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CAUSALITY ARDL ANALYSIS OF ECONOMIC EXPANSION FOREIGN DIRECT INVESTMENT AND EXPORTS: A CASE STUDY OF THE COUNTRIES (MINT)

HASSAN AJMAL[1], AMNA KHALID[2]

ABSTRACT
FDI is favorable or not for the newly emerging economies the purpose of the research is to check the overall assistance of FDI so I have chosen the MINT countries for the analysis and done the time series analysis of these MINT countries and MINT countries include Mexico, Indonesia, Nigeria and Turkey and the technique used to find the bounding and assistance is ARDL bound test and the other is granger causality test the variable used to find the results are GDP, FDI, and Exports of goods and services and the data is taken from the year 1970-2019 so the findings of our research show that bound test rejects Ho means null hypothesis shows all the long-run relationship among these variables and the granger test shows that the relation between GDP to FDI in the case of Indonesia will reject Ho so after analysis we conclude that there is only one granger causality can be caused and this causality is unidirectional from GDP to FDI in the case of Indonesia only.

Keywords: MINT countries, FDI, Bounds testing approach, causality, export, economic growth
JEL Codes: F43, O40, C30, F21

I. INTRODUCTION

The relationship between the foreign direct investment called FDI and the exports and the economic growth is not neglect able because these three variable or the determinants can be most important for the wellbeing of the economy and these can also be used to increase the strength of the economy so we never ever need to underestimate the relation of these three and also need to implement some policies and also it is also require to make changes in policies to make economic growth better and increase the strength of the economy and for this purpose research will help to give the idea about the policies and how these policies should need to be implemented and what type of policies will be made to increase the growth and strong the GDP if we said that the only reason to promoting and making the these MINT countries as emerging economies is FDI or export is not true because other factors also make them emerging economies and those are the capital geographical location and then there policies and implementation are also playing a very positive role in making them and superior economies so FDI will be effective when the policies are FDI and export friendly. FDI and exports are the two components which can make changes dramatically in the outputs and in the inputs of the economies and they can make the economy strong if it can work positively.FDI which will be known as foreign direct investment and export has a huge relation among each other and both of them can contribute a lot in the wellbeing of the economic growth.(Ozturk, 2012) can explain the FDI and GDP and the economic growth relation as the causal relation by implementing co-integration relation and ARDL test so FDI can be useful and work for the wellbeing of the economy.(Fanbasten, 2016) can explain in his study that FDI can be very useful and plays a vital role in the growth of the economy and in his study, he explained that FDI can work more positively in newly emerging economies as compare to the developed economies MINT countries are the newly emerging economies and these can give better outcome and the overall GDP of these economies will increased and the growth rate will also positively.(Kokotović, n.d.) In the research can explained that Goldman Sachs economist Jim O'Neill was the person who defined the MINT and in MINT economies four countries will be included Mexico Indonesia Nigeria and Turkey and this combination is also known as the new emerging and newly progressing economical giant and this combination can stable their economic eligibility and

[1] COMSATS University, Islamabad
[2] COMSATS University, Islamabad

also improve their GDP and growth rate and this is possible by FDI the FDI can help a lot to them to increase their economic rate and also the exports contribute positive results in their history(Harun & Çukurova, 2017) can also define the contribution of export and FDI in the GDP and can tell that after implement export promotion policies the condition of the MINT based economies can be better and the contribution of export in the GDP will increased so there is a good sign, and a positive relation export can be introduced by implementing promotion policies.

