



2nd GLOBAL CONFERENCE on BUSINESS, ECONOMICS, MANAGEMENT and
TOURISM, 30-31 October 2014, Prague, Czech Republic

Testing IDP Hypothesis by Cluster Analysis: Which Countries in Which Stage?

Ercan Yasar^{a*}, Sezgin Acikalin^b, M.Alper Gezer^a

^a *Dumlupinar University, Faculty of Economics and Administrative Sciences, Department of Economics, Kutahya, 43100, Turkey*
^b *Anadolu University, Faculty of Economics, Department of Economics, Eskisehir, 26090, Turkey*

Abstract

Although there are some theories to explain foreign direct investments, an approach that everybody agree on could not be developed to explain these investments' dynamic structure. Stages of investment development path theory emerge as a dynamic approach to Vernon's "product cycle theory" and Dunning's "eclectic paradigm". Although, there exist very valuable studies to test IDP hypothesis, there is no agreed method in the literature. GDP is used as the absolute indicator of development in econometric models used by many studies. We accept that countries that have identical GDP level may not be at the same development level, it is decided that using multivariate statistical techniques will give much more rational results to test IDP hypothesis. For that purpose, emerged from oriented theoretical and empirical literature, variables are decided from the determinant of foreign direct investment researches. Those variables are studied in 4 periods of (1980-1989), (1990-1999), (2000-2005), and (1980-2005). Cluster Analysis, grouping resemble individual and objects in the same cluster, is implemented according to predetermined choice criteria. Then, the countries displaying similar features take place in the same cluster. At the same time, statistical significance of partition of sets examined by Discriminant Analysis.

© 2015 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Selection and/ peer-review under responsibility of Academic World Research and Education Center

Keywords: Foreign Direct Investment, Investment Development Path, Cluster Analysis, Multivariate Analysis of Variance, Discriminant Analysis.

* Ercan Yasar. Tel.: +90 274 265 20 31; fax: +90 274 265 20 40.
E-mail address: ercanyasar26@hotmail.com

1. Introduction

There exist lots of determinant of foreign investment which are determiner of direct and indirect investment plans' of other countries encouraged by the holder of low saving developing countries. There are lots of empirical and theoretical working papers in literature directed towards those determinants. The investment development path theory is the most comprehensive and testable theory oriented to explain foreign direct investment. The level of development is usually measured by per capita GDP in empirical studies. Recently, there is a common view that the countries with the same per capita GDP may not have the same level of development.

2. Empirical Evidences

According to investment development path theory; there is relationship between country's net direct investment and where the country's development stage is. GDP per capita is used as indicator of absolute and comparative advantage in model. Fundamental hypothesis; while country is developing, conditions that domestic and foreign investors face also change. This will have an effect over inflows and outflows of foreign direct investment as well. However, inflow and outflow of foreign direct investments will affect economic structure. In other words, there is a dynamic interaction in between. Besides, according to Dunning and Narula (1996) accept that investment development path theory can effect governments, conditions of country and as a result flows of foreign direct investment and ownership advantages of domestic firms. Investment development path theory investigates countries at five stages with overhauled version (Dunning & Narula, 1996: 34). Duran and Ubeda (2001) assert that even though countries have the same level of GDP per capita, they can have different economic structure. It is studied by Duran and Ubeda from the aspect of heterogeneity of Central Eastern European countries, existence of natural resources, distance of geographical and cultural, potential market, economic system and government policies. (Duran & Ubeda, 2001:9). It is based investment development path theory on determining heterogeneous or homogenous cluster of countries in order to make them comparable with each other from the aspect of foreign direct investments. (Dunning & Narula, 1996;22). Recently, empirical studies have intensified to determine the level of countries in which stage according to stages of investment development path. From the aspect of foreign direct investment Bellak (2001), Buckley and Castro (1998), investigating the level of investment development path; from the aspect of dual investment relations Barry, Gorg and McDowell (2003), Dunning and Narula (1996) can give examples. (Bensebaa, 2008:43). On the other hand, the relationship between competition power, trying to determine investment quality environment, or Labour/investment environment indexes and foreign direct investment is discussed in many articles by using countries' various indicators. These indexes, calculated by some official or private international institutions, are obtained for various goal from the combination of various indicators. These indexes use indicators of per capita income, cost of labour force, inflation rate, public finance, level of education, quality of labour force along with law and justice order, regulations for private property, conditions of recruitment, conditions of setting up a new firm and its costs, procedures of tax, number of transactions related to external trade, penetration of corruption and bribery (Yükseler, 2005:3). There is no any consensus about how to fictionalize IDP model in empirical literature. Different methods have been studied to determine how to identify the country or countries and stage where in many studies. According to Dunning and Narula (1996), factors affecting the stage of a country' IDP is so complicated that there is a serious limitation of a complete empirical analysis. Besides, they state that analyses on the country bases (Country by Country) will be the best method. It is seen that studies are constructed as a combination of statistical analyses, econometrics, and historical overview of FDI. (Sangder, 2009: 21). Empirical studies usually base on IDP forecasting with time series analyses. Cross-section estimations are used in order to analyse IDP positions of various countries as well. However, Dunning and Narula (1996) assert that fixed cross-section analyse is not appropriate to estimate dynamic nature of IDP. While Dunning and Narula are explaining NOI, they have used only GDP as an explanatory variable and NOIs are reduced to GDP and GDP2.

