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Foreign Direct Investment Response to Economic Growth Shocks: Evidence from a VAR Estimation on a Panel Dataset

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Abstract

This paper examines the relationship between inward foreign direct investment (IFDI) and economic growth in OECD and ASEAN, China and Hong Kong (East Asia) over the past 35 years (1985-2019). Our estimates using vector autoregression on a panel dataset show that the mutually causal relationship between IFDI inflows and economic growth exists in both the advanced and emerging countries. However, the relationship appears to be stronger in the OECD economies than in the East Asian economies, and IFDI is more responsive to economic growth in the OECD countries. The results from impulse response functions also indicate that a shock in economic growth leads to a change in the IFDI inflows into OECD countries while there is no strong evidence in ASEAN, China and Hong Kong.

JEL: F21, F23, F43, O11

Keywords: foreign direct investment; economic growth; PVAR, impulse response functions OECD; East Asia

1. Background and literature

As it has been widely evidenced inward foreign direct investment (IFDI) helps boost the economic growth and vice versa (Abbes, Mostéfa, Seghir, & Zakarya, 2015; Batten & Vo, 2009; Dritsaki, Dritsaki, & Adamopoulos, 2004; Nair-Reichert & Weinhold, 2001; Shan, 2002; Srinivasan, Kalaivani, & Ibrahim, 2010; Anwar and Nguyen, 2010). Attracting more IFDI may be one of the ways to grow economies. However, the response of the IFDI inflow to the change in economic growth varies across countries or regions due to the country or region heterogeneity.

There is a well-established body of the literature on the causal relationship between IFDI and economic growth for both developing and developed countries (e.g., Almfraji & Almsafir, 2014; Omri, Nguyen, & Rault, 2014; Tiwari & Mutascu, 2011; Adalı & Yüksel, 2017; Omri & Sassi-Tmar, 2015). Investment including IFDI is the way to accumulate capital stocks, creates employment and income which contribute to economic growth. Moreover, IFDI also brings along technologies and high-skilled labour to operate the technologies

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that result in possible spillovers to the host country's local firms, ultimately improving productivity growth and hence economic growth (Findlay, 1978; Blomstrom, et al. 1992; Irandoust, 2001; Carkovic and Levine, 2005; Dunning and Lundan, 2008). Pegkas (2015) examines the role of IFDI in the Eurozone economies and finds that a one percent increase in the IFDI stock leads to about a 0.1 percent improvement in economic growth during the period 2002-2012.

Economic growth also affects IFDI inflows. Faster growing economies attract IFDI inflows as IFDI is the market and rent-seeking to expand their market shares and to improve businesses' profitability. Hence, fast-growing economies are more attractive to IFDI (De Mello Jr 1997). It is also important to note that there is a confirmed causal relationship between the outward foreign direct investments (OFDI) and the home country's economic growth (Ciesielska and Kottuniakl, 2017), which shows that the home country's economic growth turns out to be constantly preceded by outward IFDI growth.

However, IFDI appears to be more effective in economic growth in more open countries, that is, the effect varies across countries due to the country heterogeneity. For example, Nair-Reichert and Weinhold (2001) find no evidence of the causal relationship between IFDI and economic growth in 24 developing countries in Asia, Africa, and South America over 25 years (1971-1995). Meanwhile Choe (2003) using a VAR model on a panel dataset of 80 countries in the 1971-95 period finds that IFDI and economic growth affect each other via a Ganger-cause relationship. Zhang (1999) tests the relationship on the East Asian countries and finds that the impact of IFDI on economic growth is conditional on the country heterogeneity. De Mello (1999) in a study on 32 OECD and non-OECD countries finds that heterogeneity across economies plays an important role on the impact on IFDI on the long-run GDP growth in the OECD region while there is no causal relationship found in the non-OECD economies in their sample.

In a sectoral analysis, Chakraborty and Nunnenkamp (2008) investigate the relationship in the case of India and show that the linkage varies across industries in which the manufacturing sector appears to have the strongest link between IFDI and economic growth. A long-run relationship between these two factors is also evidenced, and the impact of economic growth on IFDI inflows is stronger than the effect of IFDI on economic growth in India.

Overall, most studies on the issue confirm a causal relationship between IFDI and GDP growth in both advanced and emerging economies. However, the magnitude and significance of the relationship vary across countries due to the country-specific heterogeneity. The Ganger-cause relationship, which means shocks in the past value of IFDI may result in a change in the present value of GDP growth and vice versa, is also confirmed in some cases.

