε_{it} the error term. The model assumed, ${\sigma_i}^2 = {\sigma_\varepsilon}^2$ and $Cov(\varepsilon_{it}, \varepsilon_{jt}) = 0$ for $i \neq j$. If z_i contains only a constant term, then it is a pooled model.

The fixed effects model:

The fixed effects are used for controlling unobserved heterogeneity when heterogeneity is constant over time and correlated with independent variables (W. H. Greene, 2002; L. R. LaMotte, 1983). If there are omitted variables, and these variables are correlated with the variables in the model, then fixed effects models may provide a means for controlling for omitted variable bias. Fixed effects model is a primary default model for establishing causal with panel data (Imai & Kim, 2016). The FEM is represented as:

$$y_{it} = x'_{it}\beta + \alpha_i + \varepsilon_{it}$$

Where, $\alpha_i = z'_i\alpha$ for all the observable effects

The Random effects model:

Random effects model (or variance components model) assists in controlling for unobserved heterogeneity by estimating the time-invariant variables that the fixed-effect model is unable to measure (Badi H. Baltagi, 2005; Badi H Baltagi, 2021; L. n. R. LaMotte, 2014; L. R. LaMotte, 1983), then the model may be formulated as:

$$yit = \alpha_i + \beta' X_{it} + \lambda_{it} + \varepsilon_{it}$$

Where, λ_{it} is a random disturbance and α_i is the unobserved individual effect.

The model assumed, $E(\lambda_i = 0), E(\lambda_i^2) = \sigma^2_\lambda, E(\lambda_i \lambda_j) = 0$ *for* $i \neq j$ and $E(\varepsilon it\, \lambda j) = 0$ *for all* i. t and j

Model selection between Random effects and pooled effect model:

The testing for random effect or Pooled effect is conducted based on the Breusch-Pagan (LM) Lagrange multiplier test (Breusch & Pagan, 1980). The hypothesis is Ho: Variances across entities is zero. Ha: Variances across entities are not zero. Based on test statistical results, if the null hypothesis is not rejected at a 5% level, the pooled effect model would be preferable.

Model selection between random effects and fixed effect model:

To determine the best model out of the fixed-effects model or random-effects model would be made based on the Hausman test(Hausman, 1978; Hausman & Taylor, 1981) where the null hypothesis is that the preferred model is random effects vs. the alternative the fixed effects. It tests whether the unique errors (e_i) are correlated with the regressors; the null hypothesis is they are not. The test hypothesis is Ho: difference in coefficients, not systematic HA: difference in coefficients, not systematic. Based on test statistical results, if the null hypothesis is rejected the fixed-effect model is more appropriate (Griliches & Hausman, 1986).

STATIONARITY TESTS:

Before the estimation of panel data, the univariate characteristics of the variables were tested for panel unit root. Thus, this research applied panel unit root tests using LLC is Levin-Lin-Chu, For LLC the null hypothesis, Ho panels are non-stationary, while the alternative Ha panels are stationary. And IPS is Im-Pesaran-Shin, IPS Ho: all panels are non-stationary, Ha: some panels are stationary (Camarero et al., 2006; Im et al., 2003). Also, Fisher, Ho: all panels are non-stationary, Ha: at least one panel is stationary (G. Maddala & Wu, 1996; G. S. Maddala & Wu, 1999). The null hypothesis of a unit root is H0: Panels are non-stationary (autoregressive parameter is constant across panels) Ha: Panels are stationary.

4. EMPIRICAL MODEL:

Following previous literature, most of the previous economic studies and economic logic indicate that the following variables are the most influential variables to estimate the phenomenon.

Agricultural Export = $\int$(Foreign Direct Investment, Real Effective Exchange Rate, Agricultural Gross domestic product, trade openness) (4)

Equation (5) can change into a simple linear panel data model form as follows:

$$Ex_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 GDP_{it} + \beta_3 REER_{it} + \beta_4 OPENN_{it} + \varepsilon_{it} \quad (5)$$

The subscripts in equation (5) indicate that the empirical model is a panel data analysis and could be estimated by pooled OLS model, random effects model, or fixed effects model.

