

FDI OUTFLOWS OF ASIAN COUNTRIES TOWARDS EUROPEAN COUNTRIES: AN EMPIRICAL INVESTIGATION

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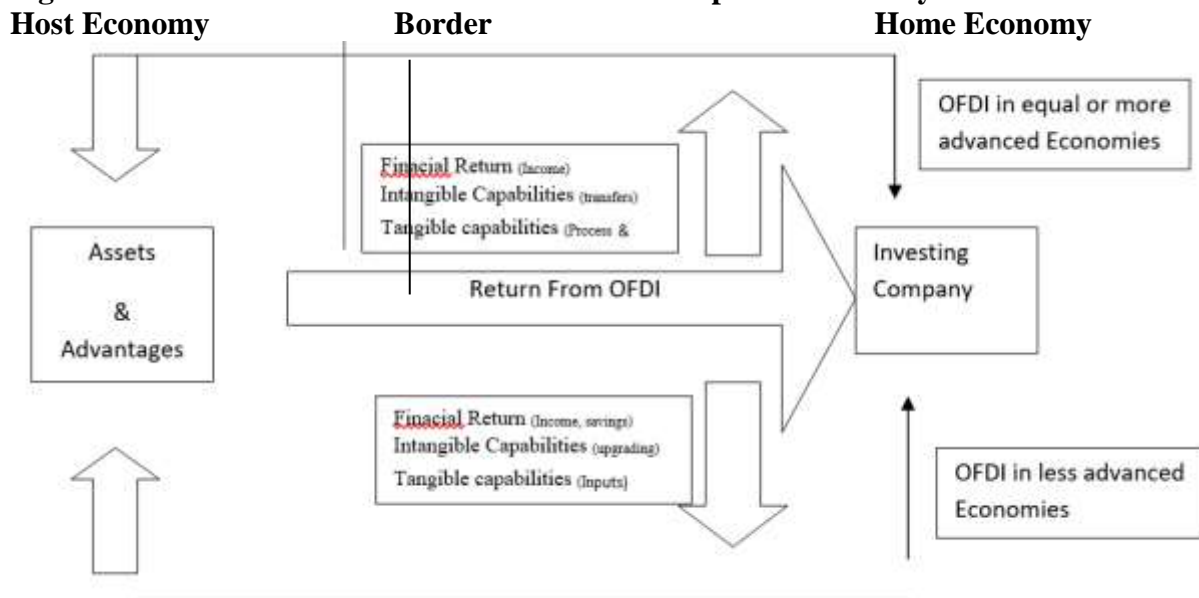
Abstract: Foreign Direct investment (FDI) is generally a long term foreign capital gesture, done with the idea of productive activity and managerial control or participation in the management of a foreign firm. Outwards FDI or FDI outflows are the total amount of direct investments by the present country to neighbor economies. It is very helpful in the economic growth and development of the host countries. Hence, the Researchers try to evaluate and contrasts the determinants of outward foreign direct investment (OFDI) of Asian Countries towards European countries. There are the few largest Asian economies in the world in terms of PPP and GDP per capita. On the basis of that, Top three countries viz China, Japan & Singapore have been taken. The Research Paper scrutinizes foreign direct investment outflows of these three countries for the years from 1994–2019. The study also predicts the trend and growth of FDI outflow in future years by the help of econometric models. Various determinants are analyzed with the help of Co-integration tests and VECM model. The results showed that there is long run co-integration among selected variable of European countries and OFDI from Asian Countries. It has been also seen positive and growing trends of OFDI of China, Japan & Singapore towards European markets in future years.

Keywords: Determinants; OFDI; VECM; Co-integration; Asian Economies

1. INTRODUCTION

Foreign Direct investment (FDI) is generally a long-term foreign capital gesture, done with the idea of productive activity and managerial control or participation in the management of a foreign firm. It is an important means to transfer the technology, Capital, and ideas from developed nations to emerging nations. Foreign Direct investment is trending way to internationalize among the firms and global economy (Zhan, 2020). FDI is an essential cause of emerging the nation's non-debt financial resources (Ansari, & Ranga, 2010). It is very helpful in the economic growth and development of the host countries (Bhattacharya & Sarkar, 2002). It is used as a tactic to get technical assistance and employment generation in a host country (Kueh et al.,2010; Kolstad and Wiig, 2012). Countries made two ways foreign direct investment: Inward Foreign direct Investment and Outwards foreign direct investment (Holmes et al., 2013) Inwards FDI or FDI inflows direct investment made by the neighbor countries in the present economy (Mukherjee, 2003). It includes reinvested earnings, repayments of loans, repatriation of capital or intra company's loans, whereas outwards FDI or FDI outflows are defined as the total amount of direct investments by the present country to neighbor economies (Hagemeyer-Witzleb, 2021). It also includes the net receipts from repatriation of capital, an intra company loans & their repayments, and reinvested earnings (Hagemeyer-Witzleb, 2021). There are various factors which are responsible for the ups and downs in the trend of outward foreign direct investment (OFDI). There are some liberalized policies, government role, and economic policies etc. which are responsible for the possible changes in the trends.