This paper aims to examine the causal relationship between economic growth and IFDI in the OECD countries and ASEAN, China and Hong Kong. We also aim to investigate the way IFDI responds to shocks in economic growth in these selected countries over the prolonged period (1985-2019). Our paper adds some insights to the existing literature. First, this is among the first studies that examine the causal relationship between IFDI and economic growth in a panel data set which allows us to examine the effect of the prior shocks of one variable on the other variable. Second, by using the VAR technique

on a panel dataset of wider setting covering both advanced and emerging economies, the paper is able to investigate a complex causal relationship between IFDI and economic growth while allowing for unobserved country-specific heterogeneity. Third, the existing studies either focused on developed or developing countries with the outdated data, we used a prolonged and updated data spanning from 1985 to 2019, and the study countries in our data account for almost the entire world GDP (more than 82% in 2017).

The rest of the paper is structured as follows. The next section presents the methodology. Section three provides data description. Section four discusses the results. Section five presents conclusions and discussions.

2. Estimation methods

The current paper aims to examine if economic growth leads to any change in the IFDI inflow across countries over time and vice versa. We consider the causal relationship between economic growth and IFDI inflows where these two variables are endogenous indicating that their contemporary values are affected by their prior values. Following Nair-Reichert and Weinhold (2001), the general equation is detailed as follows.

$$Y_{it} = \beta_1 Y_{i,t-k} + \beta_2 X_{i,t-k} + \\ + \beta_3 Z_{i,t-k} + u_i + e_{it}\ , k \geq 1 \qquad (1)$$

where Y_{it} is the dependent variable (IFDI inflow, economic growth) i in year t that depends on its own lags ($Y_{i,t-k}$) and lags of the variable of interest ($X_{i,t-k}$) and other controlling variables ($Z_{i,t-k}$); u_i+e_{it} is a vector of residuals, where u_i is called impulses or innovations or shocks. k is lag level taking value 1-3. In model (1) both Y and X are endogenous and the relationship between these two variables is dynamic. A panel vector autoregression model (PVAR) under the generalized method of moments framework is applied to examine the causal relationship in equation (1) (Abrigo and Love, 2016). Because both X and Y are treated as endogenous variables and to address unobserved country-specific heterogeneity, we applied the panel VAR technique instead of the standard VAR (Love and Zicchino, 2006).

To test the causal relationship, following Lütkepohl (2005) and Abrigo and Love (2016), a Wald test for Granger-causality is applied. Apart from examining the relationship between IFDI and economic growth, we also investigate whether shocks in the economic growth lead to any changes in the IFDI inflows that can allow us to predict the IFDI trend in the following years. This can be observed in the error terms, or in other words, the impulses or innovations where it shows that a shock to one variable may be driven from shocks from other variables. The impulse response functions (IRFs) can be estimated by rewriting the model as an infinite vector moving-average, where the IRF parameters are the vector moving-average parameters (Abrigo and Love, 2016). It is worth noting that the VAR estimation is robust and consistent when the modules of the companion matrix are strictly less than one (Lütkepohl, 2005; Abrigo and Love, 2016).

Our estimation system is as below:

$$FDI_{it} = \beta_0 + \beta_1 FDI_{i,t-k} + \\ \beta_2 EG_{i,t-k} + \beta_3 openess_{i,t-k} + \\ \beta_4 income_{i,t-k} + \beta_5 inflation_{i,t-k} + \\ u_i + e_{it},\ k = [1,2,3] \qquad (2)$$

$$EG_{it} = \gamma_0 + \gamma_1 EG_{i,t-k} + \gamma_2 FDI_{i,t-k} + \\ \gamma_3 openess_{i,t-k} + \gamma_4 income_{i,t-k} + \\ \gamma_5 inflation_{i,t-k} + u_i + e_{it},\ k = [1,2,3] \qquad (3)$$

IFDI measure the growth of IFDI annual inflows and *EG* is the economic growth rate (real GDP growth rate). Other controlling variables include *openness* (proportion of export to GDP), the growth of the individual's income or GDP per capita, and (CPI) inflation. The estimation of equation (2) and (3) requires all the variables to be stationary where the growth rate or differencing is more appropriate (Abrigo and Love, 2016).

3. Data

The dataset used in this paper consists of 46 countries including OECD countries, 10 ASEAN countries, China and Hong Kong spanning 35 years from 1985 to 2019. The long panel dataset covers few economic shock events including the global financial crisis during 2008-2009, the Asian financial crisis in 1997-99 and SARs in 2003. The dataset was obtained from the World Development Indicators (WDI) – a World Bank's database. Some countries (the Czech Republic, Slovakia, Cambodia, and Timor Ester) whose data are missing in earlier years of the study period were excluded. Our final data consists of 46 countries with 1,206 observations.

