

ECONOMIC GROWTH, FDI AND ECONOMIC FREEDOM IN TRANSITION ECONOMIES: AN ANALYSIS WITH FIXED EFFECT MODEL

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Abstract: *This paper investigates the relationship between economic growth, foreign direct investment (FDI) and economic freedom in eleven transition economies using panel data that covers the period from 2005 to 2008. We used six different measures of the economic freedom indices provided by the “Index of Economic Freedom” data set. Our results show both FDI and economic freedom have a significant positive impact on economic growth for the countries under investigation. However, our results also reveal that economic freedom is not very important in attracting FDI. While we find that five out of our six economic freedom indices have a strong positive impact on economic growth, we find only one out of the six economic freedom indices (i.e. the business freedom index) to have a significant positive impact on FDI. Interestingly, we ascertain that a country with less corruption (i.e. high freedom in the corruption index) has reduced FDI inflow in the host economy, indicating foreign investors may encounter less flexibility in countries with less corruption. Our findings bare that the most important factor in attracting FDI is lag of GDP which measures the size of the markets in host economies. Overall, our investigation reveals that transition economies will benefit from policies aimed at improving economic freedom and attracting FDI as these two variables directly lead to economic development.*

Keywords: *GDP, FDI, Economic Freedom Indices, Transition economies*

JEL Classification: *E22, E24, F43 and F47*

I. INTRODUCTION

Over the past few decades, many developing countries have witnessed the increasing significance of foreign direct investment (FDI).¹ According to UNCTAD (2010), although FDI in developed economies decreased by 29.4% during the 2007-2008 period; developing countries experienced a FDI inflow increase of 11.5% during the same period.² In so far as region specific studies are concerned, in 2000, FDI inflow in transition economies was only 7.03 billion. Over the years FDI inflow in transition economies have shown a significant upward trend. During the period 2007 to 2008, FDI inflow in transition economies went up from 90.97 billion dollars to 122.58 billion dollars, an increase of 34%.³ The leading beneficiary country in terms of FDI inflow in a transition economy, the Russian Federation, experienced an increase of 32.8% during the same period. These figures indicate that in transition economies FDI is playing a very important role.

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Notwithstanding, available studies investigating role of FDI in these economies show mixed results. Barenzstein, De Gregorio and Lee (1998), and Carkovic and Levine (2003) find little support for the positive relationship between FDI and economic growth for countries in Eastern and Central Europe. On the other hand, Campos and Kinoshita (2002), Garibaldi *et al.* (2001) and Reshmini (2000) find FDI to have a positive impact on economic growth. Most of these studies, however, have focused on micro level study.

Another variable that has received some attention in economic growth literature is the institutional quality of an economic system. From Adam Smith to current economists, most scholars believe better institutional quality is a precondition for economic development. In 1776, Adam Smith in his “Wealth of Nations” stated when institutions protect the liberty of individuals, greater prosperity results for all. Current economist Brue (2010) reflects a similar sentiment stating, “[a] country with an efficient court system, honest government officials, and a stable constitution will enjoy a high standard of living than a country with a poor court system, corrupt officials, and frequent revolutions and coups.”

Previous research has shown that institutional quality can be an important factor for promoting economic growth, as well as attracting FDI inflow. The cross-county analysis of Knack and Keefer (1995) reveals that long-run economic growth is significantly correlated with the different measures of institutional quality. Likewise, Kandil (2009), through the use of micro foundations in the transmission channel between institutional quality and economic growth, also found that institutional quality significantly increases economic growth in MENA countries.⁴ Investigating the relationship between FDI and institutional quality, the research of Gastanga *et al.* (1998), Lee and Mansfield (1996), Onyeiwu (2004), Caetano and Calerio (2009) and others conclude FDI is also positively correlated with institutional quality.

After the collapse of the Soviet Union, Central and Eastern European countries underwent major institutional changes. The correlative amount of FDI directed towards these transition economies coupled with the major institutional changes simultaneously occurring indicates that there is a need to fully understand what role institutional quality plays in promoting economic growth and/or attracting FDI. A study by Elen A. Kadi (2010) looks at how institutional quality can influence FDI inflow via four South Eastern European (SSE) countries (Greece, Bulgaria, Croatia and Romania). The results of this study show that institutional quality does have positive impact on FDI inflow in SSE countries. However, as a micro level study, Kadi (2010) did not look at impacts of institutional quality on economic growth. Another study, by Estrin and Mayer (2008), researching determinants of FDI in transition economies, finds that the investment risk variable (which is an institutional quality variable) has no significant impact on FDI inflow; however, according to this study, other variables such as GDP and trade openness are significant in determining FDI inflow.