Export policies will help to increase the capital formation and inflow of the FDI which causes the increase in the GDP. MINT can export different raw products so export promotions policies and FDI will help to become as an emerging economy.(Governance, n.d.) The period of 2001-2011 this time data can be taken and can be concluded the overall performance and effect of the FDI, and it is stated that at some level and at higher level FDI can give better outcome and it can help to improve the GDP output and GDP output will also benefit the FDI to influence positively (Asongu et al., 2018) tells in his research that FDI can be valuable for very types of countries whether they are investor or they are Host but they can be awarded with the FDI because it is the most favorable for both countries but there is some requirement to get advantage from FDI and these can are the clinch that the government must need to improve their human capital and domestic industries so it can be possible for the FDI to give better outcome.(Odugbesan, 2020) state that MINT countries after implementing trade openness policies and attracting the FDI then their economies will get boosted and they can overcome deficits and the main reason to become as an emerging economies was that they have a huge human resources huge amount of young employee and high literacy rate and the other reason is that their geographical location is very impressive because the MINT countries are the neighboring economies of the most and the more stable and developed economies. So, they can increase their exports their production and the growth of their economies and FDI will helps them in making their economies work positively.(Talpur, 2019) in his research tells that FDI can helps to stimulate overall growth of the economy whether they are developed or developing countries author also conclude that the bounding between FDI and growth are more important and specially for the developing countries so these countries will need to make FDI friendly policies and export openness policies so economies can perform well A lot of literature will be available on the books and in different research article and a lot of the discussions has been done related FDI, Economic growth, and on export and different studies shows different results and conclusions and in my research article I am going to discuss and manipulating the results of MINT countries and these MINT countries list are Mexico, Indonesia, Nigeria, and Turkey these countries are the most emerging economies and their bounding can be very graceful for them so I choose the variable GDP,FDI and economic growth and taken the data from 1970-2019 and the time series data can be taken the method I choose to find results and discussions are ARLD(Autoregressive Distributed Lag Co-integration Analysis) and Granger Causality so the aim is to provide new and fresh and different results which can be valid and can be helpful at the institutional level as well as for the policy makers.This paper can be divided into different sections and can be explained and discuss in different parts its first part includes the introduction section then the literature review can be discussed, and the other part of the paper include methodology section where data can be descriptive and the last two parts of the paper can explain results and conclusion so this is how the sequence of paper can be distributed.

II. LITERATURE REVIEW

FDI, Export and economic growth are the main determinants of the economy and these can play very effective for the wellbeing of the country and the country is either developed or developing country so these can be very useful and almost all the countries will achieve them at any cost to improve their economy the relation between this economic growth, FDI, and economic growth are like correlation because the change in any of these things may affect another. According to research (Business, 2017) the researcher inspect economic growth as a function of FDI and export in south Africa and ARDL bounds test has been applied which concludes that there is co- integration between all of these three in long run and to examine the short term results (Business, 2017) has applied the error correction model and to check causality VECM Granger approach has been applied which states that there is unidirectional Causality among economic growth and foreign direct investment so the results show that FDI-led production speculation so south African government needs to revitalize FDI to improve its economy.

The connection between economic growth and foreign direct investment is very interesting and according to research (Iamsiraroj, 2016) states in his article that there is a bi-directional relationship between economic growth and FDI in the research about finding the relationship between both of these two the cross-country data has been taken from 1971-2010 and its concludes that FDI can affect positively on growth and other factors. So FDI helps to improve economic growth. And not only the FDI but its contributing factors also help to improve the economic growth and to achieve it at the maximum level.

To check the bounding and effects of economic growth and FDI on each other the research has been done on Latin America and this work has been by using the panel data and the results conclude and explain that FDI has not got any remarkable effects on the economic growth statistically but this happened only in the case of Latin America because the same test has been applied in different countries of the region and the results of that research were very different the results show that FDI can perform well and give very impressive results in the case of high-income countries and same in the case of lower-income countries it will give a poor performance of the region and the results were in the form of negativity and the middle-income countries and states the result can be shown unbalanced so the that FDI is not the best measure to improve and to increase the stability of Latin America economic growth (Alvarado et al., 2017).