5. Empirical Results:

Descriptive statistics:

Before the showing of empirical results and interpretations analysis, there are some pretests of data, which are considered very necessary. For this reason, the descriptive statistics table is one of the pre-testing of data implement, which furnishes some prerequisites or information concerning the appropriateness of variables. Table 2 illustrates the summary descriptive statistics for the variables. The standard deviation of variables reflects the variation and volatility in statistics during the study period agriculture GDP and FDI are the highest volatility, which Standard Deviation are 7834.29 and 4819.15 respectively during the study period. Overall, skewness and kurtosis coefficients proclaim the variables are following the normal distribution.

Table 2: Descriptive statistics individual sample

Items	agricultural exports	FDI	Agricultural GDP	Real effective exchange rate	Trade openness
Mean	1216.90	3113.66	5523.01	109.1	6.66
Median	601.00	1528.31	1862.67	105.1	5.30
Minimum	7.41	3.07	50.00	55.50	0.38
Maximum	6766.33	39456.00	39183.00	168.18	26.82
Standard Error	87.69	305.01	485.86	0.97	0.30
Standard Deviation	1413.92	4918.15	7834.29	15.56	4.78
Kurtosis	2.59	22.81	4.05	1.51	1.59
Skewness	1.72	4.15	1.99	0.43	1.30
Range	6758.92	39452.93	39133.00	112.7	26.44
Sum	316394.39	809552.71	1435981.67	28371.8	1730.62
Probability	0.00	0.00	0.00	0.00	0.00
Observations	260	260	260	260	260

Correlation analysis:

The correlation coefficient (r) is a proportional measure. The nearer it is to 1 (in absolute value), the stronger the relationship, r = 0 Indicates the absence of correlation(Apergis & Ozturk, 2015). Table 3 shows that all variables included in our empirical analysis are positively correlated with agricultural exports. In addition, the table shows that there is a strong correlation between agricultural exports and both the agricultural GDP and FDI (r = 0.59, r = 48). On the other hand, other agricultural exports are characterized by a low correlation relationship with REER and trade openness respectively (r = 0.21, r = 0.03). The

correlations presented in the below table raise no specific concern about multicollinearity between independent variables that do not exhibit a high relationship among each other (refer to Table 2).

Table 3: Results of the Correlation matrix

Items	*DEX*	*FDI*	*DGDP*	*DREER*	*OPENN*
DEX	1	0.48	0.59	0.21	0.03
FDI	0.48	1	0.28	-0.01	-0.17
DGDP	0.59	0.28	1	0.25	-0.09
DREER	0.21	-0.01	0.25	1	0.02
OPENN	0.03	-0.17	-0.09	0.02	1

STATIONARITY TESTS:

Stationary test for all variables reported in Table 4. The results show that FDI and Trade openness are stationary in level form. It means that the null hypothesis was rejected. Namely, these variables become stationary in level form and do not have a unit root. While agricultural exports, agricultural GDP, and real effective exchange rate are stationary in first differences. It means that the null hypothesis was rejected. This indicates that variables become stationary in their first differences.

TABLE 4: Results of the Panel Unit Root Test Results

Variables	LLC	IPS	Fisher	
DEX	-10.1869*	-9.58978*	-8.57151*	I (1)
FDI	-1.53204***	-2.04327**	-2.23308*	I (0)
DGDP	-7.27969*	-5.99713*	-5.93011*	I (1)
DREER	-5.07808*	-3.0425*	-5.27964*	I (1)
OPENN	-6.07028*	-7.96754*	-7.52344*	I (0)

*, **, *** denote significance at the 1, 5 and 10% levels respectively.

Breusch and Pagan Lagrangian multiplier test:

Table 5 presents the result of the Breusch-Pagan (LM) test for the random-effects model. The test result indicates reject the pooled Ordinary Least Squares (OLS) method. Thus, we decide to select the random-effects model and focus the interpretation on estimation results obtained from this model.