$$NOI = \beta_0 + \beta_1 GDP + \beta_2 GDP^2 + \varepsilon, \quad (1)$$

Barry et al (2002) have studied to determine IDP stages of Spain and Ireland by using the same structure. On the other hand, Clegg (1996) has used IDP coefficient representing NOI in order to determine stages of IDP. Campa and

Guillén (1996) have used many indicators of dual country groups to explain FDI flows of Spain. As for Buckley and Castro (1998), has used a higher degree polynomial instead of second degree formation to estimate IDP of Portugal. At the first stage of this model, it is asserted that FDI inflows display a better performance than GDP for designing higher growth rate. Bellak (2001) takes the advantages of a polynomial function while calculating macro-IDP for Australia which has a higher degree than Castro's model. (Kayam & Hisarcıklılar, 2009:66-67). Because of the complexity of factor which affects each steps of IDP; clustering analyse, which is one of the multivariate statistical technique, is used in order to determine countries at each stage from the point of relative nature of development.

3. Application

Based on literature, this section aims to determine homogeneous country groups in the direction of factors that defining mechanical disintegration of the world. Within this framework; social, cultural, geographical and political variables, which are affecting site selection of foreign investors, are investigated according to evidence of this study as reported in Appendix 1. These effects are explained in the framework of an integrated model according to determinants of foreign direct investment and site selection preferences of foreign investors. The determinant factors, oriented towards site selection of foreign investors, can show differences from country to country, distinct to distinct, time to time, sector to sector and economic system to economic system. In literature; it is seen that studies are constructed from two channel for the determinant factors of foreign direct investment. These channels move through driving and attractive factors of foreign direct investment perspective. Investors focus on factors pushing investments out the country or region because of higher profit expectations' of investors, and as of driving factors, country or region, seen as the origin of capital, is not advantageous from the aspect of investment climate. Literature approach the determinant of foreign direct investment from the perspective of attractive factors, and it focus on factors which make a country or region more desirable than other country or regions. From the aspect of the determinants of foreign investments' site selection, it is observed that a factor set as driving factor for a country or region become an attractive factor for another country or region.

4. The Application of Clustering Analysis

Clustering, the selected countries as for sample, become crucial according to the variables of foreign direct investments' determinant factors, and from the point of determining common policies in attracting foreign direct investment in literature. Even if the variables used in clustering analysis don't be measured with different a different scale, they are important from the point of standardization of variables, and giving equal importance to variables. Therefore, the standardization values of variables are used instead of original values of variables in the study (Tatlidil,1992:262). Hierarchical Agglomerative Clustering is used in the study. This method starts with assigning each country to its own cluster. Later, closest two cluster constitute a new cluster, so the number of cluster decreases at each step. Ward method is chosen for minimizing square of intra-group differences in clustering process. The square of Euclidean distance is used to measure the distance between objects. Countries are clustered according to their similarities as variables shown in Appendix 1. The significance of 5 cluster group differences is examined with MANOVA (Multivariate Analyse of Variance) test. Countries assigned to each cluster are determined.