Plethora of literature can be found about the FDI (foreign direct investment) and the economic growth and they can be examined many times to their relationship and their long term and short term effect on each other so the main aim of the research was to check the long term relationship between each of them and this research can be done for the Asian economies the method choose for the result was new and but well known and it was known as co-integration test also called as bootstrap autoregressive distributed lag (ARDL) the main aim is to get and check the results of long run relationship and bounding between FDI, economic growth, and GDP purpose of using the bootstrap methodology was to make the demanding for the ARDL test justifiable and the results and findings of using this Bootstrap can be failed because to give us valid results and its shows that there is no long relation among the economic growth and FDI and GDP and they can also states that these(FDI, and GDP) cannot be the individual and only source to improve the economic growth of the Asian countries. (Khoon et al., 2017)

Sokhanvar, (2019) states in his research that FDI supremacy is the thing which helps to improve the development of the country as they are developed or developed so the research has been done to check the direct and indirect connection between FDI and economic growth and this research has been done on the 7 EU countries and all of these countries are tourism-based countries their ratio of FDI is so high because of high tourism and tourism contribute a lot in their GDP but after applying the Wald test its results concludes that there is nullifying effects on the economic growth of the 5 of the countries. As to check the impact of FDI so many researchers have been researched according to the related topic but in this research, the West African countries can be chosen to check the impact on FDI foreign direct investment and the countries which can be chosen can be named as Burkina-Faso, Cote d'Ivoire, Ghana, Guinea Bissau, Liberia, Niger, Nigeria, Senegal, and Sierra Leone. The panel data can be selected for the research and the period was 2000-2016 and after that, the research can observe that negative effect on the economic growth of FDI. The research can conclude the finding and states that FDI is not the appropriate mean to boost the economy economic growth of West African countries but secondary and third-level sector and industries will be more helpful to improve the economic growth so research states that FDI is not the best way to improve the economic growth of the West African countries (Countries & Velonjara, 2019).

Lasbrey et al., (2018) in his research state that FDI can perform a very impressive role in the wellbeing of the economy and economic growth and especially for the developing countries the author concludes that on the host countries FDI has a positive effect and the review of different papers can be chosen from 1980-2018 and the after findings it can be clear that in host countries most of the impact is positive and good but in some and little cases it can also be given the negative impact on the FDI.

Pandya & Sisombat, (2017) has done the research and in his research, he checks the impact of FDI foreign direct investment on the Economic growth of Australia and for this purpose regression analysis has been done and multiple regression model applied on this model and as a result, it shows that on some factors FDI can give better performance and on the GDP of the Australia FDI can be effective but if we conclude the and sum the overall result of the GDP then it is concluded that FDI cannot be able to give the accurate and wishful results. In the case of Pakistan FDI and Economic growth bounding can be check and data can be taken from 1980-2017 from the world development bank the time series data can be used and the method used to check the results and findings was ARDL and after applying and implementing the ARDL it is concluded that FDI cannot be performing well as compare to the exports of the economy of Pakistan so in case of Pakistan the study show the low impact of FDI (Ajmal, 2020).

Ali & Mingque (2018) in his research he finds the interconnection of FDI and Economic growth his area of research was Asian developing countries and countries were India, Bangladesh, Indonesia, and Malaysia and the data year was 1990-2014 cointegration was used and is used for the long run GC test was used for the short-term results and indicates that there is no causality in the short term and long run there is a good outcome from the FDI, and result are good. Carbonell et al., (2018) a lot of work has been done and a lot of literature available on FDI and economic growth in this research author used to check the impact of FDI on economic growth on Spain economy and he uses the data of 1984-2010 and then testing different variables and then getting to find it is concluded that there is no positive role of the FDI.

Fan & Wang (2018) can utilize his effort to check the impact and relationship of the FDI on the economic growth of Bangladesh because according to research Bangladesh is the most inflow gainer and the contribution is the most so the author can apply the co-integration and Vector Error Correction Metrics (VECM) Test by using the data from 1990-2015 and in his findings, it is concluded that FDI inflows can have very impressive results on the economic growth and GPD of Bangladesh so its governments need to promote more policies to get more stability in the growth.