Figure 1: Contribution of OFDI to economic development: an analytical framework



(Source: Knoreich, J. 2017)

Asian countries have experienced numerous phases in its economies where pecuniary activity at the beginning was principally based on the agricultural sector. In fact, now days, Asian countries are competent to be a host country for foreign investment due to its government policies, good infrastructure, educated workforce, supportive and political stability. The outflow of foreign direct investment towards European Countries complements domestic investment consequently allowing the host country to experience financial growth and high employment rates. Despite of Asian countries are recipient of FDI, They also involved in venturing investment abroad since 1980s starting with a small amount of \$201 million. As per *World Investment Report 2021*, Outward FDI (OFDI) from Asia has increased by 7% to \$389 billion in 2021– again, the only constituency recording expansion in outflows. This accentuates the region’s eminence as an important investor for the developing region. The growth was driven by strong investment from Hong Kong (China) and Thailand and Singapore. China, the largest investor country in 2020, saw OFDI stabilizing at \$133 billion. (*UNCTAD, World Investment Report, 2021*).

2. LITERATURE REVIEW

2.1 Theoretical Framework

This section deals with the verification of literature related to the patterns and determinants of FDI, change in its trends due to structural transformation and change in approaches, economic policies and procedures in regards to FDI because of liberalization and other various reforms adopted by countries with passage of time. In early studies Foreign Direct Investment Outflows were strong forte for the developed economies. Hymer [1960] proposed that Foreign Direct investment occurred due to imperfect global market environment. Banga (2007) found three sets of variables to explain the outwards Foreign Direct Investments from developed countries to emerging countries. The main factors or variables are Domestic drivers, Trade Drivers and Capability Drivers. These drivers are mainly for the Asian countries. Blomkvist & Drogendijk (2016) revealed that Europe is less likely to receive Chinese direct investment as compare to other market region. The main reason for Chinese firms to invest in Europe is to gain access to markets and new capabilities. There is a large discrepancy among European countries regarding their ability to attract Chinese investments. The flow of Chinese OFDI in Europe is concentrated on a few large European countries, mainly Russia, UK, Luxembourg and Germany.

Chiappini (2014) and Cheung and Qian’s (2009) explored the relation among OFDI indicators of governance and OFDI of Japanese manufacturing industry. The study explained that host market

size, distance, inflation, natural resources, exchange rate, policy variables, government policies, corruption, Government effectiveness, societal rules are the drivers for OFDI decisions for Japanese manufacturing industry. The study revealed that Japanese OFDI to developed economies attracted majorly by Cheng and Ma (2007) found that GDP and cultural affinity in 90 host countries had a positive effect on Chinese external FDI while geographic distance had a negative effect from the year from 2003 to 2006. They also analyzed the composition of Chinese outflows from 2003-05. They have forecasted Chinese OFDI based on the past behavior. The forecast shows that China's gross FDI outflows will reach USD 50 billion in 2015, this shows upward trend in Chinese FDI outflows. Asian Countries like China, India, Malaysia, Thailand and Indonesia were showing highly significant relation with GDP and GDP per capita, domestic savings rate, GDP, foreign reserves, exports and inward FDI. The study suggested that if any emerging economy wanted to make foreign direct investment outflows, they must possessed high domestic savings rate, high exports, rapidly growing GDP, and extensive international reserves Buckley *et al.* (2007) ; Bano & Tabbada (2015).

3. Conceptual Framework

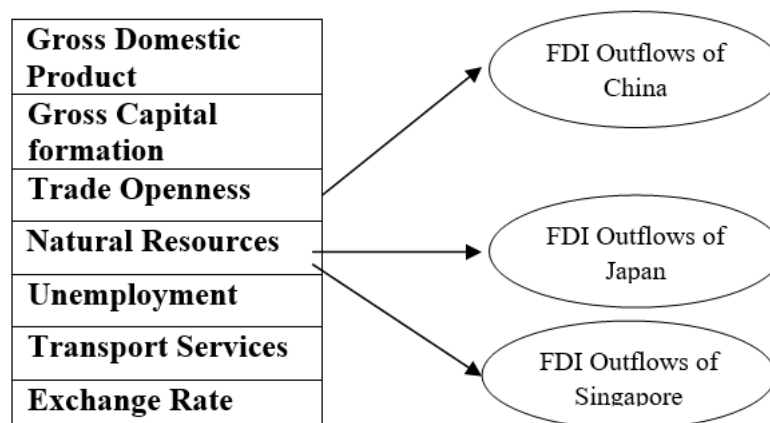
The Research Paper withdraws the outward FDI flows from emerged economies, which have occupied the uppermost status in Asia's economy specifically Chinese, Japanese and Singapore contexts. It is because of their utmost growth pattern in terms of purchasing power parity and GDP per capita. It describes an examination of FDI outflows from different sectors of these economies. The hypothesis will be developed and tested on the basis of the emerging trends of these flows, to explain the underlying drivers in light of China, Japan, and Singapore's liberalization. The Research Paper also looks at the results from ARIMA model on FDI outflows from these countries to evidence the FDI outflows to European countries in the coming years in the near future.

The Analysis answers the following questions, which are very vital in respect of making policies for industrialist, economists' practitioners, and other researchers:

- What are the foremost determinants which attract FDI outflows in the European Union by Asian Countries (China, Japan & Singapore)?
- What is the trend and growth pattern of FDI outflows towards European countries by Asian economies from 2001-2018?
- What would be the OFDI status in European countries in coming years from the selected Asian countries by using ARIMA model

Moreover, these are strategic and economic requirements given their position in the global economy. In addition, to come up with qualitative decency behind these flows, we will also imply some statistical and econometric methodology for validation.

Figure: 2 Research Frameworks



For determine the way of empirical investigation, the above-mentioned research framework is devised to tracing the determinants which attract FDI outflows in European Union by Asian Countries.