The determination of clustering analyse divide into two as Hierarchical cluster and Non-Hierarchical cluster. Hierarchical cluster constitute a structure incrementally realized as like a tree. This method is divided into two as Agglomerative and Divisive. Different approaches are used to combine units at the stage agglomerative clustering methods. The most common usage is Ward method. Clusters are constituted by maximizing homogeneity of intra-group in ward method. The sum of intra-group square is taken as the measure of homogeneity. The aim in this method is to minimize the sum of intra-group square. Multi-dimensional statistical methods are required to determine how well countries are relative to each other. Thereby, Microsoft Excel program is used in order to edit data and make it ready for use; and then to perform desired grouping, SPSS 13 for Windows package program is used to test the validity of groups formed. In this package program, Hierarchical Cluster Analysis method is used to distinguish countries into groups, and Discriminant Analysis is used to test the significance of determined groups. Discriminant analysis is a multivariate statistical analysis which, reveal the success of grouping examined individuals in what extent initially defined classification variables, determine the variable or variables which have

the greatest impact in providing distinction among groups, and aim at uncovering in which groups a new individual can be involved. The main difference of Discriminant analysis from clustering analysis, groups are previously known at discriminant analysis (Özdamar, 2004:355–356). The number of cluster is determined according to previous studies in literature. Investment development path theory mentions 5th stage of development in literature (Dunning, 1981:41; Dunning, 1986a:30–31; Dunning, 1986b; Dunning, 1992:135; Dunning & Narula, 1996; Castro, 2000:30–35).

5. The Period of 1980-1989

The clustering analysis is performed to 108 countries according to the average of defined variables at Appendix-1 for the period of 1980-1989. Ward technique is used for all periods in the study and they are analysed with squared Euclidean distances. Data set is standardized between -1 and +1, and analysis is done for 5 periods. Totally 108 countries, classified in 5 clusters, are divided into clusters as reported in Appendix 2. As a result of the analysis, the numbers of countries are designated as, 27 for the first cluster, 29 for the second cluster, 27 for the third cluster, 20 for the fourth cluster, and 5 for the fifth cluster. ($p < 0,00005$) is found for the value of Wilks' Lambda, and it indicates that the clusters are categorically separated from each other, and heterogeneity among clusters is provided by dividing into 5 clusters, and no any cluster resemble to any another cluster. In another words, group mean vectors are different from each other significantly. Also, according to Discriminant Analysis' results, the clusters of 3,4 and 5th are separating successfully from other clusters, and 1and 2nd clusters are separated from other clusters at the significance level of %96. When the variables that affect the determination of the clusters are ranked according to their significance level, the most important variable is OECD (X53) membership, the second one is the number of landline phones per 1000 people which is used as a proxy to communication infrastructure, the third one is the development classification of World Bank (X56), the fourth one is per capita GDP (X8), and the fifth one is the variables of emerging market (X55). 21 variables take an important role to separate clusters. Totally 8 variables, which have a significance between 0.0001–0,0000001 and taking part between the rows of 36-42, have important role over cluster separations, even though the effects are less. Variables still have the separation efficiency at the significance level of 0.01-0.001, their effects are seen as weak. And finally, variables are ranked which are called as minor and have very little effect on the determination of clusters. These are determined as x6, x7, x9i x20i x35.

