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Determinants of IFDI in Central Asian Countries: Econometric Analysis

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ABSTRACT: *In Central Asian countries the macroeconomic situation characterized by low level of public investment. Peculiarities of transition economies led to greater complexity of the investment processes and strengthened the factors opposing to IFDI. It is therefore important to examine the factors that attract IFDI, while highlighting their positive and negative effects, to determine the prospects.Current research defines the major determinants of IFDI in Central Asian countries (in case of Kyrgyzstan, Kazakhstan, Uzbekistan and Tajikistan)by revising the literature review and analyzing the related data. Panel data technique that covers time period 1990-2015 has been organized, fixed effects model chosen as a research method. The research found that inconsistent legislative environment, high level of government controlintervention and widespread corruption in case countries are the major obstacles to IFDI; also the most significant factors that influence IFDI are macroeconomic stability, natural resources and IFDI policy that promote trade openness. In most selected countries it showed negative correlation between the IFDI and IFDI policy and macroeconomic stability. Overall the most of IFDI types in Central Asia are resource-seeking based on significance of natural resources; and efficiency-seeking based on the importance of macroeconomic stability and IFDI policy.*

KEYWORDS *-transition economy,natural resources, investment, factors, business climate*

I. INTRODUCTION

(Azam, 2010)conducted study by analyzing the economic determinants of IFDI in Armenia, Kyrgyzstan and Turkmenistan by covering the data derived from World Bank (WB) for period 1991-2009 [1]. Author found market size and official development assistance (ODA) have positive effects and negative effect of inflation on IFDI for the selected time frequency. But some determinants as official development assistance and inflation are insignificant in Armenia and Kyrgyz Republic correspondingly.

There are few studies related to IFDI determinants in Central Asia. (Lee, Baimukhamedova, & Akhmetova, 2010)conducted research by analyzing IFDI, exchange rate and their roles to the economic growth in Kazakhstan. Authors employed several variables to find the effect of those variables to the economic growth. They found that exchange rate and FDI inflow don't have direct impact on economic growth. Nevertheless employment ratio, industrial production, fixed capital investment do have significant effect. Study concluded that IFDI by MNE does not influence on GDP growth in Kazakhstan [2].

(Tøndel, 2001) conducted research by using panel data technique with fixed effect model which included 25 countries named as Common Wealth of Independent State (CIS) ten Countries and Central and Eastern Europe (CEE) 10 countries [3]. Study surveyed samples based on their economy structure which is so called transition economy. EBRD defined that "Transition is the process through which open market oriented economies are established". All case countries mentioned above have been changing their economies from planned economy to market economy. The study employed variable as: IFDI, IFDI per capita, GDP, GDP growth, GDP/capita and TRI (transition indicator). The author found that mostly IFDI in CIS countries are market-seeking and resource-seeking which stands for the natural resources; and market size is significantly important in attracting IFDI. However in CEE countries IFDI considered as efficiency-seeking or vertical investment. In CEE countries transition indicator determinant has been found primary motive to invest in this region. After the collapse of Soviet Union the many countries were trying to get recovered from the interrupted economic supply chain.

One of the sources to improve economic condition is the foreign investment flow, (Wunnava, 2004)analyzed nine receiving countries and fifteen EU flowing investment countries. Author`s sample includes nine countries with transition economies. The study employed linear regression model with cross-section data [4]. This study also proves that most important factor is trade openness in terms of import. Because selected countries need to improve trade policy in order to attract the investors, to strengthen their economic condition. Next most significant factor was the host economy size as GDP. In general GDP is the best factor to identify the host economy growth and purchasing power parity. Additionally labor cost and country risk found statistically crucial. Because the investors want to cut the costs on production by manufacturing in host economy where labor cost is lower than in home country. The study implements that nine economies in transition have to stabilize the economic and political atmosphere, lack of confidence of investors about the host economy's macroeconomic fluctuation, political battles avoid investment. After the collapse of USSR many countries lack of legislative environment which created unstable economy and investment climate. Ex-soviet union countries were lack of specialists who could explain and propose effective rules and economic system. No doubt that foreign investment requires both legislative and economic stability in host country (Andrzjei Baniak, Jacek Cukrowski, & Herczynki, 2002). Authors had researched two former Soviet Union countries Georgia and Kyrgyzstan, mainly the study had aimed to identify the determinants of foreign investment flow by taking into account legislative environment. Research results conclude that the inconsistency of exchange rate, high level of doubt about risk may lead to the decrease of investment flow to the host country. Additionally the uncertain or unstable legal environment make foreign investors not to invest in host country, they need guarantee for their manufacturing plants. Unstable exchange rate may lead to the high marginal costs [5]. In summarizing above mentioned statements economic steadiness motivate FDI inflow to the host country, or contrariwise unstable economy diminishes the inward foreign investment. By concluding IFDI in transition economy strictly correlated with legal and macroeconomic steadiness, on the other hand the vital topic is to attract appropriate investors who tend to have long-term investment strategy rather than high risk investment with cause of negative impact on country.