Ali & Xialing (2017) states that there is a positive connection between FDI, economic growth, and international trade he uses time-series data from 1991-2015 for his research and he clearly states the FDI can be effective in the case of Pakistan, and FDI helps to improve the stability and overall performance of the growth. His only aim to check the impact of FDI from the perspective of Pakistan.

Caesar et al., (2018) the literature related to china's GDP, FDI, and growth is so much and a lot of researchers has done research in this study the main purpose is to check the n foreign direct investment (FDI), growth of output indicators, and gross domestic product (GDP) in china so for this the following techniques can be used and these are called as Granger causality test depend on the vector error correction model and data is taken from 1995-2016 the results show that there is a bidirectional link among all of these three factors or determinants in both cases short and long run and there are unidirectional terms between GDP services sector.

Mahmoodi & Mahmoodi (2016) has done the research on two-panel countries and in his research, he chooses eight European and eight Asian countries his main aim is to examine the connection between FDI, economic growth, exports, and GDP and in his findings, he can conclude that in the short run there is bi-directional causality among FDI and GDP and unidirectional between FDI GDP and exports and in the case of long-run there is causality also present. Macedonian economy has got very good results from the FDI so the purpose of the study is to examine the overall performance of automotive sector with FDI inflows so the data is taken from 2009-2004 and the clarify the results and it is very appreciated that automotive sector has got very positive results from the FDI which will be helpful to increase the economic growth (Khalil et al., 2018).

Dinh et al., (2019) Vietnam is the most emerging economy so the research has been to check the effect of economic openness and economic institutions on growth also to check the response of FDI so the 63 provinces data taken of Vietnam and it is taken from the period of 2005-2015 the method to find the results are GMM estimators the results tell that if we mixed both the institutions and trade openness then the result on economic growth is negative but if single they can work positively and FDI also perform well.

Personal & Archive (2019) the 24 Asian economies can be selected to find out the impact of trade openness and FDI the data is taken from 2002-2017 the fixed and random effect model technique can be used to find out the results so the results indicate that domestic industry can be more helpful to improve the economic growth and the FDI and trade openness will not be able to fulfill the target, so it is recommended to improve the domestic industry.

Personal & Archive (2019) FDI can be treated as one of the most important functions of economic growth so in this study Tunisia economy can be checked for the analysis of economic growth that rather the domestic industry is important or FDI can perform well so for this purpose the data is taken from the year 1976-2017 and ARLD bound test can be used to examine the results so the study tells us that in the long run both of the factors cannot be able to achieve the results but in short-run case, the only domestic industry can be able to achieve the results in the case of Tunisia economy.

III. DATA DESCRIPTION AND METHODOLOGY

Variable Name	Data Source
Gross Domestic Product	WDI
Exports of Goods and Services	WDI
Foreign Direct Investment	WDI

Table 1: Data Sources

Above shows, all the variables that I even have utilized in my studies in which my based variable is GDP in the image and my impartial variables in the picture are Exports of Goods and Services, Foreign Direct Investment and I took all this information from the World Development Index (WDI). I took the statistics from 1970 to 2019. The longest length is taken for the analysis.

Where.

- GDP growth (annual %)
- Foreign direct investment, net inflows (% of GDP)
- Exports of goods and services (% of GDP)

On the basis of empirical studies Ali (2011), Ali (2015), Ali (2018), Ali and Bibi (2017), Ali and Ahmad (2014), Ahmad and Ali (2016), Audi and Ali (2016), Ali and Audi (2016), Ali and Audi (2018), Ali and Rehman (2015), Audi and Ali (2017), Ali and Naeem (2017), Audi and Ali (2017), Ali and Zulfiqar (2018), Ali et al., (2016), Arshad and Ali (2016), Ashraf and Ali (2018), Sajid and Ali (2018), Ali and Senturk (2019), Kassem et al, (2019), Ali and Bibi (2020), Sulehri and Ali (2020) and Audi et al., (2021), Ali et al., (2021), Senturk and Ali (2021) and Roussel et al., (2021). The model of the study become as:

$$\mathrm{GDP_t} = \beta_0 + \beta_1 \mathrm{EX_t} + \beta_2 \mathrm{FDI_t} + \mathcal{E}_t \_\_\_\_\_\_\_\_\_\_ \quad (1)$$