Because variables measured in level are more likely to be non-stationary, we transformed the variables by computing the first difference (for example, *DIFDI* is calculated as $\Delta FDI_{it} = FDI_{it} - FDI_{i(t-1)}$ in order to generate stationary variables that allow us to conduct unbiased estimations (Abrigo and Love, 2016). The distributions of our key variables of interest, $DIFDI$ and EG, are presented in Figure 1.

4. Results

4.1. Estimation results

Before discussing the results, it is important to test if the panel is stationary, which allows the estimation of equation (2) and (3) to be consistent. We first test our panel for the stationary using the Fisher-type unit root test. The null hypothesis (Ho) is that all panels contain unit roots while the alternative hypothesis is that at least one panel is stationary (Choi 2001). The results for the main variables of interest are presented below.

The test results (Table 1) reject the null hypothesis which means that there are no unit roots in the panel.

Our main focus in this paper is to test the two-way relationship between IFDI inflows and economic growth in order to see how one of these two variables responds to a change (or shock) in the other variable[2]. We start with the PVAR estimation of the equations (2) and (3) with only these two main variables

Table 1. Unit root test

		DIFDI		EG	
		Statistics	p-value	Statistics	p-value
Inverse chi-squared	P	213.71	0.0000	190.27	0.0000
Inverse normal	Z	-2.12	0.0000	-6.32	0.0000
Inverse logit t	L*	-7.65	0.0000	-6.43	0.0000
Modified inv. Chi-squared	Pm	8.97	0.0000	7.24	0.0000

Notes: Panel means, and time trends included, Fisher-type unit root test

[2] We also estimated OLS, FE and RE models to provide baseline estimates, and the results are reported in the Appendix 1.

Table 2. PVAR estimation of 2-variable dataset (IFDI and EG)

	Response to	
Response of	DIFDI	EG
DIFDI(t-1)	-0.3550***	0.1440
	(0.0510)	(0.1190)
DIFDI(t-2)	-0.1110**	-0.1310
	(0.0467)	(0.1140)
DIFDI(t-3)	-0.0228	-0.0746
	(0.0446)	(0.0965)
EG(t-1)	0.0610***	0.5080***
	(0.0113)	(0.0602)
EG(t-2)	-0.0063	0.0084
	(0.0100)	(0.0512)
EG(t-3)	0.0297***	0.1900***
	(0.0090)	(0.0449)
Observations	1,066	1,066

Notes: Standard errors in parentheses, significant *** p<0.01, ** p<0.05, * p<0.1. Column (1) shows the response of the variables to IFDI inflows, and column (2) indicates the response to economic growth (EG).

Table 3. PVAR estimation on the full set of variables

Response of	Response to	
	DIFDI	EG
DIFDI(t-1)	-0.4240***	0.2180*
	(0.0635)	(0.131)
DIFDI(t-2)	-0.2110***	-0.0557
	(0.0470)	(0.125)
DIFDI(t-3)	-0.0518	-0.0883
	(0.0389)	(0.111)
EG(t-1)	0.0547***	0.5000***
	(0.0114)	(0.0684)
EG(t-2)	0.0010	0.0045
	(0.0095)	(0.0560)
EG(t-3)	0.0222**	0.1770***
	(0.0094)	(0.0506)
Income(t-1)	1.16e-05	-9.99e-05**
	(1.70e-05)	(4.85e-05)
Income(t-2)	5.30e-06	-3.08e-05
	(1.51e-05)	(4.46e-05)
Income(t-3)	1.44e-05	-2.95e-06
	(1.36e-05)	(3.70e-05)
Openness(t-1)	0.1880	-0.5530
	(0.117)	(0.6090)
Openness(t-2)	0.02980	0.7440
	(0.0758)	(0.5540)

Response of	Response to	
	DIFDI	EG
Openness(t-3)	-0.1230	-1.0810**
	(0.0868)	(0.4780)
Inflation(t-1)	-0.0012	-0.0102
	(0.0035)	(0.0229)
Inflation(t-2)	0.0014	0.0247
	(0.0044)	(0.0212)
Inflation(t-3)	-0.0006	-0.0133
	(0.0052)	(0.0203)
Observations	948	948

Notes: Standard errors in parentheses, significant *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Granger causality Wald test

		Chi2	Prob > chi2
DIFDI	EG	27.071	0.0000
	All variables	38.84	0.0000
EG	DIFDI	6.339	0.0960
	All variables	22.993	0.0280

of interest (Table 2), we then estimate a full model in which a full set of variables including IFDI, EG, income, openness and inflation is included (Table 3).