The studies mentioned above have used different measures of *institutional quality* as their independent variables. We, on the other hand, will use various measures of economic freedom as our explanatory variables. Given that a country with better institutional

quality and regulatory reform undergoes more economic freedom, using an economic freedom index is justified as an explanatory variable to study the impact of institutional quality on economic development.

The purpose of this paper, therefore, is to investigate the relationship between economic growth, FDI and economic freedom for eleven transition economies: Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Russian Federation, Slovak Republic and Ukraine. Though there are some studies which examine the role of FDI and institutional quality in transition economies, those studies are far from being complete; and, most of those studies are micro level studies. This study is a macro level study with the most recent data, including more countries. The paper is organized as follows: the Introduction is given in Section I; FDI and Economic Freedom in Transition Economies are discussed in Section II; Data and Methodology is presented in Section III; and, Empirical Results are given in Section IV. Finally, the summary and conclusion is given in Section V.

II. FDI AND ECONOMIC FREEDOM IN TRANSITION ECONOMIES

Far from the 19th century view of FDI as an apparatus for the imperialistic exploitation of the developing world, today it is generally accepted that FDI is major catalyst for development. Few countries, other than Japan and Korea, have been able to grow rapidly with minimal reliance on FDI, Klein *et al.* (2001). Thus, FDI is seen as key figure in economic development and in the expanding role in the global economy. FDI provides investors with new markets and marketing channels, cheaper production facilities, transfers of technology and knowledge, and access to human capital, this in addition to the various incentives offered by potential host countries to induce the investment. For the host country and entity which receives the investment, FDI can provide a source of new technologies, capital, processes, products, and business practice and management skills. Likewise, FDI creates new employment opportunities, and potentially aids in enhancing social and environmental standards in the host country, for example, by transferring “cleaner” technologies and leading to more socially responsible corporate policies.⁵ While traditionally the majority of FDI flows to developed nations, over recent decades, more developing nations have attracted FDI. Such influx of FDI has proven to contribute to the host countries’ economic development and modernization, income growth and employment.

The case of transition economies of CEE and CIS are explicative of why FDI is now viewed with such near-universal approval. The profound shift in economic and social prosperity in these transition economies is unprecedented in recent history. Countries such as Poland, Hungary, and Estonia experienced sharp growth in per-capita GDP and labor productivity, driven primarily by the large amounts of FDI that these countries have attracted. Without their FDI successes, these countries would not have been so quickly inducted into the European Union (EU). The large amounts of FDI that have gone into CEE can be easily explained by conventional economic theory. They reflect the combination of Central Europe’s relatively low unit labor costs, high education levels and its close proximity to one of the global economy’s core regions. Moreover, these

national and sub-national governments typically compete actively for major international investment projects by offering tax holidays, special tariff regimes, and other benefits. Likewise, mass privatization of state owned assets has drawn significant amount of FDI into the region.

According to Kálmán Kalotay, an Economic Affairs Officer for UNCTAD/Division on Investment and Enterprise (DIAE), FDI has shifted in favor of developing and transition economies, Kalotay (2010). Statistics presented by the UNCTAD/DIAE showed average global FDI during 1999-2001 to be distributed as follows: developed nations 78%; developing nations 21%; and, nations in transition (SEE & CIS) 1%. For 2007-2008 those figures are: developed nations 63%; developing nations 31%; and, nations in transition 6%. Developing and transition economies accounted for 43% of FDI in 2008 (31% in 2007). Indeed, FDI flows to transition economies are expected to maintain their upward trend despite the financial crisis and regional conflicts.⁶

This trend can be accredited at least in part to liberalization of trade and investment policies, easing of restrictions on foreign investment and acquisition, and the deregulation and privatization of many industries, in addition to the tax relief and other benefits mentioned *supra*, all of which are part and parcel of advances in economic freedom. According to the Heritage Foundation, “[e]conomic freedom is the fundamental right of every human to control his or her own labor and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please, with that freedom both protected by the state and unconstrained by the state. In economically free societies, governments allow labor, capital and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself.”⁷

The shift by transition nations from command economies and low levels of economic freedom to market economies with higher levels of economic freedom is no small task. The 1991 collapse of the Soviet Union, and Moscow’s corresponding loss of control/influence over other countries in Eastern Europe, left the region struggling to transform and adjust to its new realities.