6. The Period of 1990-1999

The clustering analysis is performed to 129 countries according to the mean of defined variables at Appendix-1 for the period of 1990-1999. Ward technique is used for all periods in the study and they are analysed with squared Euclidean distances. Data set is standardized between -1 and +1, and analysis is done for 5 periods. Totally 129 countries, classified in 5 clusters, are divided into clusters as reported in Appendix 2. As a result of the analysis for the period of 1990-1999, the numbers of countries are designated as, 32 for the first cluster, 27 for the second cluster, 25 for the third cluster, 24 for the fourth cluster, and 21 for the fifth cluster. ($p < 0,00007$) is found for the value of Wilks' Lambda, and it indicates that the clusters are categorically separated from each other, and heterogeneity among clusters is provided by dividing into 5 clusters, and no any cluster resemble to any another cluster. In another words, group mean vectors are different from each other significantly. Also, according to Discriminant Analysis' results, the clusters of 2, 4 and 5th are separating successfully from other clusters, and 1and 3nd clusters are separated from other clusters at the significance level of %96. When the variables that affect the determination of the clusters are ranked according to their significance level, the most important variable is whether the country is in the classification called as emerging market (X55), the second one is per capita GNP (X8), the third one is the number of landline phone per 1000 people (X27), the fourth one is the OECD membership (X53), the fifth one is the development classification of World Bank (X56), the sixth one is the number of per capita mobile phone (X26), and the seventh one is the population ratio of 15-64 years of age (X12). 31 variables take an important role to separate clusters as it can be seen Appendix-4. Totally 3 variables, which have a significance between 0.0001–0,0000001, have important roles over cluster separations, even though their effects are less. Variables still have the separation efficiency at the significance level of 0.01-0.001, their effects are seen as weak. And finally, variables are

ranked which are called as minor and have very little effect on the determination of clusters. These are determined as x9, x16, x20, x24, x52.

7. The Period of 2000-2005

The clustering analysis is performed to 123 countries according to the mean value of defined variables at Appendix-1 for the period of 2000-2005. Ward technique is used for all periods in the study and they are analysed with squared Euclidean distances. Data set is standardized between -1 and +1, and analysis is done for 5 periods. Totally 123 countries, classified in 5 clusters, are divided into clusters as reported in Appendix 2. As a result of the analysis for the period of 2000-2005, the numbers of countries are designated as, 33 for the first cluster, 23 for the second cluster, 19 for the third cluster, 28 for the fourth cluster, and 20 for the fifth cluster. ($p < 0,00003$) is found for the value of Wilks' Lambda, and it indicates that the clusters are categorically separated from each other, and heterogeneity among clusters is provided by dividing into 5 clusters, and no any cluster resemble to any another cluster. In another words, group mean vectors are different from each other significantly. Also, according to Discriminant Analysis' results, the clusters of 1, 2 and 5th are separating successfully from other clusters, and 3 and 4nd clusters are respectively separated from other clusters at the significance level of %95 and %96. When the variables that affect the determination of the clusters are ranked according to their significance level, the most important variable is OECD (X53) membership, the second one is the number of landline phones per 1000 people, the third one is the development classification of World Bank (X56), the fourth one is per capita GDP (X8), and the fifth one is the variables of emerging market (X55). Totally 22 variables take an important role to separate clusters. Totally 4 variables, which have a significance between 0.0001–0,0000001, have important roles for cluster separations, even though their effects are less. Variables still have the separation efficiency at the significance level of 0.01-0.001, their effects are seen as weak. And finally, variables are ranked which are called as minor and have very little effect on the determination of clusters. These are determined as X9, X10, X11, X16, X20, X24, X52.

8. The Period of 1980-2005

After the sub-periods examined in this study, clustering analysis is performed to 135 countries according to the mean value of defined variables at Appendix-1 for 26 year period covering the period of 1980-2005. Ward technique is used for overall period in the study as in the other periods and they are analysed with squared Euclidean distances. Data set is standardized between -1 and +1, and analysis is done for 5 periods. Totally 135 countries, classified in 5 clusters, are divided into clusters as reported in Appendix 2 according to Ward technique and MANOVA. If we look at economic significance of clusters, it is seen that underdeveloped countries are taking place in 1st and 2nd clusters, and the economies, which are called as emerging markets, are taking place in 3th cluster. Total 23 countries consist of USA and developed Western countries, are seen as the indicator of development. Cluster 5 consist of economies, which are generally called as transaction economies except Singapore and Cyprus. Therefore, results are found as valuable and meaningful from the aspect of economics. Clustering analysis is performed for 135 countries according to Ward technique for the period of 1980-2005. As a result of the analysis, the numbers of countries are designated as, 41 for the first cluster, 29 for the second cluster, 23 for the third cluster, 21 for the fourth cluster. ($p < 0,00006$) is found for the value of Wilks' Lambda, and it indicates that the clusters are categorically separated from each other, and heterogeneity among clusters is provided by dividing into 5 clusters, and no any cluster resemble to any another cluster. In another words, group mean vectors are different from each other significantly. Also, according to Discriminant Analysis' results, the clusters of 1, 2 and 5th are separating successfully from other clusters, and 3 and 4nd clusters are respectively separated from other clusters at the significance level of %95 and %96. When the variables that affect the determination of the clusters are ranked according to their significance level, the most important variable is the OECD membership (X53), later variable of emerging market (X55), the third one is the development indicator (X56), the fourth one is the number of landline phones per 1000 people (X27), the fifth one is per capita GNI (X8), the sixth one is the rate of population aged 15-64 years to total population (X12). Totally 35 variables take an important role to separate clusters as it can be seen from Appendix-4. Total 7 variables, which have a significance between 0.0001–0,0000001 and taking place at second degree main determinants, have important roles for cluster separations, even though their effects are less. Variables still have the separation