We find a consistent result on the response of IFDI inflow to economic growth in both Tables 2 and 3, that is IFDI response is significantly positive to the change in EG. However, when we control further for the other variables, the response of IFDI to a change in EG becomes smaller but still statistically significant (0.0547 compared with 0.0610). By contrast, economic growth is not significantly responsive to the change in IFDI inflows in the single PVAR estimation (Table 2) but appears to be positively responsive to the change in the IFDI inflow in the multiple PVAR (Table 3).

4.2. Granger causality Wald test

We conduct a Granger causality test to see whether the prior (lagged) value of one variable causes any changes in the contemporary value of the other variables. The null hypothesis of the test is that EG does not cause DIFDI (and vice versa that DIFDI does not cause EG). In Table 4, we report only the test results.

The test results show that the null hypothesis is rejected (P<0.001), suggesting that the prior or lagged economic growth impacts IFDI inflow. Similarly, the null hypothesis that IFDI does not cause economic growth is rejected at the 10% significance level. The test results also expose all the lags of other controlling variables in the system apart from those of the dependent variables (DIFDI in the first and EG in the second panel).

4.3. Stability test

We now test the stability of the estimation to see if our estimates are stable. Detailed moduli are reported in Appendix 2. As discussed in the methodology section, it strictly requires all the moduli in the companion matrix to be less

than one for the PVAR estimates to be stable. Figure 2 below shows the result of the test on the 2-variable (IFDI and economic growth) and 5-variable (IFDI, economic growth, income, openness, inflation) estimations.

All the moduli of the eigenvalue of the fitted model lie within the unit circle; it suggests that the requirement of a stable PVAR estimation is satisfied. Therefore, our PVAR estimations in both cases are stable.

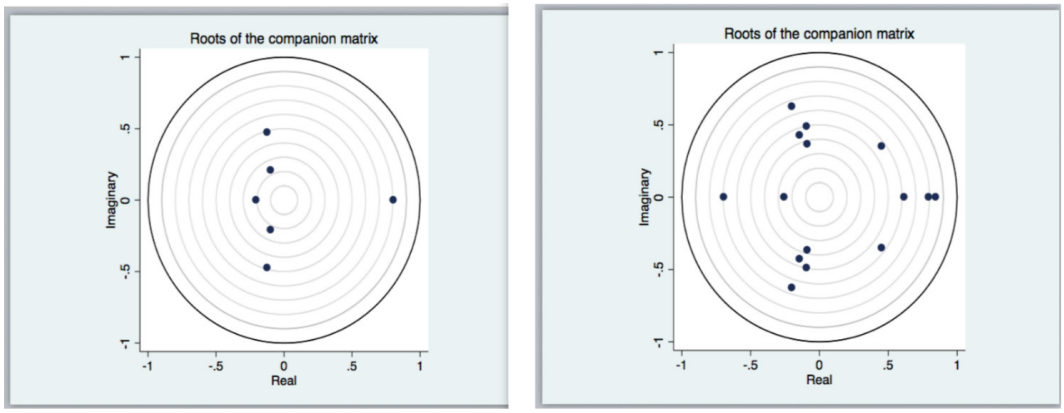

Figure 2. Stability test

Notes: Stability test for the 2-variable (on the left) and 5-variable (on the right) estimations.