The transition experience for each of these nations differs according to the level of economic development at the beginning of the transition, environmental factors and distortions, stemming from their economic isolation, which were left behind. Examples of such distortions include: distorted trade patterns; lack of foreign technological advances; isolation from democratic ideas; and, isolation from Western democratic institutions. Although all transition countries inherited dysfunctional institutions, the initial condition prevailing at the onset of transition differs. For example, many transition countries differed in the length of their socialist period, for some of the former Soviet republics it was upwards of 70 years. CEE countries are generally much smaller and homogeneous in many ways, and are located in geographic proximity to Western Europe. The various transition countries also had different per capita income, different trade experiences with outside economies, different resource bases, and different labor concentrations, i.e. varying percentages of workers in agriculture versus heavy industry.

Some common features of transition economies at the beginning of transition were dysfunctional institutions, minute private sector share in ownership, foreign trade was controlled by the state, artificially high levels of employment, high levels of secondary school enrollment, a pattern of severe economic collapse followed by recovery, and significant increases in inflation accompanied liberalization.

While some nations, such as Poland, adopted rapid transition policies, others opted for a more gradual approach. Notwithstanding, there was and is presently a general trend among transition economies neighboring the EU to adapt their systems to the EU economic order. This is primarily because these transition nations were or are vying for entrance into the EU. Thus these nations have significantly higher levels of economic freedom as compared to their non-EU neighboring counterparts. Additionally, transition for these countries has been relatively accelerated compared to their non-EU neighboring counterparts.

III. DATA AND METHODOLOGY

We propose to investigate the relationship between FDI, Economic Freedom (EF), and economic growth by using the following reduced form equation. The equation to be estimated is as follows:⁸

$$\text{Equation 1: } \ln\text{GDP} = a_0 + a_1 \ln\text{DI} + a_2 \ln\text{FDI} + a_3 \text{EF} + e$$

Where: GDP = Gross domestic product

DI = Gross Domestic Capital Formation

FDI = Foreign Direct Investment

EF = Index for Economic Freedom

e = error term

The equation presented above has some unique characteristics. First, in addition to domestic investment, we included a FDI and EF variable. Theoretical justification of inclusion of these two variables in the equation has been discussed in the introduction. Most of the variables in our equation are in natural logarithm form. As such, the coefficient represents the impact of each independent variable on economic growth. Following previous economic growth literature, we also included variables representing human capital and technology in our final estimation.⁹

To elaborate, the indices for the EF variable in our equation utilizes six different measures of economic freedom: (1) Overall Score (OSC), (2) Property Rights (PRSC), (3) Business Freedom Score (BSC), (4) Labor Freedom Score (LFSC), (5) Trade Freedom Score (TSC) and Freedom from Corruption (FCSC). These indices are collected from the "Index of Economic Freedom", an annual guide published by the World Street Journal and The Heritage Foundation. Each index is measured on a scale from 0 to 100. Higher scores indicate that the country enjoys higher economic freedom in each category mentioned above. For example, a higher value for BSC indicates that the country's institutions offer more freedom for conducting business.

In all, ten different indices are provided in the “Index for Economic Freedom”. The overall Score (OSC) is a composite score calculated using all ten different indices, giving each index equal weight. A higher value for OSC indicates the target country has higher overall economic freedom. The countries around the world are divided into following categories in terms of OSC: (Category 1) Free with OSC between 100-80; (Category 2) Mostly Free with OSC between 79.9-70; (Category 3) Moderately Free with OSC between 69.9-60; (Category 4) Mostly Unfree with OSC between 69.9-50; and (Category 5) Repressed with OSC between 49.9-0. According to the 2011 “Index for Economic Freedom”, Hong Kong has the highest OSC of 89.7 and North Korea has lowest OSC of 1.0. The United States has an OSC of 77.8.¹⁰ The definitions of all the variables in our study are given below.

Definitions of the Variables

GDP	Gross Domestic Product
GDP_1	Lag of Gross Domestic Product
DI	Gross Domestic Capital Formation
FDI	Inflow of Foreign Direct Investment
INT	Internet use per hundred population
TSCH	Schooling Enrollment, Tertiary (% of Gross)
OSC	Overall Score of Economic Freedom
BSC	Business Freedom Score
TSC	Trade Freedom Score
LFSC	Labor Freedom Score
PRS	Property Right Score
FCSC	Freedom from Corruption Score

As mentioned in the introduction, institutional quality can affect both economic growth and FDI. We therefore, will extend our analysis by estimating another version of equation 1 where our dependent variable shall be FDI.¹¹