4. RESEARCH METHODOLOGY

The present research is based on econometric analysis. It involves cross sectional regression to find the empirical relation between outward FDI from Asian countries towards European nations. To predict whether data is having long term co-integration, Johanson Co-integration test and VECM model is used with restrictions. To predict trends it is used ARIMA model.

3.1 Objectives of the study

- To examine various determinants which attract FDI outflows in European Union by Asian Countries.
- To predict the Future FDI outflow towards European countries by Asian economies.
- To study the trends and growth of OFDI in European countries in respect of Asian countries.

3.2 Study Period, Variables and Data Collection

Present study is based upon secondary data, which has been pull together from various published resources like UNCTAD Reports, World Bank Indicators, People Bank of China, Bank of Japan, and Bank of Singapore. Yearly data from the period of 2001-2019 is used to predict the trends of FDI outflows of China, Singapore and Japan towards European Countries. In order to find determinants of FDI outflows towards European Union Yearly data from the period of 1994-2019 has been taken. Different variables used to achieve this objective are GDP, GCF, Trade Openness, Exchange Rate, Inflation, Unemployment, Transport Services, and Natural Resources.

2.3 Statistical Diagnosis

To find the determinants of OFDI we have taken few determinants and regressed them to find out the linear relation between OFDI and determinants. Than the Johansen Co-integration test has been applied and to verify the long-run causality VECM model is used. To fulfill the second objective futuristic trends of OFDI in China, Japan, and Singapore towards European countries ARIMA model is used. To study the trend and growth trend & growth analysis has been done.

5. DETERMINANTS OF FDI IN EUROPEAN UNION-28 FROM CHINA, JAPAN, & SINGAPORE

The rationale behind the countries to invest in overseas market is horizontal or market seeking. Another motive is to decrease the cost included in the market supply. To replace exports Horizontal FDI is done. If FDI is done at low-cost, this is often called “vertical” or “production cost-minimizing” In addition; there are two groups of theories on the determinants of FDI: one is micro-level determinants and the other is macro-level determinants. Macro-level determinants are factors that determine the level of FDI within and outside the country and micro-level determinants focus on the situations that motivate firms to produce abroad.

Table: 1. Determinants of OFDI Flows

Determinants	Determinants of Singapore's Outward FDI	Determinants of Chinese OFDI in European Union: An empirical study on location factors	Institutional determinants of Japanese OFDI in manufacturing Sectors	The determinants of Chinese outward foreign direct investment.	A comparison of the determinants of Chinese and U.S.A FDI outflows	China's Outwards FDI- Past & Future	Location Determinants of Japanese Foreign Direct Investment in China
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	Cassey Lee, & Chew Ging Lee (2016)	Lucian Ionuț Popa (2013)	Raphel Chiapiini (2014)	Peter J. Buckley, Liu, Voss, Zheng (2014)	Yan Dong, Kui Wai Li, Dayong Zhang (2011)	Leonard K. Cheng and Zihui Ma (2007)	Changhu i Zhou & Andrew Delios (2001)
		2004-10	2005-11	1984-2001	2005-2006	2003-2005	1980-1998
Airports					Positive	Positive	
Corruption						Positive	
culature proximity				Positive			Positive
Distance			Positive	Insignificant	Positive	Negative	Negative
Exchange Rate				Insignificant			
Exports		Positive		Positive			Positive
GDP	Positive		Positive	Positive	Positive	Positive	Insignificant
GDP Per Capita						no impact	
Govt Policies			Positive				
Imports		Positive		Negative			
Inflation			Positive	Positive			
Infrastructure		Positive					
Labour Cost	Negative	Negative					
Market Growth		Positive					
Natural Resources			Positive	Insignificant			
Oil					Positive	Positive	
Policy Liberalisation				Positive			
Political Risk			Positive				
Railways per Sqmt						Positive	Positive
Roads per Sqmt						Positive	Positive
Tax	Positive		Positive				
Telephone					Posit	Positi	

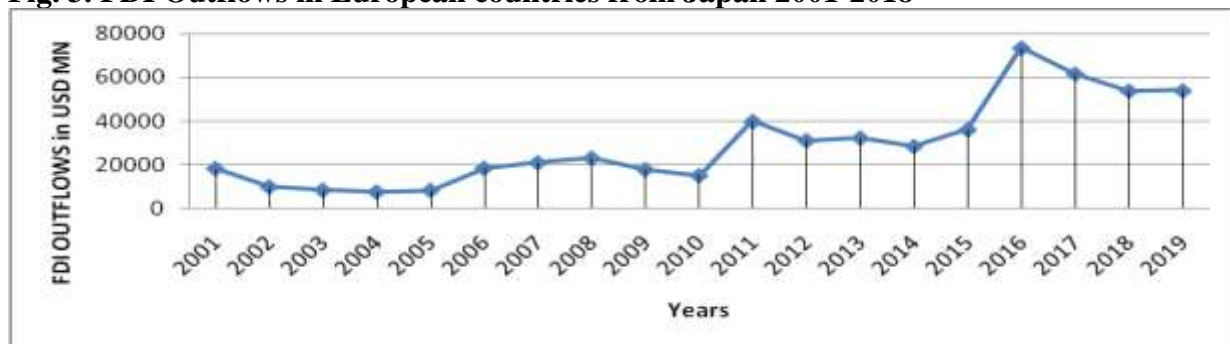
					ive	ve		
Trade Openness		Negative	Positive	Insignificant				
Unemployment		Negative						

From the vast literature we took out few determinants and made analysis to find the impact of these determinants on Outflows of FDI of China, Japan and Singapore. Due to ample of data we have taken EU-28 countries from European Economy. In the summary of the literature we have seen mixed results of determinants of OFDI. Various researchers have different opinions about a mixture of determinants for the selected economies. So we have selected some potential determinants of OFDI in the EU-28 economies.