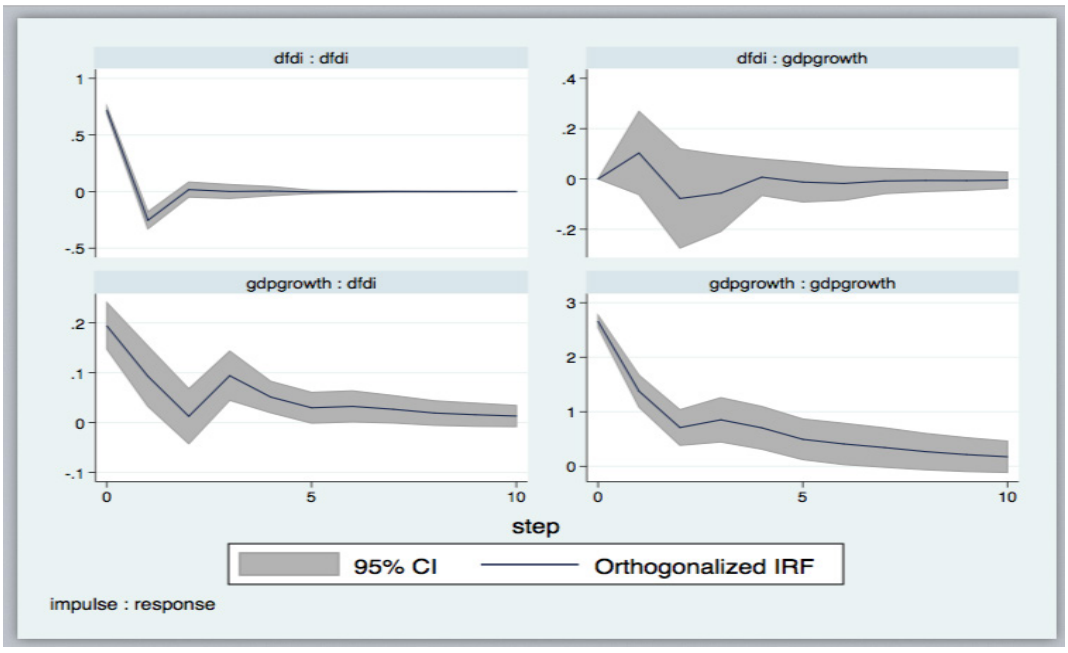

Figure 3. Impulse response functions on the 2-variable model.

Notes: Impulse response function on the 2-variable model. The ordering is made using the porder option where EG comes first, then DIFDI.

4.4. Impulse response function

Given that our PVAR estimations are stable, we can compute the orthogonalized impulse response functions. As Abrigo and Love (2016) have pointed out, that the calculation of orthogonalized IRFs is affected by the way that the endogenous variables are ordered in the Cholesky decomposition, the ordering in the command becomes important. They suggest that ordering affects the timing of the responses, in which the lags of variables come earlier in the ordering affect contemporaneously the other variables which come later in the ordering, while the latter only affects the future value of the former in the ordering. It is worth noting that the ordering does not affect the PVAR estimates but only the impulse response functions (Abrigo and Love, 2016). We argue that shocks in economic growth have an impact on contemporary IFDI, while contemporary IFDI only affects future economic growth, therefore, EG should come first in the ordering. The results are shown in Figures 3 and 4 below.

Following Abrigo and Love (2016), we compute the confidence intervals of the IFR using 200 Monter Carlo draws from the distribution of the fitted value from the PVAR estimation. The IFRs graphs show that a shock in the economic growth rate affects IFDI inflows as we see the confidence interval in the bottom left graph of Figure 3 does not overlap the zero line. By contrast, a change in

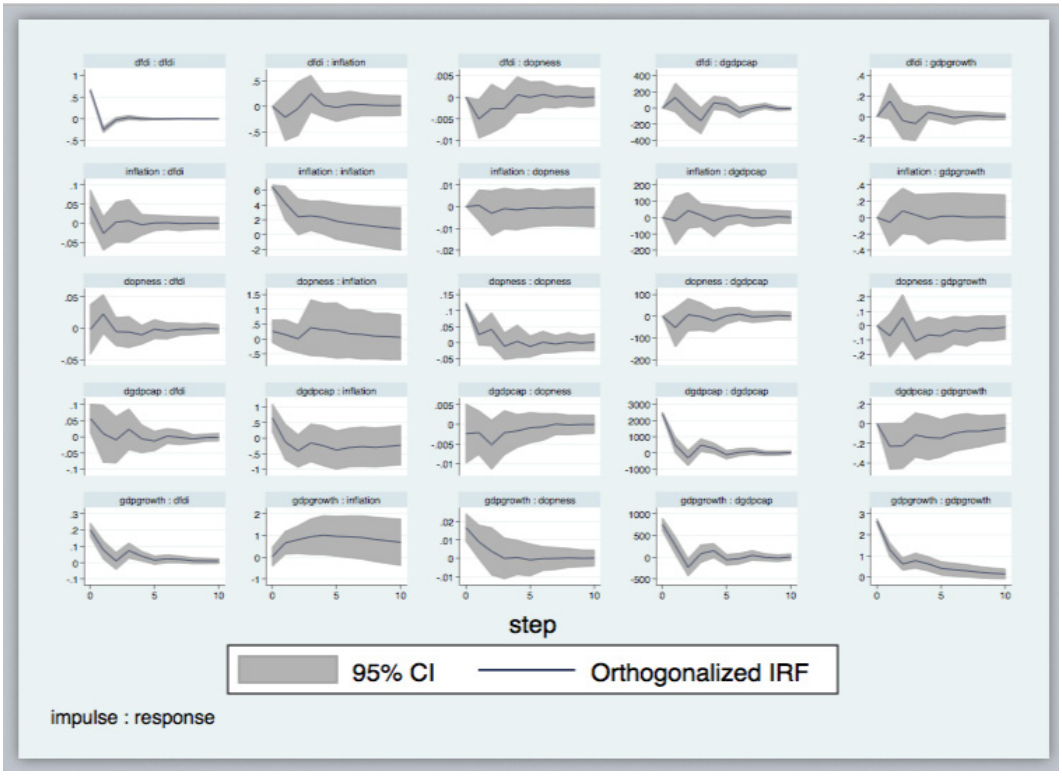

Figure 4. Impulse response functions on 5-variable model.