(Kudina & Jakubiak, 2009) had surveyed 120 enterprises which operates in four CIS countries (Kyrgyzstan, Georgia, Ukraine and Moldova), by using ordered logistic analysis by categorical data. Study aimed to find the motives of the foreign investors [6]. Primary motives of the mostly investors in selected CIS countries were market-seeking dominant motive, low-cost factors of production and educated labor force. The empirical result shows that almost 90% of the surveyed foreign enterprises have problems with legal system and corruption level. Major problems were addressed to the correlation among the scope of the company in establishing clear property rights.

Many scholars argue that IFDI flow is not identical in all countries. It depends on several economic structures. Like transition, planned and market economy. Sometimes it relies on host country's legal and environment sphere(Mateev, 2008). This study focused on IFDI flows between twelve EU source countries and eight transition economy in Central and Southeastern Europe with time frequency that covers 2001-2006 [7]. Surveyed countries with transition economy were receiving different amount of IFDI. The author analyzed all countries' specific conditions and underlined different political and institutional factors. Author found that both gravity factors (distance, GDP and population) and non-gravity factors (labor cost, risk and corruption) are significantly affecting IFDI. In addition study underlined trade and infrastructure did not have influence on IFDI inflow in sampled countries. As in transition economies privatization process considered to be crucial factor but current research did not find any significance of this factor to FDI inflow.

Since 1991 Central Asian countries have been aiming at transformation of their economies from centrally planned to a market economy and implementing their programs and economic reforms respectively. After the collapse of the Soviet Union in 1991, real GDP has fallen sharply in all countries during the period of 1990-1995. GDP growth fell to -1.55 percent in Kyrgyzstan, -1.26 percent in Kazakhstan, -2.13 percent in Tajikistan and -0.52 percent in Uzbekistan (see Table 1). By the mid-90s sharp drop in industrial production and destructive inflation rate were finally brought under control.

Figures 1-4 show the share of IFDI by country and by industry in four countries. IFDI by home country are almost similar in all four Central Asian countries.Main investors are China, Russia and European Union, which are key economic partners of these countries too, but at the same time shares of investor countries in Central Asian countries varies from country to country. Russia still plays a great role in economies and IFDI flows in Central Asian countries as it has tight connections from the Soviet Union regime, and it had the largest share of IFDI in 2015. It has the highest share in Uzbekistan, which equal to 37%, second in Tajikistan-18% and 4% in both Kyrgyzstan and Kazakhstan. China is the another key investor in Kyrgyzstan with 24%, and Tajikistan with 21% of country`s total IFDI, however, it`s investment share was only 8% in Kazakhstan and 4% in Uzbekistan in 2015. However, China is getting more involved in Central Asian economy and IFDI; for example

in 2008 its shares in Kazakhstan`s IFDI flows were 3% and in Kyrgyzstan as well, but in 2015 they reached 8% and 24% respectively, while China`s investment in Tajikistan`s IFDI reached 21% in 2015 from 4% in 2011. European Union countries has presence mostly in Kazakhstan with the highest IFDI share, especially Netherlands (29%, the largest investor), United Kingdom and France; while among them only United Kingdom is a key investor in other three countries: Tajikistan-16%, Kyrgyzstan- 12% and in Uzbekistan only 3%. Among non-CIS countries Canada has been investing in Kyrgyzstan constantly, and its the second largest investor after China with its 22% share in total IFDI. The one of the largest investments of Canada was promoted by Centerra Gold Mining Company which has been operating in gold mining industry since 1995 through Kumtor Gold Company and has been playing inevitable role in country`s GDP.Other key investors are from United Arab Emirates with 17% share in Tajikistan, Korea with 21% in Uzbekistan and 5% in Kyrgyzstan, Switzerland-12% in Kazakhstan, Iran-7% and Turkey 5% in Tajikistan, USA-9% in Uzbekistan and 7% in Kazakhstan, and Germany-6% in Kyrgyzstan. Moreover, there are offshore jurisdictions like Cyprus, Seychelles, Liberia, Persian Gulf countries, and other ASEAN member countries including Singapore and Japan as well, who invest in Central Asian countries,- but still they are not key investors in the region.