TABLE 5: Results of Breusch-Pagan test for random effects model

Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Breusch-Pagan LM	589.1307	78	0

*, **, *** denote significance at the 1, 5 and 10% levels respectively.

Hausman Test:

As indicated by the test results in Table 6, the probability of the Hausman test is higher than 5%. This denotes that the Random effect model is significant, and country-specific effects do not correlate with regressors. This suggests that the Random effects model is the preferred interpretation of the results will focus on the fixed-effects model.

TABLE 6: Results of Hausman test

Correlated Random Effects - Hausman Test				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		7.442003	4	0.1143
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var. (Diff.)	Prob.
FDI	0.051759	0.05532	0.000006	0.1508
DGDP	0.13317	0.123991	0.000038	0.1354
DREER	11.11498	11.28898	0.425977	0.7898
OPENN	46.38091	45.66838	26.07541	0.889

*, **, *** denote significance at the 1, 5, and 10% levels respectively.

Panel Data Analysis Result:

We examine the relationships between agricultural exports, agricultural gross domestic product, real effective exchange rate, and trade openness for 13 Arab nations via panel data analysis using Eviews10 for the period 2000–2019. Table 7 contains the estimating results of Eq. 5. By performing the LM test, the F-test, and the Hausman test on these results, we can notice that the Random effects model appears appropriate to obtain reliable estimates. Therefore, the discussion presented reflects the result of the random effect model. The result of the REM indicates the effect of foreign direct investment (FDI) on agricultural exports and with various control variables. The estimated coefficients of FDI and agricultural GDP, REER, and OPENN, are all positive and significant toward agricultural EX. The results indicate that Arab country can increase their attracting investment from abroad by 1 percent; it leads to an increase of up to 0.055 percent of agricultural exports, ceteris paribus. It implies that the FDI plays an important role in increase agricultural exports abroad. The agricultural GDP is highly significant at the 1 percent. As a result, 1 percent change in the agricultural GDP in Arab countries results in a 0.12 percent increase in the agricultural exports in that countries. Moreover, a real effective exchange rate (REER) achieves the significance level at 5 percent, with a positive coefficient. This means if the real effective exchange rate increases by 1 percent, the agricultural exports will increase by 11.29 percent, with the stability of other

factors. In addition, the real effective exchange rate (REER) achieves the significance level at 1 percent, with a positive coefficient. Lastly, variable trade openness (OPENN) is significant at the 5 percent level, with a positive magnitude towards agricultural exports. Hence, trade openness has a positive impact on agricultural exports as fewer barriers enhance trade amongst countries. The results of this model's estimation are satisfied because the diagnostic tests indicate that the coefficient of determination, R^2 adjusted was 71% and that of Fisher's statistic is 1% because it is equal to 0.00%. Therefore, it can be said that foreign direct investment (FDI) has an impact on increasing agricultural exports, being the most important external funding source

TABLE 7: Results of pooled effects, fixed-effects model, and random-effects model

Variables	**Pooled effects**	**Fixed effects**	**Random effects**
Constant	-870.059	-1201.604	-1176.236
FDI	0.103*** (0.014)	0.052*** (0.013)	0.055*** (4.364)
DGDP	0.086*** (0.009)	0.133*** (0.014)	0.124*** (9.641)
DREER	9.397** (4.250)	11.115** (3.819)	11.289** (3.000)
OPENN	39.625** (13.592)	46.381* (16.721)	45.668** (2.868)
NO. of observation	260	260	260
R^2	0.4789	0.3717	0.733
R^2 adjusted	0.4707	0.3618	0.715
F-test	58.589	41.599	37.7117
Prob(F-statistic)	0.000	0.000	0.0000

Dependent variable: Agriculture Export

Robust standard errors are in parentheses. ***, **, *: statistically significant at 1%, 5%, and 10% levels respectively.