Notes: Impulse response function on the 5-variable model. The ordering is made using the porder option where EG comes first, then DIFDI at the end.

the IFDI inflows does not impact the economic growth significantly (the confidence interval in the top right graph overlaps the zero line).

Similarly, we observe the same pattern in Figure 4 on the IRFs of the full-model estimation. The confidence intervals in the bottom left graph do not cover the zero line indicating that shocks in economic growth do impact the change in IFDI inflows. Meanwhile, the top right graph shows the confidence intervals overlapping the zero line suggesting that changes in the IFDI inflows do not affect significantly economic growth.

Overall, PVAR estimates show a causal relationship between EG and IFDI with and without controlling for other factors. However, shocks in the economic growth appear to more strongly affect the change in IFDI inflows than the other way round (impact of IFDI inflows on economic growth) for the overall sample of OECD and ASEAN, China and Hong Kong over the past 35 years. In the next section, we stratify the sample into two sub-samples: OECD and Asia (ASEAN, China and Hong Kong) to examine if the causal relationship is different in these two regions.

4.6. Causal relationship by region (OECD vs. ASEAN, China, Hong Kong)

The PVAR estimates are reported in Table 5 and impulse response functions are presented in Figures 5 and 6.

Economic growth is found to have a positive effect on IFDI inflows in both the OECD and the East Asian countries; however, the effect magnitude is different across the country groups. The IFDI inflows in OECD countries are more responsive to economic growth than in the East Asian countries. Specifically, we observe that a one percentage increase in the preceding year's economic growth leads to an increase of 0.0612 decimal points in IFDI inflows in the OECD countries, and one percentage increase in economic growth leads to an increase of 0.0515 decimal points in IFDI inflows in the East Asian countries (ASEAN, China, and Hong Kong).

Overall, a causal relationship between IFDI and EG is observed in both country groups. A one percentage increase in IFDI inflows in the preceding year leads to an increase of 0.28% in economic growth in the OECD countries, while the effect is smaller (0.019%) for the East Asian sample. Moreover, IFDI inflows appear to be more responsive to economic growth than the other way round in both country groups.

Table 5. PVAR estimates on the OECD sample

Response of	OECD		ASEAN, China, Hong Kong	
	Response to		Response to	
	DIFDI	EG	DIFDI	EG
DIFDI(t-1)	-0.4450***	0.2820**	-0.3640***	0.0191*
	(0.0703)	(0.1320)	(0.1410)	(0.3660)
DIFDI(t-2)	-0.2290***	0.0223	-0.1950**	-0.2620
	(0.0549)	(0.1330)	(0.0837)	(0.2960)
DIFDI(t-3)	-0.0633	-0.0752	-0.0219	-0.0076
	(0.0466)	(0.1260)	(0.0600)	(0.2290)
EG(t-1)	0.0612***	0.4630***	0.0515**	0.5890***
	(0.0138)	(0.0855)	(0.0214)	(0.1110)
EG(t-2)	-0.0008	-0.0101	0.0160	0.0421
	(0.0105)	(0.0674)	(0.0192)	(0.0859)
EG(t-3)	0.0186*	0.1280**	0.0404**	0.2520***
	(0.0107)	(0.0611)	(0.0184)	(0.0835)
Income(t-1)	1.22e-05	-8.77e-05*	2.31e-05	-3.16e-05
	(1.81e-05)	(5.00e-05)	(4.47e-05)	(0.0002)
Income(t-2)	6.58e-06	-1.23e-05	-3.22e-05	-0.0003**
	(1.60e-05)	(4.49e-05)	(3.75e-05)	(0.0001)
Income(t-3)	1.27e-05	1.14e-05	8.38e-05*	0.0001
	(1.44e-05)	(3.72e-05)	(4.43e-05)	(0.0002)
Openness(t-1)	0.1020	-0.5900	1.1640*	-0.4240
	(0.0982)	(0.5520)	(0.6760)	(4.0840)
Openness(t-2)	0.0039	0.3650	0.1830	5.5470*
	(0.0656)	(0.5510)	(0.5700)	(3.1210)
Openness(t-3)	-0.0430	-0.5190	-2.0380***	-9.1780***
	(0.0723)	(0.5280)	(0.6070)	(3.0810)
Inflation(t-1)	0.0009	-0.0113	-0.0100**	-0.0258
	(0.0043)	(0.0386)	(0.0049)	(0.0183)
Inflation(t-2)	-0.0026	0.0367	0.0132**	0.0404***
	(0.0039)	(0.0348)	(0.0061)	(0.0146)
Inflation(t-3)	0.0044	-0.0204	-0.0167***	-0.0245**
	(0.0030)	(0.0335)	(0.0059)	(0.0102)
Observations	684	684	264	264