6. TRENDS OF FDI OUTFLOWS IN SINGAPORE, CHINA & JAPAN TRENDS OF FDI OUTFLOWS IN SINGAPORE, CHINA & JAPAN

6.1 JAPAN: Japan took second rank in world largest economy (Source: UNCTAD Reports, 2018). In 1991, the investment in the UK was growing the fastest with Europe. The investments in Europe were mostly in the financial service sector and the real estate sector, which had become very important among non-manufacturing sectors. It is because the appreciating value of Japanese Yen hence increased its purchasing power (Source: Horaguchi, 1993). It together accounts for about 80% of FDI flows to Europe in manufacturing investment. The greatest growth happened in electrical appliances and electronics in the UK and the Netherlands (Source: Froot, 1991). After that there is small rise till 200, where FDI outflows towards European countries become USD 18280. After 2001 there is sudden decline due to the global crisis which are impacted the FDI inflows all over the world. In 2007 crisis are having limited impact but in 2008 and after there is significant and dampening impact on FDI flows. After this situations become normalized and FDI outflows from Japan regain the increasing track after 2010. In the year of 2016 there is highest FDI outflows from Japan to European countries are recorded. But there is sudden decline in 2017 and 2018 again. This is due to due to listless merger and acquisition (M&A) activity and the repatriation of accumulated earnings by United States multinational enterprises (MNEs), following tax reforms. In Fig 3 we have seen the clear figures of OFDI from Japan to European Countries.

Fig. 3. FDI Outflows in European countries from Japan 2001-2018



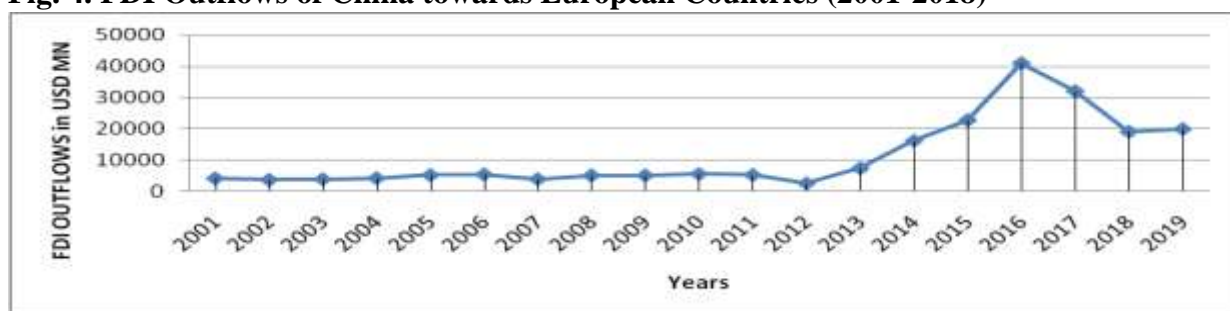
Source:

Bank of Japan, Ministry of Affairs, Japan

6.2 CHINA: China's FDI outflow started in the year 1979 after introducing its open door policy in 1958 and 1991. China imposed a large part of FDI in Asia from 1979 to 1993, which was 61% of the total outflows. During this period, it imposed only seven percent FDI outflows in Europe. (Source: Cai, 1999). FDI outflows by Chinese companies gradually increasing and in 2012 it had reached up to the record levels of US \$ 84 billion (UNCTAD, 2013). FDI flows to and from Europe have increased drastically over the last few decades. It has become crucial as trade in relation to Europe's global market operations. Concurrently, Chinese FDI outflow has also increased significantly and China has become a very good player while it has become an esteemed investor in countries like South Africa and Australia (Source: Evenett, 2009 & Drogendijk, 2016). There is very slow growth

of FDI outflows towards European countries. It s highest in the year 2016 i.e. 34 EUR billions but it has been dropped EUR 30 billion in 2017. There is 17% decrease as compared to outflows in 2016. But still it is the second highest FDI outflows recorded from the period from 2001-2017. In 2017 China takeovers CIC’s EUR 12.3 bn acquisition of China Jianyin Investment, Logikor and Wise Road Capital of NXP Semiconductors Standard Products business for EUR 2.4 bn and Wanda Group’s EUR 855 million acquisition of Nordic Cinema Group (Source: Huotari & Hanemann, 2018). Despite the apparent slowdown of Chinese investment activity, discussions about potential risks from Chinese FDI in 2017 continued. In 2018 there is continuity in decline like in 2017. In this year FDI outflows decreased about 40% from the last year (Eur 17.3 bn). This shows the lowest investment made by China since 2014. It is more than 50% decrease over the year 2016, when highest FDI inflows in Europe from China has recorded. China has obtained more than 350 European companies over the last 10 years. In Fig 4, there are various ups and down have seen in Chinese OFDI towards European countries

Fig. 4. FDI Outflows of China towards European Countries (2001-2018)