Statistical data for IFDI by sector shows that there are two key streams for investment: (1) stream, which is almost half or even more in total IFDI in selected countries, except Tajikistan, is related to natural resources. Sectors of oil and gas extraction, geological explorations, mining, processing of oil and gas, chemical industry, metallurgy, metal and non-metal minerals, manufacturing, etc. Kyrgyzstan has a lot of gold deposits, but not all of them are being operated. The biggest gold mine operator is Canadian Centerra Gold Corporation. Kazakhstan and Uzbekistan are rich for oil and gas and development of this sector, including construction of pipelines, is a very big project, and at the same time has a high impact on fluctuation of IFDI. For example, last years China is actively investing in oil and pipeline in Kazakhstan; during construction of pipelines IFDI increased and fall in 2010 after completion of the pipeline construction. (2) another stream is related to services, which includes sectors in real estate, finance, communications, construction and others. These sectors have more share of IFDI in Kyrgyzstan and Tajikistan, which don`t own deposits of oil and gas. This stream has been increasing over time. According to statistical data from National Bank of Kazakhstan the share of communications, finance, construction and trade reached 29% in 2015 from 8% in 2008. Two countries, Uzbekistan and Kazakhstan, have also other IFDI sectors like machine building, textile and food manufacturing. While Tajikistan receives IFDI for electricity production and distribution. Although all selected countries have large agriculture industry, this sector does not receive any IFDI.

There are both direct and indirect effects of investment projects on economic growth of the country. Indirect impacts might be on real exchange rate, prices of goods, wages and salaries of population, etc. But in this part only direct impacts will be discussed. Direct macroeconomic effects of IFDI might be in contribution to exports, tax revenues, employment rate, production output of the country. Data on foreign enterprises are available for Kazakhstan, Kyrgyzstan and Tajikistan, no data available for Uzbekistan. Table 2 shows the contribution of foreign investors to gross and industrial outputs, export and employment of these economies. For Tajikistan there is only one indicator, according to which foreign enterprises contribute only 4% to the total gross output of the country. In Kazakhstan foreigner produce 61% of industrial output, while in Kyrgyzstan this indicator equals to 32.6%. So from the information above we can see that output percentages have positive correlation with IFDI stock volumes of these countries. IFDI does not have a direct impact on employment both in Kyrgyzstan (2.6%) and Kazakhstan (5.4%), because as discussed above IFDI to these countries goes mostly to capital-intensive and knowledge-intensive industries like chemical industry, processing of oil and gas, mining, metallurgy, communications, etc. Financial Times FDI Intelligence database shows the average cost of creation a new work position. In Kazakhstan it requires USD586000/working place and USD363000 in Kyrgyzstan. Tax amounts contributed to the host countries by IFDI recipient enterprises are not complete, but even from the little information on it from Kazakhstan and Kyrgyzstan it can be concluded that tax payments to the governments are of great role in the economies of these two countries. The main taxpayers in Kazakhstan are for sure the biggest IFDI receivers in oil and gas industry. Join ventures produced 83% of this sector; and paid tax in the amount of USD22.9 billion, which equals to 11.2% of GDP and 23% of government budget in 2016 [8]. In Kyrgyzstan the main taxpayer is Kumtor Gold Company, which paid tax in the amount of USD126,524,909 in 2017, which is 9.7% share of total GDP and 21.1% share of total industrial output of the country [9].

In all countries implementation of IFDI projects played an important role in GDP growth, job creation and growth of many industries. The impact of IFDI on economic growth of Kazakhstan, to improve the trade and current account balances, and many other macroeconomic indicators were positive. Moreover, as a result of increased demand caused by the large investments in the oil sector and the growth of consumption, an increase in the following sectors, including construction, trade, business, transport and financial services(Kazakhstan,

2012). The oil boom also affects the rest of the economy through its effect on macroeconomic performance. Growth in revenues due to increased production of oil leads to increased consumption and investment. Large growth in government consumption, for example, is likely to lead to an increase in the services sector, as the government will spend more on education, health and public administration. In Uzbekistan, the implementation of IFDI projects contributed to the restructuring of existing and creation of new enterprises in several sectors, including textile, tobacco, machine-building (Daewoo motors), gold mining (Newmont Mining Corporation), and other industries.