Notes: Standard errors in parentheses, significant *** p<0.01, ** p<0.05, * p<0.1

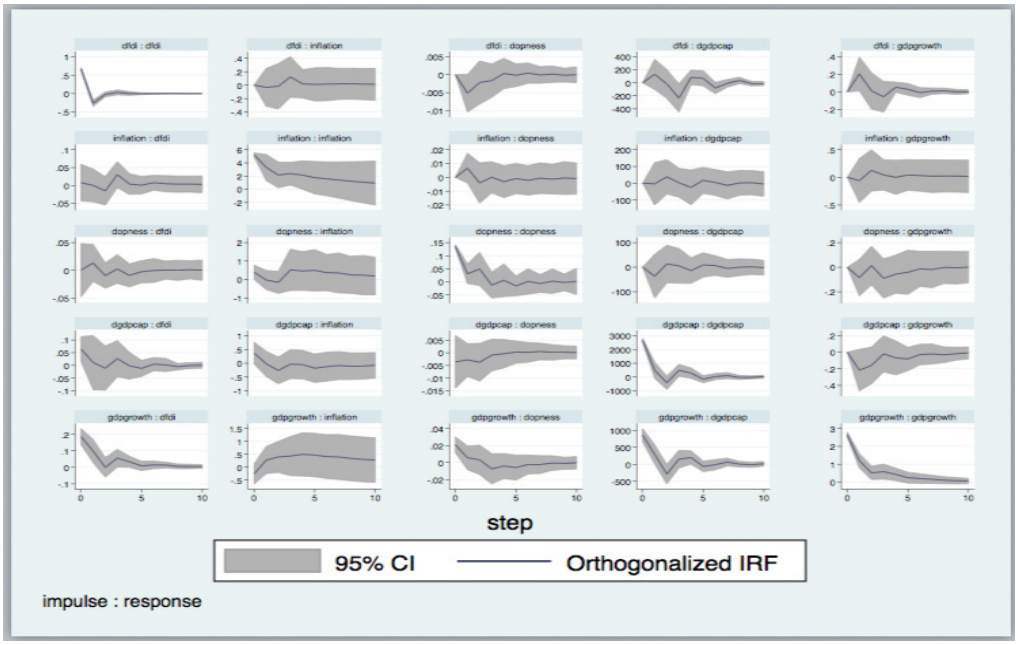

Figure 5. IRFs for OECD countries
Notes: The ordering is made using the porder option where EG comes first, then followed by DIFDI.