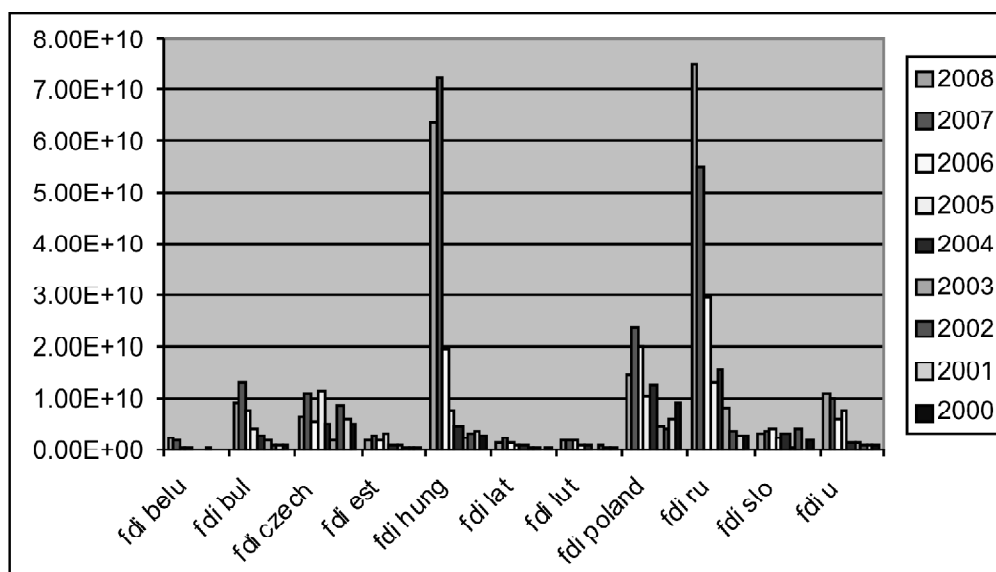
The data used for this study comes from World Development report and “Index of Economic Freedom” data provided by the World Street Journal and the Heritage Foundation. The data collected covers the period 2005-2008 for the 11 transition economies.¹² Since we are interested in investigating the relationship between economic growth, FDI and economic freedom during recent years, we used only four observations from each country under investigation. It would be impossible to obtain significant t-ratios and F- statistics for such small observations if we run regressions for each country; therefore, we pooled the data from each transition economy into a panel. Pooling the data refers to stacking the data for each country, one on top of the other. However, the panel data may suffer from the problem of hetroskedasticity and autocorrelation. One way to solve this problem is to use a fixed effect model instead of ordinary least squares.

In a fixed effect model, country dummies and time-series dummies are used to capture systematic differences among panel observations to solve the problems in panel data. Fixed effect models control for the omitted variables that are assumed to be more or less constant over the time period.¹³

IV. EMPIRICAL RESULTS

The average GDP and FDI of the countries we investigated for the periods 2005-2008 are 199 billion and 12.6 billion, respectively. However, the countries we investigated are quite different in terms of the variables we studied. For example, in 2008, the GDP of Russia was close to \$1.67 trillion followed by Poland which had a GDP of \$528 billion. At the low end, we have Estonia (\$13.9 billion in 2005) and Latvia (\$16 billion in 2005). The data also reveals that flow of FDI is highest in Russia (\$75 billion in 2008). This information indicates that the relationship between FDI and GDP may be positive.

Figure 1: FDI Inflow in the Countries under Investigation



belu: Belarus, bul: Bulgaria ; Czech: Czech Republic ; est: Estonia; hung: Hungary ; lat: Latvia ; lut: Lithuania; Poland: Poland ; ru: Russian Federation ; slo: Slovak Republic ; u: Ukraine

Likewise, the average Overall Economic Freedom index (OSC) in our data is 62.5. Estonia has the highest OSC index of 78 (in 2007), while Belarus has the lowest OSC index of 45.3 (in 2008). Differences in the economic freedom index between the countries as well as differences in the index between the years we investigated give us the opportunity to study how the economic freedom index affects GDP and FDI. Over the years the OSC indices have shown an increasing trend for most of the countries we studied. This implies that economic freedom may have positively influenced economic development in transition economies. Interestingly, Russia which has the highest inflow of FDI among

the transition economies has an average OSC index of only 51.18. One of the reasons that Russia has a lower OSC index is that Russia is among the countries which have the lowest average index for FCSC (26). This anomaly has played a factor in pulling down the OSC index for this country. This information does indicate, however, that a lower score of FCSC (i.e. higher level of corruption) may be conducive for FDI. A table showing the detailed descriptive statistics of the variables in our data set is given in the appendix.