For model analysis of IFDI determinants in current research panel data technique has been applied. There are advantages of panel data technique over time-series and cross section studies. Those benefits by H.Baltagiare following:

1) Controlling heterogeneity: Panel data assumes that countries, states, and individuals are heterogeneous. However the time-series and cross-section methods are not controlling this heterogeneity run the risk of obtaining results.
2) More informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency: In time-series studies are plagued with more multicollinearity.
3) Dynamics of adjustment: Cross-sectional distributions that look relatively stable hide a multitude of changes.
4) Panel data are better able to identify and measure effects that are simply not detectable in pure cross-section or pure time-series data.
5) Panel data gathered on countries, individuals and households maybe more accurately measured than similar variables measured at the macro level. Biases resulting from aggregation over countries and households may be reduced or removed.
6) Panel data models allow to construct and test more complicated behavioral models than purely cross-section and time-series data [10].

Panel data may have group effects, time effects, or both. These effects are either fixed effect or random effect. A fixed effect model assumes differences in intercepts across groups or time periods, whereas a random effect model explores differences in error variances. The Hausman specification test compares the fixed versus random effects under the null hypothesis that the individual effects are uncorrelated with the other regressors in the model [11]. If correlated (H0 is rejected), a random effect model produces biased estimators, violating one of the Gauss-Markov assumptions; so a fixed effect model is preferred.

Estimation Equation given as follow:

$$100 * \frac{FDI}{GDP} = \alpha + \beta_1(GDP_{it}) + \beta_2(ODA_{it}) + \beta_3(FDIPOL)_{it} + \beta_4(INLFATION_{it})$$

$$+\beta_5(INFRAC_{it}) + \beta_6(NATRES_{it}) + \varepsilon$$

$i =$ stands for country

$t =$ means observed time period

$\varepsilon = stocasticerrorterm$

The analysis covers 4 countries in Central Asia (Kyrgyzstan, Kazakhstan, Uzbekistan and Tajikistan) over the period 1990-2015. As it has been retrieved from (Asiedu, 2005) in literature review the dependent variable is the ratio of net FDI inflow to GDP[12]. The data has been obtained from World Bank Database, *World Development Indicators.* The numbers of variables included in this research has been identified according to the availability of data for each country. Eviews software has been used for analysis. Above mentioned software is specially designed for econometric analysis.

The research includes six variables which have been mentioned in Table 3. The selection of variables based on literature review of current research, and measurements has been retrieved from (Asiedu, 2005). Author has conducted study by including several variables categorizing them by policy, institutional and political risk variables[12]. However current research retrieved only the variables excluding categorizing and some other risk due to the availability of data.

As present topics cover the determinants of IFDI, IFDI has been taken as dependent variable. The market size taken as GDP according to the literature review provided above. Also current study expects the sign of GDP variable as positive. As it is mentioned by (Azam, 2010) ODA plays vital role by indicating the strong

and tight cooperation of host country with international donors, by considering it ODA has been included and has been measured in million $U.S. Therefore expected sign of ODA is positive. IFDI policy has been measure considering the openness to IFDI which has been mentioned by (Asiedu, 2005) and the measurement of this variable is trade as a percentage to GDP. Same as previous variable the positive sign expected. Many scholars who have been cited by current research (Asiedu, 2005; Azam, 2010; Ranjan & Agrawal, 2011) use inflation rate to indicate the macroeconomic stability[12][1][13]. The expectation from this variable is negative. Infrastructure variable has been added by considering as an important factor which has been mentioned by (Asiedu, 2005; James P.Walsh, 2010; Sinha, 2007); measured by the telephone line per 100 people. Same as main variables of current study the positive sign is expected. As one of the traditional determinants is natural resource has also been included in this research. As it was expressed by (Dunning, 1973)IFDI which tend to invest to acquire the resources named as resource seeking IFDI[14]. In literature review many scholars (Armstrong; Asiedu; Nnadozie; Wunnava) included natural resources as determinants[4][12][15][16].

Additionally according to the (Dunning, 1973) classification of IFDI, present research added types of IFDI in order to know which types of IFDI are mostly present in selected countries[14].