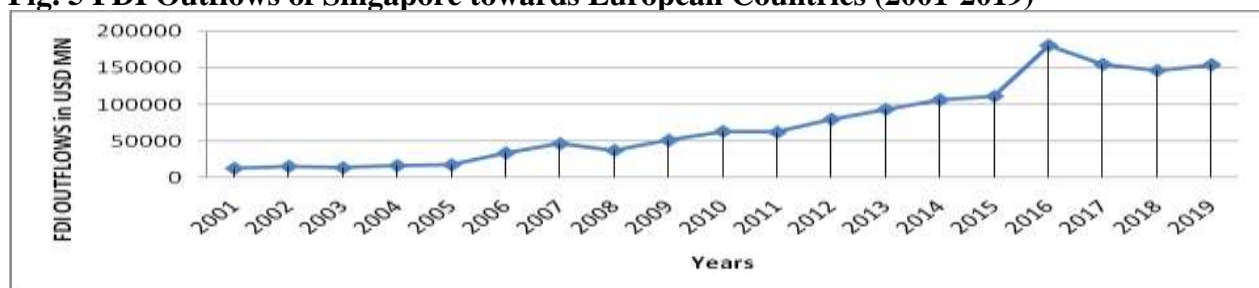


Source:

MOFCOM, UNCTAD Statistic Bulletins

5.3 SINGAPORE: The idea of getting into OFDI in Singapore was introduced in the mid-1980s and successively attained support from the state. The OFDI from Singapore to European countries increase consistently over the years from 2001 -2018. Singapore's FDI stock in Europe, which was \$ 13 billion in 2001, had grown to \$ 62 billion by the end of 2011. Singapore had 14 percent FDI stock in Europe at the end of 2011, higher than the 9.6 percent recorded at the end of 2001. The United Kingdom is Europe's most attractive destination. By the end of 2011, United Kingdom was accounting for 60 percent of Singapore's foreign direct investment. Apart from this, Netherlands and Switzerland were the other main European countries which remained the center of attraction for Singaporean investors. By the end of 2011, outside FDI outflows to Singapore and Switzerland were 11 percent and 5.4 percent, respectively. In 2016, European countries that attracted the most investment from Singapore include Luxembourg \$ 65.2 billion, UK \$ 44.1 billion and Netherlands \$ 23.8 billion. In 2017 Europe was on the second after Asia to get OFDI from Singapore.

Fig. 5 FDI Outflows of Singapore towards European Countries (2001-2019)



Sou

rcce: Singstat.gov.sg

In Fig 5, it has been also shown the OFDI from Singapore to Europe. It has been seen here also the OFDI is steadily increasing from 2001-2016 and declining afterwards but still the second highest OFDI. The decline was happened but Singapore economy tries to stable it due to Foreign Trade policies.

7. RESULTS OF STATISTICAL TOOL FOR DETERMINING VARIOUS SIGNIFICANT DETERMINANTS OF OFDI TOWARDS EUROPEAN COUNTRIES FROM SELECTED ASIAN COUNTRIES (CHINA, JAPAN & SINGAPORE)

6.1 Regression Results: Firstly we are using linear regression to know the dependence of GDP Gross capital formation, Trade Openness, Labor force, Population, Employment to population ratio, Exchange Rate, Inflation, Final consumption expenditure, Tariff rate, Distance, Natural resources, Unemployment, Transport services, and GDP Per Capita on OFDI individually.

Table: 2 Regression Results for Singapore, Japan and China

Countries Source	Singapore		China		Japan	
	T	Pr > t	T	Pr > t	T	Pr > t
Intercept	-4.17375	0.001907	-2.0913	0.062990927	18.98	0.00
GDP	3.330531	0.007611	1.703242	0.119346308	212.85	0.00
GCF	-1.60128	0.140397	3.494713	0.00577732	45.01	0.00
Trade Openness	-2.54187	0.029269	1.065678	0.311622975	- 4068.47	0.00
Natural Resources	-0.85027	0.415071	-1.29395	0.224768367	0.36	0.73
Unemployment	-0.41912	0.683992	2.602489	0.026378592	0.61	0.56
Transport Services	0.654325	0.527664	-2.74913	0.020508698	-0.29	0.78
Exchange Rate	2.597345	0.026612	-2.15038	0.057027603	-0.62	0.55
R²	0.98		0.95		1	
Adjusted R²	0.97		0.92		1	
F Statistic	0		0		0	
Pr > F	< 0.0001		< 0.0001		< 0.0001	
Durbin Watson	2.26		2.85		1.622	

Source: Author's Calculations in Eviews 10.

Table 5 exhibits the results of Regression analysis. The regression analysis is showing the relations between different variables of European Union and FDI outflows of China, Japan and Singapore. In the results the value of R square for all the three countries varies from 0.95 to 1, which shows that this much variation in dependent variable is due to these selected variables. This indicates strong predictive power of independent variables. Here the F statistics is also significant which means that the model is good to be fit. The value of Durbin Watson is also showing there is no autocorrelation detected among the variables. The independent variables GDP, Trade Openness and Exchange rate are showing significant values in case of Singapore and predict positive relation between Singapore FDI outflows and GDP and Exchange rate of European Union countries, whereas Trade openness and OFDI of Singapore are showing negative relation. In Case of China GCF, Transport Services, Unemployment and Exchange Rate all are showing significant results. There is positive relation between GCF, Transport Services and Chinese OFDI, and negative relation between Chinese OFDI and Exchange Rate & Unemployment. GDP GCF and Trade Openness are significant variables in case of Japan and showing positive relation between Japanese OFDI and variables (GDP, GCF) and negative relation between Japanese OFDI and European Trade openness. To know whether variables are having long run or short run association with outflows of FDI of Asian countries (China, Japan, and Singapore) we have to apply Co-integration Techniques.