We start our investigation of the relationship between economic development, FDI and economic freedom by estimating equation 1 using a fixed effect model. The results of our empirical investigations are provided in Table 1.

Table 1
Dependent Variable: Log of GDP

<i>Independent Variables</i>	<i>(1)</i> <i>Coefficients</i>	<i>(2)</i> <i>Coefficients</i>	<i>(3)</i> <i>Coefficients</i>	<i>(4)</i> <i>Coefficients</i>	<i>(5)</i> <i>Coefficients</i>	<i>(6)</i> <i>Coefficients</i>
FDI	0.184788** (1.994070)	0.418266*** (4.693221)	0.431713*** (3.117985)	0.283845*** (3.112767)	0.386964*** (3.413962)	0.461169*** (5.844655)
DI	3.491783*** (6.087451)	2.985636*** (4.772684)	3.703211*** (4.208438)	2.761968*** (4.408500)	3.828664*** (4.944710)	3.397357*** (6.295198)
INT	-0.004570 (-.277380)	0.031721** (2.016677)	0.037372 (1.648345)	-0.027371 (-1.381866)	0.018585 (0.879835)	-0.005905 (-0.382463)
TSCH	0.021246 (1.162165)	0.045275** (2.304643)	0.028166 (0.991773)	-0.002489 (-0.123964)	0.016131 (0.642338)	0.021548 (1.255693)
OSC	0.163518*** (5.741714)					
PRSC		0.058366*** (5.117573)				
BSC			-0.004806 (-0.348639)			
LFSC				0.151160*** (5.265368)		
TSC					0.027886*** (2.695498)	
FCSC						0.070904*** (6.371526)
No of observations	42	42	42	42	42	42
Adjusted R-squared	0.96	.96	.90	.95	.92	.96
Durbin-Watson stat	2.37	2.39	1.88	2.34	2.03	2.21

T-Statistics are given in the parenthesis.

***, **, * indicate significant at 1%, 5% and 10% level.

Note: All regressions include both country and time dummy variables.

We estimated 6 different versions of equation 1 using one of the EF variables in each estimate. As expected, our results from all six estimates show both domestic investment (DI) and FDI have significant (i.e. significant at the 1% level) positive impact on economic growth. However, we find that our technology variable (INT) and human capital variable (TSCH) have significant (i.e. significant at the 5% level) positive impact on economic growth only in estimate (2) where our EF variable is the property right index (PRSC). In all of the remaining five estimates, we find the INT and TSCH variable to be insignificant for economic growth. These results are contrary to economic theory. One possible explanation for this finding is that countries with better technology and a labor force with higher human capital are also expected to enjoy more economic freedom. This may cause the INT and TSCH variables to have a multicollinearity problem with EF variables leading to insignificance of these variables in most of our estimations.

Finally, except for the BSC variable, we find all the EF variables to have significant (i.e. significant at the 1% level) positive impact on the economic development of countries in transition economies. This is noteworthy as it indicates that as countries in transition economies, moving from socialist to market economies, enjoy more economic freedom, they also enjoying higher standards of living in terms of economic growth as predicted by Adam Smith.

As indicated in the introduction, we not only investigated the impact of economic freedom on economic growth, we also explored to what extent this economic growth may come indirectly by effecting FDI. Most of the previous research looks at the impact of institutional quality on FDI, assuming that increases in FDI lead to economic growth which may not always be true. In Table II, we present the results of our investigation into the impact of EF variables on FDI. Except for BSC, most of the EF variables show no significant impact on FDI.¹⁴ Only in estimate 3, we find that a country with more business freedom (BSC) will attract more FDI. In four of our estimates (i.e. OSC, PRSC, LFSC, TSC), we find the EF variable to be insignificant in attracting FDI.¹⁵ Our results, therefore, do not support the results of Kadti (2010) where the author finds significant positive impact of institutional quality on firm level FDI. As this study includes different countries and delves into data from different years at the macro level rather than the micro level, these results provide a strong indication that what is true for some specific conditions may not be true for other different conditions.

One interesting finding in Table 2 (*see* estimate 6) is that less corruption (i.e. a higher index for FCSC) will reduce the flow of FDI in the host economy.¹⁶ Kadti (2010) finds similar results at the firm level. The explanation given by Kadti is as follows, “[c]orruption seems to provide desired level of flexibility to foreign investors”. Likewise, it may be true that at the macro level foreign investors may find it easier to invest in a country with high corruption.