6. Conclusion

This present study investigates the influence of foreign direct investment (FDI) on agricultural exports. The objective of this search was to investigate the effects of FDI on agricultural exports in Arab countries for the period between 2000 and 2019, using panel techniques. According to the Breusch-Pagan test, the F test, R^2 adjusted, and the Hausman test on results, we can observe that the Random effects model appears reliable to obtaining credible estimates. The result of the REM indicates there is a positive and statistically significant relationship between FDI and agricultural export in Arab countries. This implies that a 1% increase in FDI results in 0.055% increases in agricultural export with the stability of the impact of other factors. In addition, we can note that empirical results show that agricultural GDP, REER, and OPENN have a positive and significant effect on agricultural EX. Based on the estimated results; foreign direct investment destined for agricultural export in Arab countries should be encouraged. Further, Policymakers should ensure that removes the barrier to FDI in Arab countries. Further, improving the position of Arab countries as a major attraction for foreign direct investment at the global level

7. References

1. Al-Najafi, D., & Rashad, I. (2010). The Components of Direct Foreign Investment and the Problem of Agriculture (Arab Country As Amodel). *TANMIYAT AL-RAFIDAIN, 32*(99), 77-90.
2. Alıcı, A. A., & Ucal, M. Ş. (2003). *Foreign direct investment, exports and output growth of Turkey: Causality analysis.* Paper presented at the European Trade Study Group (ETSG) fifth annual conference, Madrid.
3. Anghelache, C., Jweida, I., Popovici, M., & Stanciu, E. (2016). Analysing the correlation between FDI and export. *Revista Română de Statistică-Supliment*(10), 71-77.
4. Apergis, N., & Ozturk, I. (2015). Testing environmental Kuznets curve hypothesis in Asian countries. *Ecological indicators, 52*, 16-22.
5. Baltagi, B. H. (2005). *Econometric Analysis of Panel Data Third edition,* : John Wiley & Sons Ltd, The Atrium.
6. Baltagi, B. H. (2008). *Econometric analysis of panel data* (Vol. 4): Springer.
7. Baltagi, B. H. (2021). *Econometric Analysis of Panel Data*.
8. Bouras, H., & Raggad, B. (2015). Foreign direct investment and exports: Complementarity or substitutability an empirical investigation. *International Journal of Economics and Financial Issues, 5*(4).
9. Breusch, T. S., & Pagan, A. R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The review of economic studies, 47*(1), 239-253.
10. Camarero, M., Carrion-i-Silvestre, J. L., & Tamarit, C. (2006). Testing for hysteresis in unemployment in OECD countries: new evidence using stationarity panel tests with breaks. *Oxford Bulletin of Economics and statistics, 68*(2), 167-182.
11. Damijan, J. P., Rojec, M., & Ferjancic, M. (2008). Growing export performance of transition economies: EU market access versus supply capacity factors. *LICOS Centre for Institutions and Economic Performance Discussion Paper*(202).
12. Fund, A. M. (2020). https://www.amf.org.ae/en/page/statistics-inter-and-intra-arab-trade-competitiveness.
13. Greene, W. Econometric Analysis of Panel Data.