efficiency at the significance level of 0.01-0.001, their effects are seen as weak. And finally, variables are ranked which are called as minor and have very little effect on the determination of clusters. These are determined as X9, X11, X20, X24, X35.

9. Result and Evaluation

Clustering analysis are reported above for the averages of (1989-1989), (1990-1999), (2000-2005) sub-periods and (1980-2005) overall periods. While clustering analysis are grouping countries into clusters, it separates intra-group high similarities and high heterogeneity among groups. But, it makes this process by not taking into account the level of development of countries. In other words, it doesn't submit statistical evidence as "the third cluster is better than second cluster as level of development". As for the level of development among clusters is decided according to cluster profile of each related variable, in other words centroids of cluster, and clusters are named or defined. According to that, results can be seen from Appendix 2 by taking into account 5 stages of IDP hypothesis, each cluster represents which stage or at each stage which countries take place. When countries at stage 5 examined; cluster where USA and developed European countries found, consist of countries which have top-level structure of attracting foreign investment. There is not any transaction from this cluster which is stable in all periods to clusters representing lower levels at any period. But, the elements of this cluster are seen increasing at the period of 2000-2005. Turkey, Poland, Portugal, Slovakia, Mexico, South Korea, Czech Republic, and Hungary are seen interposed among developed countries as like USA and Western European countries. While these countries are taking place at 4th stage of 1990-1999 periods, they take place at 5th stage of 2000-2005 period. The cluster stated as 5th is stable and consist of USA and developed Western European countries stage for the period of 1980-1989 and 1980-2005.

When countries at stage 4 looked, all periods are stable except the period of 2000-2005. The elements of cluster decrease when countries as like Turkey, Poland, Portugal, Slovakia, Mexico, South Korea, Czech Republic, and Hungary pass on the 5th stage countries group. But, this cluster is stable for the period of 1980-2005 as well. While Cyprus and Bangladesh take place in sub-stages at all periods, only they take place in 4th stage at the period of 1980-1989. If the countries of the 3th stage; consist of oil exporter countries as like Bahrain, Kuwait, Saudi Arabia, named as transition economies yet, and since the countries are not be found after the collapse of eastern bloc, for the period of 1980-1989. Per capita oil production (X24) is seen as one of the most effective variables in separating this cluster from other clusters for the period of 1980-1989. However, the elements of cluster are changed with the participation of eastern bloc countries in other periods, and this cluster consist of mostly eastern bloc countries in this way. For the countries in this stage; the period of 2000-2005 is seen as instable with respect to other periods, and it is seen that it consists of Central East Europe countries except Singapore, Cyprus and Mongols at the period of 1980-2005. When the countries at 2nd stage looked; most of the variables included to analysis find it difficult to distinguish countries at this stage from the countries at the 1st and 3rd stages. This group of countries generally consist of underdeveloped African countries. Although countries as like Belarus, Bosnia, Tajikistan, Ukraine, and Kazakhstan take place at the 2nd stage, this stage is observed as instable. Therefore, transition to other stages is observed and it constitutes the stage of most mobility. 1st stage cluster is instable as like 2nd stage cluster. But, this can be said that it is a little more stable. Countries are underdeveloped, and have low level of potential to attract foreign direct investment at this stage.