The equations 1, 2, 3 and 4 estimated regression lines for Kyrgyzstan, Kazakhstan, Uzbekistan and Tajikistan respectively given in Table 4. The empirical results of the research have been shown in Table 5.

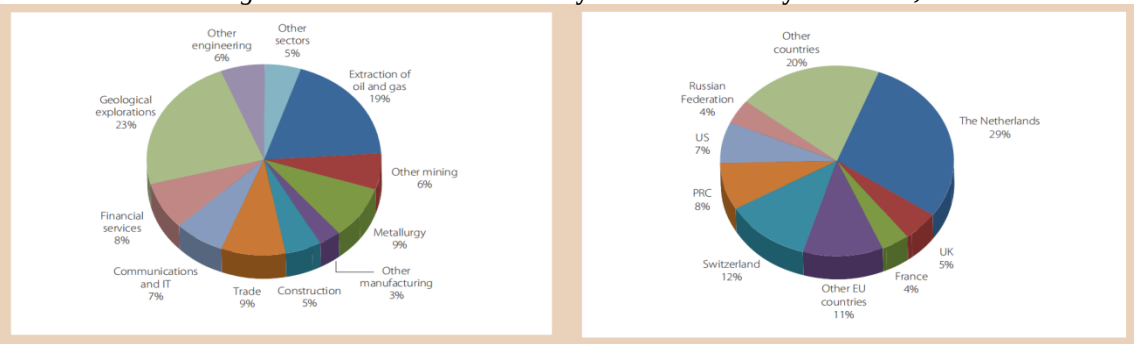
Based on the results shown in the Table 5, it is possible to interpret that infrastructure of Kyrgyzstan is significant with its negative sign. Perhaps investors would like to invest where the infrastructure has already settled down. Here it is possible to conclude that inefficient infrastructure can cause negative effect to investment whereas the efficient and the well-developed infrastructure may motivate investors. Current findings regarding to the infrastructure is same with the findings of who(James P.Walsh, 2010) argue that infrastructure is significant with its negative sign[17]. One of the important traditional determinants of IFDI natural resources in case of Kyrgyzstan has highly significance with its negative sign coefficient -5.38. No doubt that availability of natural resources will motivate investment to host country(Tøndel, 2001)[3]. Likewise the natural resources, IFDI policy which has been measured by share of trade in GDP has high significance with its negative sign coefficient -2.42, for investors perhaps it is important that Kyrgyzstan need to have open IFDI policy that stimulate the trade so that investors can export their outputs to other markets easily. This result is consistent with the (Ranjan & Agrawal; James P.Walsh; Lim;Shaukat Ali) who found statistically significant IFDI policy in many countries[13][17][18][19]. Results of insignificance of macroeconomic stability and ODA are reliable as (Azam; Wunnava; Claudio Felisoni de) researched[1][4][20]. (Azam, 2010) also found that inflation rate which is indicator of economy health and ODA are insignificant for Kyrgyzstan[1]. Concerning to the insignificance of GDP, (Shahmoradi et al., 2010) also argue that there is no correlation between GDP and IFDI[21]. Therefore somehow analysis results are can be said as consistent with other scholars' researches.In case of Kazakhstan according to the empirical results GDP found as significant with its negative sign. As GDP is the best factor of country development perhaps investors do care about current factor. (Tøndel; Wunnava; Grosse & Trevino) also found the GDP as significant factor in attracting IFDI[3][4][22]. Taking into consideration that Kazakhstan has the highest economic growth among selected countries, as well as last decade current country attracted highest IFDI amount. In this case it is possible to predict that GDP is significant factor in attracting IFDI. Another significant variable found as macroeconomic stability as it was predicted with its negative sign. No doubt that inflation is the indicator of health of economy, therefore there is negative correlation. This result is the same as founding of(Andrzjei Baniak et al.; Azam). One of the traditional determinants natural resources found as significant with its negative coefficient -0.15, Kazakhstan has the large reserves of oil and gas. Possibly investors do care about the availability of natural resources as a primary motive. However the minus sign of the variable is not consistent with the other scholars findings however with the very low significance this factor may not be important in attracting FDI. Infrastructure, ODA and IFDI policy found as statistically insignificant and their sign found as positive. Consequently these findings are constant with the researches of (James P.Walsh; Wunnava). In case of Uzbekistan the macroeconomic stability found as significant with negative sign. So far it is consistent with above mentioned scholars (Andrzjei Baniak et al.; Azam). Maybe the investors do pay attention on host country macroeconomic steadiness. No doubt that inflation is one of the important factorsin determining the FDI. Natural resources variable has been found as significant factor with positive sign of coefficient 0.014. Uzbekistan exports gas most of its neighbors which attracts IFDI. Maybe the investors are willing to invest in this country because of natural resources availability. Recent research finding regarding to the natural resources identical with the (Tøndel, 2001). Contradicting with its negative sign of coefficient -0.001 IFDI policy has also indicated by our analysis as significant. It is obvious that trade is the important factor in attracting the IFDI. Because investors would like to export and import the goods consequently FDI would be motivated by open IFDI policies which make the business easier. Many scholars (Armstrong; Asiedu; Grosse & Trevino; Lim; Shaukat Ali) among them (Sinha)argue that one of the main motivator of IFDI essentially would be the trade openness policies[23]. However the analysis shows that negative sign which may indicate that