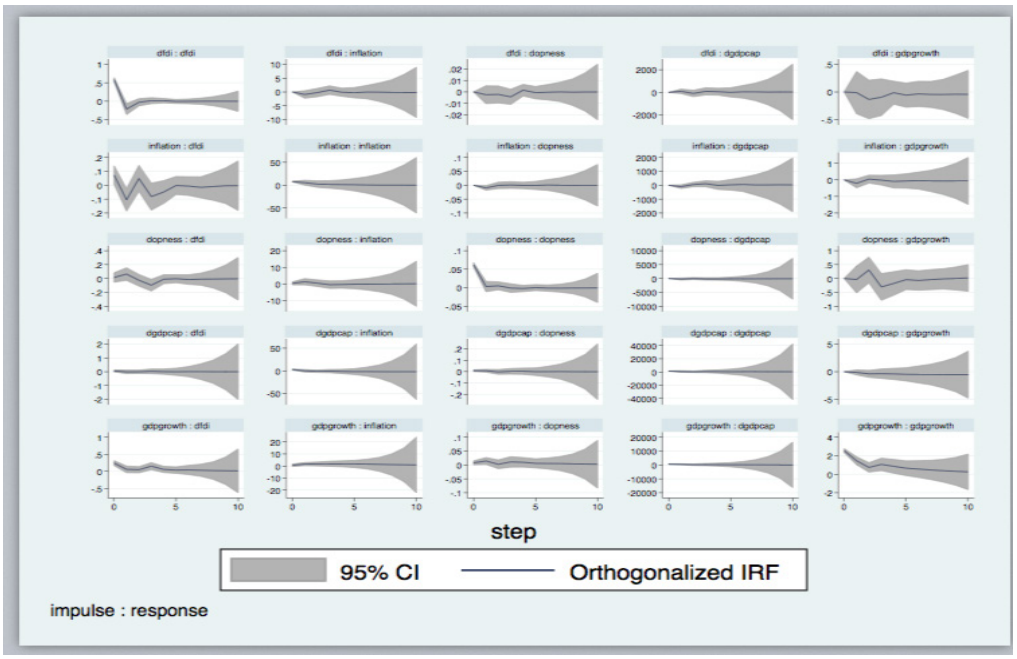

Figure 6. IRFs for ASEAN, China and Hong Kong
Notes: The ordering is made using the porder option where EG comes first, then followed by DIFDI.

IRFs graphs in Figure 5 show that shock in economic growth impacts the IFDI inflows in the OECD countries as the confidence intervals do not overlap the zero line in the bottom left graph. However, it is not observed that shocks in the IFDI affect economic growth as the zero line lies inside the confidence intervals in the top right graph.

Interestingly, neither shocks in the IFDI inflows affect economic growth nor shocks in economic growth influence IFDI inflows in the East Asian countries where the confidence intervals overlie the zero line in both Figure 6 (the top right and bottom left). Overall, the impulse response functions show that a shock in economic growth only affects the change in the IFDI inflows in OECD countries but not the other way round, and this effect is not observed in the East Asian countries.

The results indicate that the IFDI inflow responds to an economic growth differently across regions. The IFDI inflows are more responsive to economic growth in OECD economies than in the East Asian economies. This implies that economic shocks causing economic depression (lowering economic growth) may affect the East Asian economies less than the effect on the OECD economies.

5. Conclusion and discussion

This study employs the PVAR approach on a panel dataset of 46 countries over the period 1985-2019 to examine the causal relationship between economic growth and IFDI inflows in OECD and some East Asian economies (ASEAN, China and Hong Kong). We also examine how IFDI inflows respond to shocks in economic growth in the OECD economies and the East Asian emerging economies. The estimates show a causal relationship between IFDI and economic growth for the whole sample. However, IFDI has been more responsive to economic growth in the OECD countries than in the East Asian economies in the past 35 years. Further, the impulse response function estimates also consolidate our findings. The impact of IFDI inflows on the host countries' economic growth is also observed but at lower magnitude to that of the impact of economic growth on IFDI inflows.

The findings have some implications for the current economic climate due to the Covid 19 pandemic. For example, while the OECD economic growth is forecasted to be slower than in the East Asian economies in the next few years due to the Covid 19 outbreak (World Bank 2020), and given the IFDI inflows is less responsive to the economic growth shocks in the East Asian economies, IFDI inflows to the East Asian economies would still be less affected by the current Covid 19 pandemic in the foreseen future. On the contrary, the OECD economies' economic growth would face more challenges in the years ahead.

So why is IFDI less responsive to economic growth in the emerging East Asian economies, but more responsive to economic growth in the OECD countries? Dunning (1998) argues that motivations of IFDI could be seeking market, resource, efficiency and strategic assets. IFDI in developing countries are more of market seeking, expanding market shares and market growth, they enter the growing markets to expand their business. The developing countries also offer cheap labour and raw materials as well as economics of scales (market scales) so that IFDI firms can reduce costs of production and improve profitability. IFDI inflows in Asian have been motivated by rising market shares, market scales thanks to its fast growing economies, rising demand for their products due to rising household incomes (hence growing business opportunities) (Wadhwa & Reddy,

2011). Unlike IFDI in developing countries, the determinants of IFDI in the OECD countries are human resources, trade regime, effective infrastructure and government policies which may affect IFDI inflows to gain advanced technologies, productivity and profitability (Saini & Singhania, 2018; Agiomirgianakis, Asteriou, & Papathoma, 2003; Blomstrom, 2002). In the developed countries the markets are mature; there are not much spare rooms to expand, so that IFDI investments in developed economies are mainly M&A (brown-field investment), but not building new facilities in the green-field and given the IFDI motivation is rent-seeking that is why IFDI is more responsive to economic growth in OECD countries. However, there are limited studies on why IFDI is more responsive to economic growth in developed countries. This is a potential venue for future research.

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