Finally, the results in Table II show that lag of GDP is more important in determining FDI inflow, a result supported by the research of Estrin and Mayer(2008), Chakrabarti (2001) and others.¹⁷ The argument is that market size measured by the size of GDP attracts FDI in host economies.

Table 2
Dependent Variable LOF of FDI

<i>Independent variables</i>	(1) <i>Coefficient</i>	(2) <i>Coefficient</i>	(3) <i>Coefficient</i>	(4) <i>Coefficient</i>	(5) <i>Coefficient</i>	(6) <i>Coefficient</i>
GDP_1	0.222976 (0.746953)	0.697600*** (2.739664)	0.433073** (2.101926)	0.412987 (1.609525)	0.488458** (2.085350)	0.665819*** (2.838888)
DI	3.082595 (2.167931)**	2.009614 (1.443740)	2.130295 (1.599153)	2.597636* (1.851202)	2.521655* (1.729682)	1.692653 (1.194014)
INT	0.004777 (0.130085)	0.023665 (0.757790)	0.025918 (0.850091)	0.014700 (0.342113)	0.029111 (0.843974)	0.050007 (1.493846)
TSCH	0.004251 (0.093989)	-0.041734 (-0.877920)	0.001602 (0.037913)	-0.010848 (-0.240241)	-0.008349 (-0.185237)	-0.022274 (-0.518629)
OSC	0.091861 (1.180149)					
PRSC		-0.044111 (-1.595471)				
BSC			0.033823* (1.943162)			
LFSC				0.028444 (0.414996)		
TSC					-0.004750 (-0.261862)	
FCSC						-0.050607* (-1.803176)
No. of obs.	42	42	42	42	42	42
Adjusted R-squared	.83	.84	.85	.83	.83	.85
Durbin-Watson stat	1.84	2.04	2.03	1.79	1.85	2.15

T-Statistics are given in the parenthesis.

***, **, * indicate significant at 1%, 5% and 10% level.

Note: All regressions include both country and time dummy variables.

V. CONCLUSION

This study investigates the relationship between economic growth, foreign direct investment and economic freedom in eleven transition economies. Recent data reveals that while in developed economies there is a demonstrable decreasing trend in FDI inflow, in developing economies, and especially in transition economies, FDI inflow is still showing an increasing trend. Therefore, in these economies, FDI is still seen as a source of economic growth. Our empirical investigation supports this view. Our results show that in transition economies FDI promotes economic growth which implies that a policy for attracting FDI should be considered for economic development. Our investigation also concludes that economic freedom directly influences economic growth in transition economies. As transition economies progress in improving institutional quality and regulatory freedom this leads to more economic freedom in these economies; additionally, this also leads to higher economic growth for these countries. However, our

findings do not support the supposition that economic freedom is very important in attracting flow of FDI. Only the business freedom index shows significant positive impact on FDI. On the other hand, our results corroborate previous research finding that the size of the market, which is measured by GDP, seems to be major determinant of FDI. Therefore, our results imply economic policies leading to higher protection of private property, higher level of trade and labor freedom and reduction of corruption should be a policy tool for economic growth. For increasing FDI inflow, policies should aim at increasing business freedom. In conclusion, our investigation shows both FDI and economic freedom directly and indirectly leads to economic development.

NOTES

1. FDI can stimulate economic growth directly through capital accumulation and indirectly through technology spillover. Researchers such as Zang (2001), Sun and Parikh (2001), Barrell and Pain (1997), Hsiao and Mei-cha Hsiao (2006), Hansin and Rand (2006) and others have found a positive relationship between FDI and economic growth.
2. Note, however, that during the 2008-2009 period, all the economies mentioned experienced a decline in FDI from the preceding year due to the global recession. In the years prior to 2009, increased FDI inflow in developing countries possibly stemmed from the fact that FDI is regarded as a source from which to propagate economic growth.
3. A list of transition economies are given in the appendix.
4. Six different indicators of institutional quality used by Kandil are: voice of accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption.
5. While countries are competing to attract FDI, many also place domestic policies to maximize the benefits, and minimize potential drawback, of foreign presence in their domestic economy. Potential drawbacks of FDI include a deterioration of the balance of payments, a lack of positive linkages with local communities, potentially harmful environmental impacts, especially in the extractive and heavy industries, social disruptions caused by accelerated commercialization in less developed countries, and possible detrimental effects on competition in national markets, which governments must consider.
6. A graph showing the inflow of FDI in the countries under investigation are given in the appendix. Also, brief discussions of FDI inflow in those countries are presented in section IV.
7. Brief discussions on the economic freedom indices of the countries in our study are also provided in section IV.
8. Equation 1 can be taken as a modified form of the Cobb-Douglas production function where the labor variable has been dropped due to data limitation and some other variables are added following previous economic growth literature.
9. Some of the variables usually found in previous growth literature, such as government spending and trade freedom, are not included in our regressions due to the fact that the EF variables (i.e., government spending score and trade freedom score) we used are expected to capture the effect of those independent variables.
10. For detailed explanation of how each of the Indices is measured, please go to <http://www.heritage.org/index/ranking>.
11. In our equation, where log of FDI is our dependent variable, we included one extra independent variable. That variable is log of GDP which measures the market size. Previous