maybe the IFDI policies are not well open to trade easily. Like in Kazakhstan case of infrastructure and ODA in Uzbekistan case found as statistically insignificant since their t-values are 1.21 and 0.80 respectively with positive sign. Also in literature review of recent research it has been cited (Azam; Mateev), authors also found above mentioned variables as insignificant.Last analysis output reflects about the Tajikistan. Based on the analysis output current research found GDP as significant factor with its t-stat value -0.20 and -1.04 coefficient values.(Grosse & Trevino, 1996) also found GDP is significant with tis minus sign. Next macroeconomic stability found as significant with negative sign and t-value is -1.21. Of course macroeconomic uncertainty will make the investors worry about future potential of the host market. Consequently the inconsistent of macroeconomic stability will demotivate the investors. This result is consistent with (Asiedu; Azam; Wunnava) who indicated that there is negative correlation between IFDI and inflation. IFDI policy variable which has measured in trade openness determined as significant with -0.69 t-statistics value. This means that Tajikistan doesn't have enough open trade policies which can motivate the capital inflow. Also (Grosse & Trevino; Shaukat Ali) found IFDI policy as statistically significant. Tajikistan ranks last in economic development and in attracting FDI among selected countries. With same negative sign the availability of natural resources has been found as significant with -0.84 t-statistics value. In general natural resource as a traditional determinant of IFDI has positive impact however in Tajikistan case it contradicts to the results of (Asiedu; Tøndel). Interestingly in Tajikistan case ODA and infrastructure have been determined as insignificant with its positive coefficient sign, perhaps investors don't take into consideration this factor as an important determinant in investing in Tajikistan. Therefore findings concerned with the ODA and infrastructure are consistent with the findings of (Azam; James P.Walsh; Mateev)

Overall by concluding present chapter it can be stated that most significant factors are macroeconomic stability, natural resources and IFDI policy found almost in all selected countries. It is possible to say that there is need to improve trade openness policies which can motivate the investment. And macroeconomic stability also one of the main factors that influence the investors decision making because investors worry about the certainty of macroeconomic growth in order to make sure that return on investment would be reliable. Natural resource without any discussions is one of vital factors which motivate the FDI inflow to host country. Central Asia with its huge potential of natural resources can attract the investors.