14. Greene, W. H. (2002). *Econometric Analysis, Fifth Edition*.
15. Griliches, Z., & Hausman, J. A. (1986). Errors in variables in panel data. *Journal of econometrics, 31*(1), 93-118.
16. Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the econometric society*, 1251-1271.
17. Hausman, J. A., & Taylor, W. E. (1981). Panel data and unobservable individual effects. *Econometrica: Journal of the econometric society*, 1377-1398.
18. Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of econometrics, 115*(1), 53-74.
19. Imai, K., & Kim, I. S. (2016). When should we use linear fixed effects regression models for causal inference with panel data.
20. Jacob, T., & Jiji, N. A. (2021). Impact of Foreign Direct Investment on Economic Growth of China and India: An Empirical Analysis. *Asian Journal of Economics, Finance and Management*, 16-26.
21. Jevcak, A., Setzer, R., & Suardi, M. (2010). *Determinants of capital flows to the new EU member states before and during the financial crisis*. Retrieved from
22. Jongwanich, J. (2010). Determinants of export performance in East and Southeast Asia. *World Economy, 33*(1), 20-41.
23. LaMotte, L. n. R. (2014). Fixed-, random-, and mixed-effects models. *Wiley StatsRef: Statistics Reference Online*.
24. LaMotte, L. R. (1983). Fixed, random, and mixedeffectsmodels. *Encyclopedia of Statistical*.
25. Maddala, G., & Wu, S. (1996). A Comparative Study of Unit Root Tests with Panel Data and a New Simple Test: Evidence From Simulations and the Bootstrap. *Ohio State University, mimeo*.
26. Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and statistics, 61*(S1), 631-652.
27. Magdalena, R., Gabriela, C. C., & Aron, B. L. (2020). FDIs and Commercial Balance in CEE Countries-Special Focus on the Manufacturing Economic Sectors. A VAR Analysis. *International Journal of Business & Economic Sciences Applied Research, 13*(2).
28. Mitic, B., & Ivic, M. (2016). The impact of foreign direct investment on export performance: case of European transition economies. *Independent Journal of Management & Production, 7*(3), 771-785.
29. Mukhtarov, S., Alalawneh, M. M., Ibadov, E., & Huseynli, A. (2019). The impact of foreign direct investment on exports in Jordan: An empirical analysis. *Journal of International Studies, 12*(3).
30. Njong, A. M., & Tchakount'e, R. (2008). *Investigating the effects of foreign direct investment on export growth in Cameroon.* Paper presented at the Proceedings of the UNECA Ad-hoc Expert Group Meeting Paper.
31. Pacheco-López, P. (2005). Foreign direct investment, exports and imports in Mexico. *World Economy, 28*(8), 1157-1172.
32. Popovici, O. C. (2018). The impact of FDI on EU export performance in manufacturing and services. A dynamic panel data approach. *ESPERA, 21*(1).

33. Quaidry, K. (2011). *Foreign Direct Investment and Economic Development in Algeria.* (M.Sc. thesis in economics), , college of economics and commercial sciences,
34. Raeskyesa, D. G. S., & Suryandaru, R. A. (2020). Competitiveness and FDI Inflows in ASEAN Member Countries. *International Journal of Business & Economic Sciences Applied Research, 13*(1).
35. Selimi, N., Reçi, K., & Sadiku, L. (2016). The Impact of Foreign Direct Investment on the Export Performance: Empirical Evidence for Western Balkan Countries. *ILIRIA International Review, 6*(1).
36. Shahinaz, S. (2013). *Foreign Direct Investments and their Role in Economic Development a Study of Algeria's Status.* (thesis in economy), , college of sciences.,
37. Shawa, M. J., & Shen, Y. (2013). Causality relationship between foreign direct investment, GDP growth and export for Tanzania. *International Journal of Economics and Finance, 5*(9), 13-19.
38. Soliman, M. (2003). *Foreign direct investment and LDCs exports: Evidence from the MENA region.* Paper presented at the ERF 10th Annual Conference, December, Marrakesh, Morocco.
39. Sultanuzzaman, M. R., Fan, H., Akash, M., Wang, B., & Shakij, U. S. M. (2018). The role of FDI inflows and export on economic growth in Sri Lanka: An ARDL approach. *Cogent Economics & Finance, 6*(1), 1518116.
40. UNCTAD. (2020). http://unctad.org/en/PublicationsLibrary/wir2020_en.pdf.
41. Xiong, T., & Sun, H. (2021). Structure and dynamics of global capital and international trade: Analysis of the relationship between exports and foreign direct investment (FDI) from 2001 to 2006. *International Journal of Finance & Economics, 26*(1), 542-559.
42. Zaman, G., Vasile, V., Matei, M., Croitoru, C., & Enescu, G. (2011). Some challenging (macro) economic aspects of FDI in Romania. *Revista Romana de Economie, 33*(2).
43. Zhang, K. H. (2005). *How does FDI affect a host country's export performance? The case of China.* Paper presented at the International conference of WTO, China and the Asian Economies.