- research has shown market size is important in attracting FDI (see Chakrabarti(2001), Estrin and Mayer(2008)). Also, our labor freedom index can be taken as an independent variable measuring cost as countries with higher labor freedom usually have higher cost of labor.
12. Here we like to note that the indices used to investigate the empirical relationship among the variables in economic literature are sometimes questioned due to the qualitative nature of this variable. For example, Kaufmann *et al.* (2007), and Kaufmann and Kraay (2007), found that there are explicit margins of error in the measurement of institutional indices when investigating the Worldwide Governance Indicators (WGI). However, Kaufmann *et al.* (2007), also stated that though the indices have a margin of error, the WGI still permit meaningful cross-country comparisons as well as monitoring progress over time. However, as most of the indices provided by the Heritage Foundation are quantitative instead of qualitative in nature, our investigations are least likely to suffer from the problem mentioned by the above authors.
 13. The drawback of the fixed effect model is that if the panel data has too many cross-sectional units of observations, the fixed effect model will require too many dummy variables, which, in turn, will reduce the number of degrees of freedom for adequate powerful statistical test (see Yafee(2003)). Since we have only eleven cross-sectional units covering only a four year period, the fixed effect model is the logical choice for our investigation.
 14. BSC variable has significant positive impact only at 10% level.
 15. Also these estimations suffer from serial autocorrelation.
 16. FCSC variable has significant negative impact only at 10% level.
 17. Out of the six estimates in Table II, four estimates show lag of GDP has significant positive impact on FDI.

REFERENCES

- Barrell, Ray and Nigel Pain (1997), "Foreign Direct Investment, Technological Change, and Economic Growth Within Europe," *The Economic Journal*, Vol. 107, Issue 445, pp. 1770 - 1786.
- Borensztein, E., J. De-Gregorio and J.W. Lee (1998), "How Does Foreign Direct Investment Affect Economic Growth?" *Journal of International Economics*, Vol. 45, Issue 1, pp. 115-135.
- Brue, Stanley L., Campbell R. McConnell, and Sean M. Flynn; *Essentials of Economics*, 2nd edition, McGraw-Hill/ Irwin, 2010.
- Caetan, Jose and Antonio Calerio (2009), "Economic Freedom and Foreign Direct Investment: How Different are the MENA Countries from the EU", Published Online December 2009 (<http://www.SciRP.org/journal/ib>), *iBusiness*, pp. 65-74.
- Carkovic, M. and R. Levine (2003), "Does Foreign Direct Investment Accelerate Economic Growth?" University of Minnesota, Working Paper.
- Campos, Nauro, F. Yuko Kinoshita (2002), "Why Does FDI Where It Goes? New Evidence From Transition Economies," *IMF working paper* 03/228.
- Chakrabarti, Avik (2001), "The Determinant of Foreign Direct Investment: Sensitivity Analysis of Cross-Country Regressions," *KYKLOS*, Vol. 54, pp. 89-114.
- Estrin, Saul and Klaus Meyer, "Foreign Direct Investment in Transition Economics: Strengthening the Gains from Integration". 2008.
- Garibaldi, P. N. Mora, R. Sahay, and J. Zettelmeyer (2001), "What Moves Capital to Transition Economies?" *IMF staff Papers*, 48, pp. 109-45.