6.2 Johanson Co-integration Test

This test allows more than one Co-integrating relationship. But before applying Johanson Co-integration test we have to check the stationary of the data. As we are using time series data we have to apply Augmented Dickey fuller test to know the stationary of the variables. The results of ADF test for the variables which are showing significant regression values. Before applying ADF test all

the variables are converted in log values and then ADF test has been applied. The Results shows that all the selected variables are stationary at first difference. This is the precondition of Johansen Co-integration Test. The result of Johansen Co-integration Test shows that there are three co-integrating vector. It means that there are three co-integrating equations that represent the relationship between dependent and independent variables. This relationship presents the next step i.e. Vector Error Correction Model (VECM).which gives the relationship in the form of an equation. As the study’s main objective is to determine the main determinants which causes inflows of FDI in the European Union by three Asian countries we have to put below mentioned restriction on VECM model. The restrictions are:

$$\begin{aligned} \beta (1,1)=1, \beta (1,2)=0, \beta (1,3)=0, \\ \beta (2,1)=1, \beta (2,3)=0, \beta (2,4)=0, \\ \beta (3,1)=1, \beta (3,2)=0, \beta (3,4)=0 \end{aligned}$$

With the help of these restrictions we obtained three alternative equilibrium relationships which are defining the determinants of outflows FDI from three Asian Countries (China, Japan, and Singapore). These equations have been obtained in order to investigate impact of all the variables on the FDI. (For imposing restrictions: Source: Harris and Sollis, 2006).

Table 3 Estimated Co-integration Relationships between OFDI of Asian Countries (Singapore, China and Japan) and European Union Countries.

Eq. No	Singapore		Japan		China	
	Independent Variable	Impact on FDI	Independent Variable	Impact on FDI	Independent Variable	Impact on FDI
1	LNGDP (Log Natural Gross Domestic Product)	5.443727*	LNGDP (Log Natural Gross Domestic Product)	2.154639*	LNGCF (Log Natural Gross Capital Formation)	2.361205*
		(20.9845)		(10.8004)		(7.3265)
2	LNER (Log Natural Exchange Rate)	95.45514*	LNGCF (Log Natural Gross Capital Formation)	2.253324*	LNUNP (Log Natural Unemployment)	-13.30265*
		(8.74979)		(9.30491)		(-6.945871)
3	LNT0 (Log Natural Trade Openness)	7.441234*	LNT0 (Log Natural Trade Openness)	5.426057*	LNTS (Log Natural Gross Transport Services)	-2.447991*
		(15.224)		(33.2678)		(-8.6052)

denotes significance at the level 1%. Figures in () are t values

VECM analysis shows that grouping of variables are found to be significant statistically for the three Asian countries. We can make these variables in an equation form to elaborate and identify how much impact has been measured on dependent variables due to independent variable. The equations are:

$$\text{For Singapore: OFDI} = 12.723 + 5.44\text{GDP} + 95.46\text{ExcRate} + 7.44\text{TO}$$

$$\text{For Japan: OFDI} = 11.37 + 2.15\text{GDP} + 2.25\text{GCF} + 5.42\text{TO}$$

$$\text{For China: OFDI} = 16.59 + 2.36\text{GCF} - 13.30\text{UNP} - 2.45\text{TS}$$

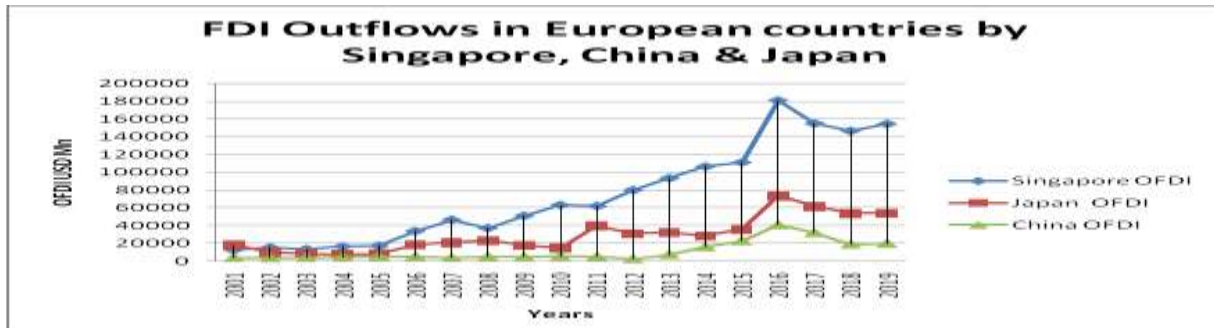
In these equations X coefficients (Elasticity) implies that the percentage vary in OFDI due to the variation in other variables. Let’s discuss these variables one by one.

8. RESULTS OF STATISTICAL TOOL FOR DETERMINING THE TRENDS & GROWTH AND FORECASTING OF OFDI TOWARDS EUROPEAN COUNTRIES FROM SELECTED ASIAN COUNTRIES (CHINA, JAPAN & SINGAPORE)

Europe receives the maximum share of FDI among all the developed countries. But in 2018 inflows in European countries are decreasing from USD 135 billion to USD 127 billion. As per the records it again go upward in 2019. The reason of this decrease in FDI inflows from 2016 was effects of US tax reform (Source: OECD, 2018). In Fig 7 the upward rate of FDI inflows in European countries has

been seen from the years 2001-2019. FDI inflows from all the three countries are going to increase till 2016 and in 2017 and 2018 a decrease in FDI inflows and again go upwards in 2019. There is a 91% increase in FDI inflows from Singapore in 2019 as compared to 2001. Similarly 66% change occurred in Japan and 78% increase in Case of China from the Year 2001-2019.