IV. AUTOREGRESSIVE DISTRIBUTED LAG (ARDL) COINTEGRATION ANALYSIS

This looks at the hired recently advanced ARDL bounds testing method of cointegration developed with the aid of (Pesaran, 1997), (Pesaran et al., 2001) approach to cointegration has ended up famous in recent years. The ARDL cointegration technique has countless advantages in assessment with different cointegration strategies consisting of (Engle & Granger, 1987), (Søren Johansen, 1988) and (Soren Johansen & Juselius, 1990) tactics: First, the ARDL method may be carried out whether the regressors are I (1) or I (0), whilst JC strategies need that each one the variables within the device be of equal order of integration. This means that the ARDL may be implemented irrespective of whether underlying regressors are only I (0), simply I (1), or mutually co-integrated and consequently no want for unit root pre-testing. Second, even as the JC strategies require large information representative for sustainability, the ARDL technique is a statistically greater approach to determine the CC in compact samples. Third, the ARDL system lets in that the variables may also have specific surest lags, at the same time as it is far not possible with CC strategies. The ARDL process employs the most effective a single decreased form equation, while the traditional cointegration techniques estimate the long-run relationships within a context of system equations. The ARDL technique to cointegration involves two steps for evaluating long-term dating (Pesaran et al., 2001). The 1st step is to analyze the lifestyles of long-term dating amongst all variables in the equation underestimation. The ARDL version for the standard log-linear practical specification of lengthy-run courting among GDP, export EX, and FDI might also comply with as:

For my study, the ARDL model is:

$$\Delta \mathrm{GDPt} = \beta_0 + \beta_1 \mathrm{EX_t} + \beta_2 \mathrm{FDI_t} + \sum_{t=1}^{t=n} \alpha_0 \Delta \mathrm{GDP_{t-1}} + \sum_{t=1}^{t=n} \beta_1 \Delta \mathrm{EX_{t-1}} + \sum_{t=1}^{t=n} \beta_2 \Delta \mathrm{FDI_{t-1}} + \mathcal{E}_t \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \quad (2)$$

Where Ɛ_t and Δ are the white noise period and the primary different operator, respectively.

AIC and SBC. SBC is commonly utilized in inclination to different standards because it serves to define much user identification. The bounds trying out procedure is depending on the joint F test that checks the

N Hypothesis: Ho= zero (Long-Run Relationships does not Exist)

Alternative Hypothesis: H1≠ 0 (Long-Run Relationships Exist)

Two sets of essential values (CVs) that are stated in (Pesaran et al., 2001) offer CV bounds for all classifications of the regressors into basically I (1), in basic terms I (0) or mutually cointegrated. If the calculated F statistics lie above the top level of the band, the null is rejected, indicating cointegration. If the calculated F-records is beneath the

upper CV, we cannot reject the null hypothesis of no cointegration. Finally, if it lies among the boundaries, a conclusive inference cannot be made without knowing the order of integration of the underlying regressors.
If there may be proof of lengthy-run relationships (cointegration) among the variables, the second step is to estimate the subsequent long-run and brief-run fashions which are represented in Equations (3) and (4):

$$\mathrm{GDPt} = \alpha_0 + \sum_{t=1}^{t=n} \pi_0 \Delta \mathrm{GDP}_{t-1} + \sum_{t=1}^{t=n} \pi_1 \Delta \mathrm{EX}_{t-1} + \sum_{t=1}^{t=n} \pi_2 \Delta \mathrm{FDI}_{t-1} + \mathcal{E}_{t2} \quad (3)$$