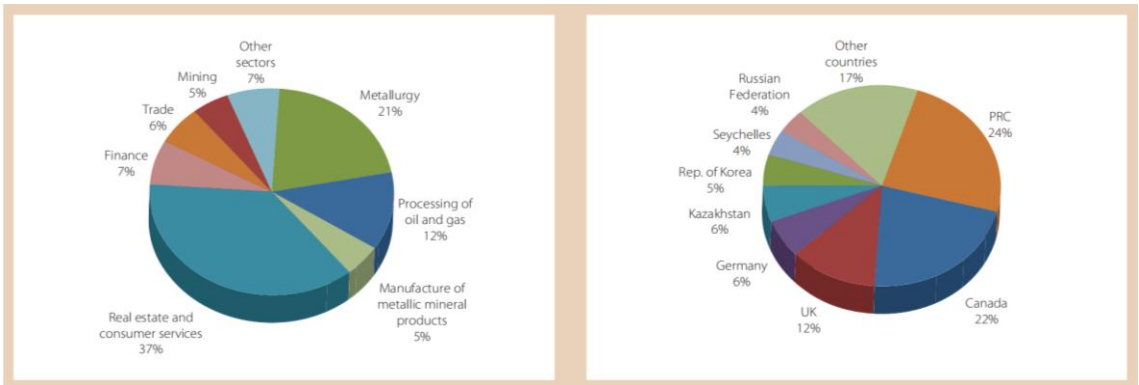
II. FIGURES AND TABLES

Figure 1: **IFDI to Kazakhstan by Industries and by Countries, 2015**



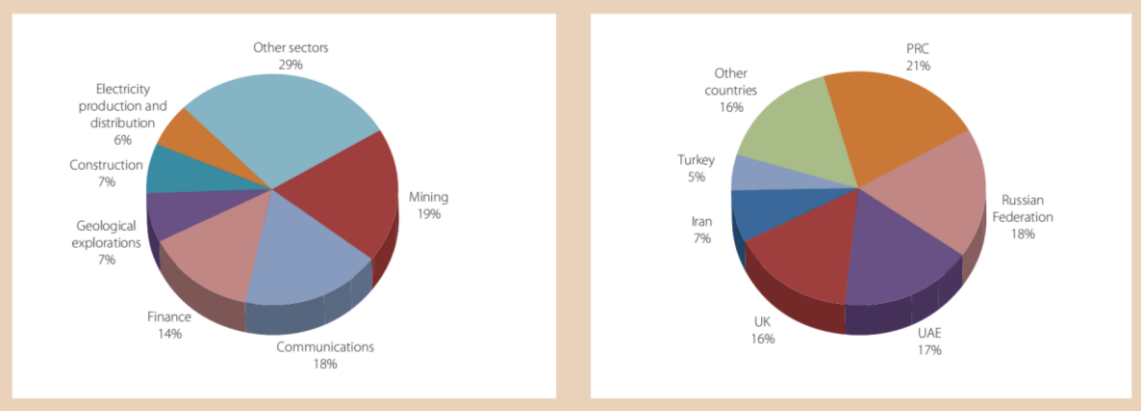
Source: National Bank of Kazakhstan

Figure 2: **IFDI to Kyrgyzstan by Industries and by Countries, 2015**



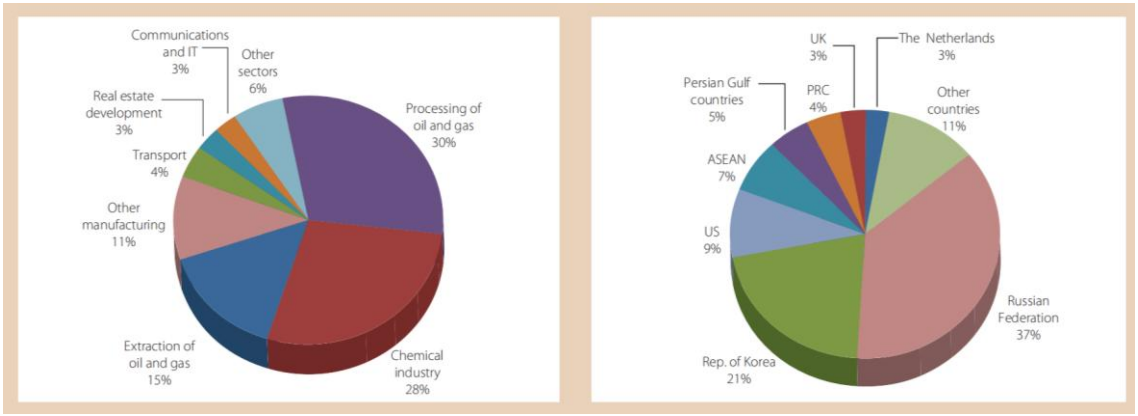
Source: National Statistic Committee of Kyrgyzstan

Figure 3: **IFDI to Tajikistan by Industries and by Countries, 2015**



Source: Statistical Agency of Tajikistan

Figure 4: **IFDI to Uzbekistan by Industries and by Countries, 2015**



Source: Fianacial Times fDi Intelligence

*Table 1:***GDP Growths in Central Asia**

Country	1990-1995	1996-2000	2000-2005	2006	2007	2008	2009	2010
Kyrgyzstan	-1.55%	3.47%	4.96%	-0.18%	3.10%	8.54%	8.40%	2.89%
Kazakhstan	-1.26%	2.56%	10.38%	10.7%	8.9%	3.3%	1.2%	7.3%
Uzbekistan	-0.52%	3.86%	5.42%	7.30%	9.50%	9.00%	8.10%	8.50%
Tajikistan	-2.13%	0.46%	10.12%	6.70%	7%	7.80%	7.90%	3.80%