Fig. 7 Comparison of FDI Outflows in European Countries from Japan, Singapore & China



Sources: Bank of Japan, Singstat.gov.sg, MOFCOM & UNCTAD, Bank of China

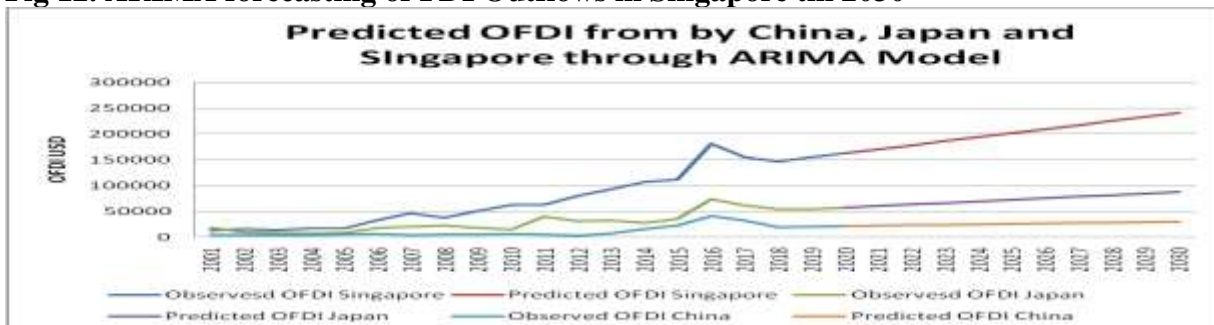
Forecasting of FDI flows in European countries by Singapore, China & Japan

In this section, FDI flows are predicted through ARIMA forecasting model for next twelve years i.e. up to 2030. ARIMA Forecasting Model is one of the popular models to predict the time series data for future years. In ARIMA forecasting Model past trend of the data is vital because the future predictions of ARIMA results are based on past behavior of the data. ARIMA has consist of (1) Auto Regressive (2) integrated (3) Moving Averages components.

ARIMA Forecasting Results of OFDI for China, Japan & Singapore

After calculating the stationary of the data ARIMA forecasting has done and the predicted value till 2030 are given in the Fig 12. The predictions suggest that there will be manifold increase over the next future years till 2030. The OFDI will increase to USD 241273 mn for Singapore, USD 87095 mn for Japan and USD 29582 mn for China in 2030. There is comparable increase among all three countries. Among all these three countries Singapore invested highest amount of OFDI in European countries after than Japan and China remains at number 3. It means the major investor of investment in European countries is Singapore & Japan.

Fig 12. ARIMA forecasting of FDI Outflows in Singapore till 2030



The graphical presentation of Predicted data has been given in. Fig.12 shows the graph of OFDI till 2030 for Singapore, Japan and China's. It has been noticed from the predicted data that outwards FDI of all the three countries are increasing but at decreasing rate as compare to previous years. The growth in 2030 is recorded as 95% increase from 2001. Similarly China (85%) is showing high growth rate as compare to Japan (79%) in 2030 from 2001.

In the above charts it has been shown that all the three countries of Asia are showing positive trend in future years at a declining rate as compare to previous years.

9. DISCUSSION ON RESULTS: The discussion on results could be categorized into two parts as this study has two major objectives.

8.1 Determinants of OFDI towards European Countries from Selected Asian Countries (China, Japan & Singapore)

The data calculated from 1994-2018 so these may not be in line with other earlier studies due to the time horizons of those studies are different. World has changed faster than one would have thought and uncertainties loom at large. In 2018 there is no other study which has given any suitable evidences to verify the present results. The results are only based on the secondary database received from the sources mentioned in the study

- **Gross Domestic Product (GDP):** The market size of an economy can be measured by GDP. It also denotes the size of the economy. The impact of GDP of any economy is likely to be positive to attract FDI. In many descriptive studies the effect of market size on OFDI is determined as positive. (Cassey Lee, & Chew Ging Lee 2016, Raphel Chiapiini, 2014, Peter J. Buckley, Xin Liu, Hinrich Voss, Ping Zheng 2014, Yan Dong, Kui Wai Li, Dayong Zhang 2011, Leonard K. Cheng and Zihui Ma 2007.) In our analysis also there is significant and positive impact of European Union GDP on OFDI of Singapore and Japan. But in case of China GDP does not make any impact on its FDI outflows. Similar results have been found in the study of Changhui Zhou & Andrew Delios (2001).
 - **Gross Capital Formation (GCF):** The association between Gross Capital Formation and OFDI of Japan and China is found to be significant and positive statistically in table no. 8. This coefficient is measured as 2.25 and 2.36 respectively for Japan and China. It indicates 1% change in GCF brings 2.25 and 2.36 percent change in OFDI of Japan and China respectively.
 - **Trade Openness:** The Determinant openness is found to be important variable as it is showing positive and significant results i.e. 7.44 and 5.42 for Singapore and Japan respectively. It means if an economy tries to open its economic policies to neighbor countries, the more it attracts FDI. As we know the FDI which is oriented by exports depends on these kinds of open policies. There are few studies which are supported our results (Raphel Chiapiini, 2014, Parashar, 2013). Some studies contradict with our results too and showing negative impact of Trade openness on OFDI from other countries (Lucian Ionuț Popa 2013, Khachoo & Khan 2012)
 - **Exchange Rate:** The exchange rate coefficient is estimated 95.45 indicate that one unit variation in exchange rate has been found to change FDI by 95.45%. This is also showing statistically significant and positive impact. Here the fact can be attributed that if the currency of source country is appreciated than comparing the currency of the host country will reduce the relative cost of source country currency capital and enable MNCs to invest more in that country than those with deferred currency. But Buckley, Liu, Voss, and Zheng (2014), Lee and Lee (2016) have found exchange rate is insignificant determinant of OFDI for China whereas Ali and Guo, 2005 and Hellina 2007 describe positive and significant results.
 - **Unemployment:** Unemployment and OFDI are showing negative and significant association. It means one unit variation occurred in Unemployment than there is 13% decrease in OFDI from China towards European Union. Lucian Ionuț Popa was also predicted the same results for China in 2013. The influence of unemployment implies that this is an indication of instability. It is not a measure of existing workforce.
 - **Transport Services:** Transport Services includes transportation of imports and raw materials. In the present study transportation opposing the expectations, has a negative sign whereas in the existing studies this fact is not supported. There is positive link between the OFDI and transport services. Changhui Zhou & Andrew Delios (2001) and Buckley, Liu, Voss, and Zheng (2014) supported the positive association between OFDI and this variable.
- a. **Trends, Growth and Forecasting Of OFDI towards European Countries From Selected Asian Countries (China, Japan & Singapore)**