$$\Delta \mathrm{GDPt} = \alpha_0 + \sum_{t=1}^{t=n} \Omega_0 \Delta \mathrm{GDP}_{t-1} + \sum_{t=1}^{t=n} \Omega_1 \Delta \mathrm{EX}_{t-1} + \sum_{t=1}^{t=n} \Omega_2 \Delta \mathrm{FDI}_{t-1} + \psi_1 \Delta \mathrm{ECT}_{t-1} + \mathcal{E}_{t3} \quad (4)$$

Wherein ψ is the coefficient of error correction term (hereafter ECT). It suggests how quick variables converge to equilibrium and it ought to have a statistically big coefficient with a negative sign.

V. GRANGER CAUSALITY

Thus, the econometric evaluation indicates that any causal relationships inside the dynamic VEC model. ARDL cointegration approach exams whether or not or now not the existence or absence of prolonged-run relationships among real GDP, actual EX, and FDI. It does now not endorse the course of causality. (Pesaran & Shin, 1998) emphasizes that a vector errors correction (hereafter VEC) modeling ought to be predicted in preference to a vector autoregression (hereafter VAR) as in a famous GC test if variables in the model are cointegrated. Once estimating the long-run model in Equation (3) to obtain the predicted residuals, the following step is to estimate errors-correction based mostly on Granger causality models. Thus, the subsequent fashions may also additionally moreover hire to explore the causal dating amongst variables: the model may be expected.

$$\Delta \mathrm{GDPt} = \infty_0 + \sum_{t=1}^{t=n} \text{€}_0 \Delta \mathrm{GDP}_{t-1} + \sum_{t=1}^{t=n} \text{€}_1 \Delta \mathrm{EX}_{t-1} + \sum_{t=1}^{t=n} \text{€}_2 \Delta \mathrm{FDI}_{t-1} + \psi_2 \Delta \mathrm{ECT}_{t-1} + \mathcal{E}_{t4} \quad (5)$$

$$\Delta \mathrm{EXt} = \text{£}_0 + \sum_{t=1}^{t=n} \text{₼}_0 \Delta \mathrm{GDP}_{t-1} + \sum_{t=1}^{t=n} \text{₼}_1 \Delta \mathrm{EX}_{t-1} + \sum_{t=1}^{t=n} \text{₼}_2 \Delta \mathrm{FDI}_{t-1} + \psi_3 \Delta \mathrm{ECT}_{t-1} + \mathcal{E}_{t5} \quad (6)$$

$$\Delta \mathrm{FDIt} = \text{¥}_0 + \sum_{t=1}^{t=n} \text{₺}_0 \Delta \mathrm{GDP}_{t-1} + \sum_{t=1}^{t=n} \text{₺}_1 \Delta \mathrm{EX}_{t-1} + \sum_{t=1}^{t=n} \text{₺}_2 \Delta \mathrm{FDI}_{t-1} + \psi_4 \Delta \mathrm{ECT}_{t-1} + \mathcal{E}_{t6} \quad (7)$$

Residual phrases, Ɛ_t4, Ɛ_t5, and Ɛ_t6 are independently and commonly allotted with zero mean and steady variance. A relevant lag preference is on the whole dependent on a criterion that includes AIC and SBC. Rejecting the N hypotheses advocate that FDI or EX does Granger cause, GDP or FDI does Granger reason EX, and GDP or EX has Granger reason FDI, respectively.