Source: World Development Indicators (WB Database)

Table 2: **Role of Foreign Enterprises, 2016, (%)**

	Kazakhstan	Kyrgyzstan	Tajikistan
Gross output	n/a	n/a	4.0
Industrial output	61.0	32.6	n/a
Exports	66.2	67.9	n/a
Employment	5.4	2.6	n/a

Source: Transition Report 2010 (EBRD)

*Table 3:***Explanatory Variables**

Variables		Measurement	Type of FDI
1	IFDI	100*IFDI/GDP	
2	Market Size	log(GDP)	Market Seeking
3	ODA	log(ODA)	Efficiency
4	IFDI Policy	Openness to IFDI	Efficiency Seeking
5	Macroeconomic Stability	Inflation Rate	Efficiency Seeking
6	Infrastructure	log(Telephone lines (per 100 people))	Efficiency Seeking
7	Natural Resources	(Total natural resources rents (% of GDP)	Resource Seeking

Source: Authoring

Table 4: **Estimated RegressionLines**

ifdi=-203.510+1.9684*log(gdp)+0.0037*inflation-5.3861*log(infrastructure)+9.3285*log(oda)-0.0211*fdipol-2.4232*natural_res **(1)**
ifdi=75.9952-5.8536*log(gdp)-0.0030*inflation+23.7756*log(infrastructure)+0.3363*log(oda)+0.0904*fdipol-0.1501*natural_res **(2)**
ifdi=-27.8618+1.0889*log(gdp)-0.0007*inflation+0.2828*log(infrastructure)+0.2994*log(oda)-0.0014*fdipol+0.01459*natural_res **(3)**
ifdi=-313.8263-1.0456*log(gdp)-0.0062*inflation+117.510*log(infrastructure)+6.7332*log(oda)-0.0237*fdipol-0.0985*natural_res **(4)**

Source: Authoring

*Table 5:***Fixed Effect Estimation Results**

Variables	**Kyrgyzstan**	**Kazakhstan**	**Uzbekistan**	**Tajikistan**
Dependent Variable =100*FDI/GDP				
Intercept	***-203.5108**** ***(-2.3507)***	75.9952 (0.99)	***-27.8618**** ***(-1.9783)***	***-313.8264**** ***(-1.7479)***
Market Size= Log(GDP)	1.9684 (0.5278)	***-5.8536.**** ***(-1.3924)***	1.0889 (2.0905)	***-1.0456**** ***(-0.2010)***
Macroeconomic Stability=Inflation	0.0037 (0.8531)	***-0.0030**** ***(-1.1065)***	***-0.0007**** ***(-1.1112)***	***-0.0062**** ***(-1.2192)***

Infrastructure= Log(Telephone lines (per 100 people)	***-5.3861**** ***(-0.2710)***	23.7756 (1.6883)	0.2828 (1.2162)	117.5101 (1.4314)
Natural Resources=Total natural resources rents (% of GDP)	***-2.4232**** ***(-1.0459)***	***-0.1501**** ***(-0.8816)***	***0.0145**** ***(0.0145)***	***-0.0985**** ***(-0.8453)***
log(ODA)	9.3285 (2.4868)	0.3363 (0.1646)	0.2994 (0.8034)	6.7332 (1.4297)
IFDI Policy= (Openness to IFDI)	***-0.021**** ***(-0.3633)***	0.0904 (0.9574)	***-0.0014**** ***(-0.069)***	***-0.0237**** ***(-0.6979)***
R2	0.6303	0.5826	0.7488	0.5829
No. of Observations	17	18	18	17

Source: Authoring

*Note:Values given in parenthesis represent t-stats, significance *0.01 and **0.05*

III. CONCLUSION

Findings of the recent study can be used in identifying the factors of investment as well as in analyzing business climate and identify the possible barriers of IFDI in selected Central Asian countries. Current research chose only seven variables, however the other variables also can be added in future studies like corruption, transition indicators, etc., or either some other variables can be grouped according to their significance on the different type of IFDI. For example policy variables, institutional variables and political risk or country risk variables so that from these analyses it is easier to retrieve the accurate outputs.

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