It has been seen from the results that FDI outflows from all these three countries are having fluctuating trend from 2001 to 2019. The highest OFDI to UK is most amongst other European countries as UK has the natural advantage of having a large domestic market, cultural diversity and being an English speaking country and is a culturally diverse society with historical ties across the

globe. In addition, London is seen as the most attractive European city and is an attraction factor in itself. Besides these strong fundamental FDI drivers, the UK has also established a very attractive investment climate. In particular, the Government has pursued a strategy of building a strong knowledge and innovation capacity, which has been a driver for FDI into the food, pharmaceutical and ICT sectors. The UK has also taken recent steps to become more cost-competitive by lowering the corporate tax rate. UK remains the financial capital of Europe, home to the European headquarters of almost 60% of companies on the Fortune 500 ranking. Furthermore, Great Britain maintains a strong currency, despite its recent depreciation, and the country remains one of the most important European consumer markets. The United Kingdom was eighth out of 190 economies in the Doing Business 2020 ranking established by the World Bank, gaining a position compared to the previous year. (Source: <https://santandertrade.com/>).

CONCLUSION

The above analysis shows that there is much contribution in FDI inflows in European countries by Asian countries. There FDI inflows in European countries are due to some attractive features of European economies. These are Trade openness, political factors, market size, exchange rates of the currencies, labor force etc. In context to China, there are just initial stages for FDI outflows towards European countries. Chinese investments in Europe are impacted by a review mechanism in 2018-19. It includes many delayed transactions and blocked Chinese acquisition in Europe. Europe fell behind in the last two years but a catch-up was still played with China. In which many large European economies have abolished their screening regimes or are in the process of doing so. In a short span, the European Union has established an EU-wide investment screening framework, which may particularly affect other investors. Whereas Singapore and Japan are also the main investors of FDI outflows in European countries. The major countries for investment in Europe are the UK, France, and Germany. The major outflows are in financial services. In the case of Japan, the major investment is done in Chemical and pharmaceuticals, electric machinery, and transportation equipment under manufacturing sectors and Finance and insurance, Communication and wholesale & Retail under non-manufacturing sectors. Singapore's major parts of outflows are also in the Finance & Insurance sector towards Europe. It means the major investments in Europe in the financial services sectors. The above analysis also attempts to find determinants of OFDI towards European Countries. It is concluded that market size, exchange rate, and Trade Openness played important and main players by the host country. Our results are supported by various previous studies in case of factor GDP (Cassey Lee, & Chew Ging Lee (2016); Raphel Chiapiini (2014); Peter J. Buckley, Xin Liu, Hinrich Voss, Ping Zheng (2014); Yan Dong, Kui Wai Li, Dayong Zhang (2011)), But in case of exchange rate, our results are not inclined with previous literature. Buckley, Liu, Zheng in 2014 found insignificant impact of Exchange rate on FDI outflows. We have found mixed results in case of Trade openness in the previous literature but our study shows positive and significant impact. However, GCF and Unemployment in the host country are also important determinants. There are very few studies which talk about the trends of FDI outflows from Japan, Singapore and China to European countries but no such study found the Future trend of FDI outflows towards Europe from these economies.

Limitations of the Study: Due to the lack of availability of data we have concluded our results till 2019. But the changes occurred every day in the new world like we are facing a pandemic situations covid19, this will definitely impact on the FDI inflows of European countries from selected Asian countries Japan, Singapore and China. Beyond the direct impact, FDI can also have potentially important indirect effects on the local economy. As the pandemic situation hit at that time when FDI flows were at the second lowest level recorded since 2010 in the aftermath of the global financial crisis. Contributions to the recovery from FDI can go beyond financing. Multinational enterprises (MNEs) are generally larger, more research and development (R&D)-intensive, and more productive than purely domestic firms. As such, they are well-positioned to help governments deal with the

effects of the pandemic. As per the OECD Report 2019, in the protracted, epidemics may lead MNCs to move the geographic allocation of their overseas operations. Such transfers can have significant inculcation for economies' economic prospects as MNEs account for a bigger share of global value-added, trade, employment, and R&D. (OECD, 2018; Cadestin et al., 2018)

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