- Gastanaga, V., J. Nugent, and B Pashamova (1998), "Host Country Reforms and FDI Inflows: How Much Difference do they make?" *World Development* 27 (7), pp. 1299-1314.
- Hansen, Henrik and John Rand (2006), "On the Causal Links Between FDI and Growth in Developing Countries," *The World Economy*, Vol. 29, Issue 1, pp. 21-41.
- Hsiao, Frank S. T. and Mei-Chu W. Hsiao, "FDI, Exports and GDP in East and Southeast Asian Economies," *Journal of Asian Economies*; available online November 1, 2006; <http://www.sciencedirect.com/science?Ob=B6W53-4M7VB4P-3>.
- Kaditi, A Eleni, "Foreign Investments and Institutional Convergences in South eastern Europe". *LICOS Centre for Institutions and Economic Performance*, Discussion paper 260/2010.
- Kalotay, Kalman, UNCTAD/DIAE, Foreign Direct Investment, presented at the *Study Tour for Russian Member Universities of the Vi Network (State University Higher School of Economics Moscow, Moscow, State Institute of International Relations (MGIMO) and St. Petersburg State University)*, 16 April 2010.
- Kandil, Magda ElSayed, "Determinants of Institutional Quality and their Impact on Economic growth in the MENA Region", *International Journal of Development Issues*, Emerald Group Publishing, Volume (Year): 8 (2009), Issue (Month): 2 (October), pp. 134-167.
- Kaufmann, Daniel and Art Kraay (2008), "Governance Indicators: Where Are We and Where Should We Be Going?", World Bank Research Observer (WBRO).
- Kaufmann, Daniel, Art Kraay and Massimo Mastuzzi, "Governance Matters VI: Governance Indicators for 1996–2006", World Bank Policy Research Working Paper No. 4280, July 2007.
- Klein, M., C. Aaron, and B. Hadjimichael (2001), "Foreign Direct Investment and Poverty Reduction", Policy Research Working Paper No. 2613, The World Bank, Washington, D.C., 2001.
- Knack S, Keefer P. (1995), "Institutions and Economic Performance; Cross-country Tests using Alternative Institutional Measures". *Economics and Politics* 7(3): 207-227.
- Lee J. Y., Mansfield E. (1996), "Intellectual Property Protection and U.S. Foreign Direct Investment". *Review of Economics and Statistics*, 78(2): 181-186.
- Onyeiwu, S. (2004), "Analysis of FDI Flows in Developing countries: Is the MENA Region Different? , Selected Published Papers from the Tenth Annual Conference of the Economic Research Forum, Cairo, Egypt, pp 165-182, 2004. Retrieved from <http://www.mafhoum.com/press6/172E11.pdf>.
- Resmini, L., (2000), "The Determinants of Foreign Direct Investment in the CEECs," *Economics of Transition*, 8 (3), pp. 665-89.
- United Nations Conference on Trade and Development (UNCTAD), World Development Report (2010), New York, United Nations.
- Sun, Haishan and Ashok Parikh (2001), "Export, Inward Foreign Direct Investment (FDI) and Regional Economic Growth in China," *Regional Studies*, Vol. 35.3, pp. 187-196.
- Yafee, Robert, "A Primer for Panel Data Analysis", Information Technology at NYU, Fall Edition 2003; Http://www.nyu.edu/its/pubs/connect/fall03/yafee_primer.html
- Zhang, Kevin Honglin (2001), "Does Foreign Direct Investment Promote Economic Growth? Evidence From East Asia and Latin America," *Contemporary Economic Policy*, Vol. 19, No. 2, pp. 175-185.

APPENDIX
List of Transition Economies

In 2000, the IMF listed the following Central and East European countries as Transition Economies: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Kazakhstan, Kyrgyz Republic, Republic of Macedonia, Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Table I a
Descriptive Statistics

	GDP (\$)	DI (\$)	FDI (\$)	OSC	BSC	PRSC	TSC	LFSC	FCSC	INT Per 100	TSCH (%)
Mean	1.99E+11	4.35E+10	1.26E+10	62.58333	65.95238	48.69048	77.76667	63.73571	40.04762	38.7381	64.64286
Median	6.52E+10	1.82E+10	5.56E+09	64.7	70	50	82.4	61.8	40	41	66.5
Maximum	1.67E+12	3.69E+11	7.50E+10	78	85.3	90	86.6	80.6	67	66	79
Minimum	1.39E+10	4.46E+09	3.05E+08	45.3	40	20	44.2	47.4	21	4	40
Std. Dev.	3.51E+11	7.28E+10	1.90E+10	9.024463	12.15753	18.84013	10.20482	9.047862	11.15731	16.88853	10.76993
Skewness	2.899701	3.163597	2.310065	-0.3540	-0.25401	0.3669	-1.40873	0.225895	0.238535	-0.3832	-0.75432
Observations	42	42	42	42	42	42	42	42	42	42	42

Note: The entire economic freedom indexes are measured on a scale from 0 to 100.