Appendix1: Used Variables and Data Set

	Variables	Sources
x2	Country (id)	
x3	Year	
x4	Period	
x5	FDI Inflow Per Capita	UNCTAD
x6	FDI Inflow Milion Dolar Share to GDP	UNCTAD
x7	NOIP FDI Outward Stock-FDI Inward Stock	UNCTAD
x8	GDP Per Capita	World Bank WDI
x9	GDP 1993 Base Year	World Bank WDI
x10	Inflation, Consumer Prices (annual %)	World Bank WDI
x11	Population Density (people per sq. km)	World Bank WDI

x12	Population Ages 15-64 (% of total)	World Bank WDI
x13	Urban Population Density	World Bank WDI
x14	Labor Force % pop	World Bank WDI
x15	Employment to Population Ratio, Ages 15-24, total (%)	World Bank WDI
x16	Merchandise Exports (current US\$) Share to GDP	World Bank WDI
x17	Merchandise Import (current US\$) share to GDP	World Bank WDI
x18	Imports of Goods and Services (BoP, current US\$) Share to GDP	World Bank WDI
x19	Exports of Goods and Services (BoP, current US\$) Share to GDP	World Bank WDI
x20	Exp-Import	World Bank WDI
x21	Exp+Import	World Bank WDI
x22	Trade Openness (EXP+IMP/GDP)	Chinn & Ito (2006)
x23	Bureaucratic_Quality_PRS_wgeo	Adjusted ICRGs Data
x24	Oil_Production Per Capita (millions of barrels per day per capita)	World Bank WDI
x25	GDP/Import+export	World Bank WDI
x26	Mobile Phone Subscribers Per 1000 Person	World Bank WDI
x27	Telephone Subscribers Per 1000 Person	World Bank WDI
x28	Roads, Goods Transported (million ton-km) Excepted for 2000-2005	World Bank WDI
x29	Railways, Goods Transported (million ton-km) Excepted for 2000-2005	World Bank WDI
x30	Air Transport Freight (million ton-km)	World Bank WDI
x31	Pump Price for Diesel Fuel (US\$ per liter) excepted for 1980-1989	World Bank WDI
x32	Pump Price for Gasoline (US\$ per liter) excepted for 1980-1989	World Bank WDI
x33	Electricity Price	World Bank WDI
x34	Distance to FDI (Distance from FDI)	Calculated by 3-D Map
x35	Real Exc. Rate Value	ERSUSDA
x36	CO2 Emissions (metric tons per capita)	World Bank WDI
x37	CO2 Emissions (kg per 2005 PPP \$ of GDP)	World Bank WDI
x38	CO2 Emissions (kt)	World Bank WDI
x39	Autoc=0 Democ=6	Polity IV 2003
x40	DTT Number	UNCTAD
x41	DTT Share	UNCTAD
x42	DTT	UNCTAD
x43	BIT Number	UNCTAD
x44	BIT Share	UNCTAD
x45	BIT	UNCTAD
x46	Capital Open	UNCTAD
x47	Legal Origin	Polity IV 2003
x48	Ethnic Frac	Polity IV 2003
x49	Language Frac	Polity IV 2003
x50	Religion Frac	Polity IV 2003
x51	Total Frac	Polity IV 2003
x52	MIGA Member(dummy)	http://www.miga.org
x53	OECD Membership	
x54	WTO Membership	
x55	Emerging Market (Dummy)	
x56	Developmet (Dummy)	
x57	Geo Dummy	
x58	Sub-geo (Dummy)	
x59	EU Membership (Dummy)	

Appendix 2: Identification and Nomenclature of Cluster According to Cluster Centroids

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
1980–2005	Angola, Benin, Burkina Faso, Burundi, Cameroon, Central Africa, Chad, Congo Rep., Cote d'Ivoire,	Afghanistan,Albania, Algeria, Bahrain, Bangladesh, Bolivia, Botswana, Cambodia, Costa Rica, Dominican Rep., Ecuador, Egypt, El Salvador, Fiji, Guyana, Honduras, Iran,	Armenia, Azerbaijan, Belarus, Bosnia, Bulgaria, Croatia, Cyprus, Czech Rep., Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia,	Argentina, Brazil, Chile, China, Colombia, Hungary, India, Indonesia, Israel, Korea Rep., Malaysia, Mexico, Pakistan, Peru,	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway,