As in opposition to the traditional, the error-correction based causality test permits for the inclusion of the lagged mistakes-correction term derived from the cointegration equation. By together with the lagged blunders-correction term, the prolonged-run facts out of place thru differencing is reintroduced in a statistically appropriate way (see (Narayan & Smyth, 2008), and (Odhiambo, 2009)). In this approach, we differentiate among "brief-run" and "long-run" GC. The Wald-check of the "differenced" explanatory variables supply us an indication of the "short-term" causal consequences, on the equal time as the "long-run" causal dating is implied through the significance or specific sensible of the t-test of the lagged errors that include the lengthy-time period records on account that it's far derived from the prolonged-run cointegrating courting. No significance or elimination of any of the "lagged mistakes-correction phrases" affects the implied long-run relationship and can be a contravention of the concept. The no sign of any of the "differenced" variables shows handiest a quick-run courting. However, it does now not contain such violations. Because precept usually has little to mention about brief-time period relationships (Masih & Masih, 1996).

VI. EMPIRICAL RESULTS

In this look at we look at the causal dating among GDP, exports of goods and offerings (EX), and FDI in MINT international locations using annual time-collection records. To study this linkage, we use the two-step system from the (Engle & Granger, 1987) version: In step one, we explore the long-run relationships between the variables using these days developed ARDL bounds testing method of cointegration. In the second step, we employ a dynamic VEC version to check the causal connection between variables checks causal association among variables.

VII. ARDL BOUND TEST

Table 2 presents the envisioned ARDL fashions which might be based totally on SBC. By looking at the f stat which is greater than I (1) certain, therefore, we reject Ho at five% significance degree and conclude that variables which are delivered inside the model are sure together, in the long run, way they are collectively sizeable in the long term for all the Four nations Mexico, Indonesia, Nigeria, Turkey. In other phrases, there is cointegration at the end of most of the variables in every country. Thus, the econometric evaluation suggests that any causal relationships inside the dynamic VEC version can be anticipated.

Table 2

Country	Critical level 1% I (0)	I (1)	Critical level 5% I (0)	I (1)	Critical level 10% I (0)	I (1)	F-Stat f- stat	Decision Decision
Mexico	4.13	5	3.1	3.87	2.63	3.35	7.49	Reject Ho
Indonesia	4.13	5	3.1	3.87	2.63	3.35	6.66	Reject Ho
Nigeria	4.13	5	3.1	3.87	2.63	3.35	9.35	Reject Ho
Turkey	4.13	5	3.1	3.87	2.63	3.35	8.63	Reject Ho

VII. CAUSALITY ANALYSIS

The tables depict that there is only unidirectional causality from GDP to exports of goods and services in Indonesia rest no causality is seen in any of the countries.

Table 3

Null hypothesis	Mexico	Indonesia	Nigeria	Turkey
EX does not granger cause GDP	0.20	0.58	0.27	0.33
FDI does not granger cause GDP	0.12	0.88	0.11	0.11
GDP does not granger cause EX	0.85	0.68	0.68	3.89
FDI does not granger cause EX	0.29	0.98	0.06	0.10
GDP does not granger cause FDI	0.47	0.007	0.21	4.24
EX does not granger cause FDI	0.20	0.12	0.51	3.56

VIII. CONCLUSIONS

This research offers a survey of the literature on FDI, export, and Growth, reading both the concept that underlies the illustrations in this area and the effects of empirical research. Overall, many researchers seem to choose the traditional assumption that FDI has a high-quality effect on the boom. The ARDL bounds test technique is used to analyze the span of long-run relationship among FDI, export, and GDP for MINT countries (Mexico, Indonesia, Nigeria, and Turkey) in this test. And then the Granger causality used to study the causality problems of a number of the variables through using annual data from 1971 to 2019. The ARDL bounds test method and the Granger causality used to find the results of the paper and conclude that there is a unidirectional causality from GDP to FDI in case of Indonesia rejecting the null speculation of GDP does not causes granger causality FDI at 5%. Several tests implications have been examined. For example, consequences endorse that the USA's capability to improve monetary increase will depend on its policies to sell FDI. The best possible way to conclude FDI is to reputation of following areas, which includes low exchange rate, exchange regime, tax incentives financial market hints, monetary device, and infrastructure developments.

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