	Ethiopia, Gabon, Ghana, Guinea, Guinea-Bissao, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zambia	Jamaica, Jordan, Kuwait, Laos, Lebanon, Libya, Mauritius, Morocco, Myanmar, Namibia, Nepal, Nicaragua, Oman, Panama, Papua New Guinea, Paraguay, Saudi Arabia, Sri Lanka, Swaziland, Tajikistan, Trinidad, Tunisia, Uruguay, Vietnam.	Moldova, Mongolia, Romania, Singapore, Slovakia, Slovenia, Turkmenistan, Ukraine,	Philippines, Poland, Russia, South Africa, Thailand, Turkey, Venezuela,	Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.
1980–1989	Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Rep., Chad, Congo Rep., Cote d'Ivoire, Ethiopia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Paraguay, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zambia,	Algeria, Bolivia, Botswana, Bulgaria, Costa Rica, Dominican Rep., El Salvador, Gabon, Guyana, Honduras, Iran, Laos, Libya, Mauritius, Morocco, Myanmar (Burma), Nepal, Nicaragua, Panama, Papua New Guinea, Poland, Romania, Swaziland, Syria, Trinidad, Uruguay.	Bahrain, Kuwait, Oman, Saudi Arabia, Singapore.	Argentina, Bangladesh, Brazil, Chile, China, Colombia, Cyprus, Ecuador, Egypt, Hungary, India, Indonesia, Israel, Jamaica, Jordan, Korea Rep, Malaysia, Mexico, Pakistan, Peru, Philippines, South Africa, Sri Lanka, Thailand, Tunisia, Turkey, Venezuela,	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States,
1990–1999	Angola, Benin, Burkina Faso, Cameroon, Central African Rep., Chad, Congo Rep, Cote d'Ivoire, Ethiopia, Gabon, Ghana, Guinea, Guinea-Bissau, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zambia,	Bangladesh, Bolivia, Botswana, Costa Rica, Dominican Rep, Ecuador, El Salvador, Fiji, Guyana, Honduras, Jamaica, Mauritius, Namibia, Nicaragua, Panama, Papua New Guinea, Paraguay, Sri Lanka, Swaziland, Trinidad, Uruguay.	Algeria, Armenia, Azerbaijan, Belarus, Bosnia, Bulgaria, Croatia, Cyprus, Estonia, Georgia, Iran, Jordan, Kazakhstan, Kyrgyzstan, Laos, Latvia, Libya, Lithuania, Macedonia, Moldova, Mongolia, Myanmar, Nepal, Oman, Romania, Saudi Arabia, Slovakia, Slovenia, Syria, Turkmenistan, Ukraine, Vietnam.	Argentina, Brazil, Chile, China, Colombia, Czech Rep., Egypt, Hungary, India, Indonesia, Israel, Korea Rep., Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Thailand, Tunisia, Turkey, Venezuela.	Australia, Austria, Bahrain, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Kuwait, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States.
2000–2005	Angola, Benin, Burkina Faso, Cameroon, Congo Rep, Cote d'Ivoire, Ethiopia, Gabon, Ghana, Kenya, Madagascar, Malawi, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zambia,	Azerbaijan, Bangladesh, Belarus, Bosnia, Cambodia, Fiji, Iran, Kazakhstan, Laos, Lebanon, Libya, Myanmar, Nepal, Papua New Guinea, Saudi Arabia, Sri Lanka, Syria, Tajikistan, Ukraine, Vietnam.	Albania, Armenia, Bahrain, Bolivia, Botswana, Bulgaria, Costa Rica., Croatia, Cyprus, Ecuador, El Salvador, Estonia, Georgia, Guyana, Jamaica, Kuwait, Kyrgyzstan, Latvia, Lithuania, Macedonia, Mauritius, Moldova,	Argentina, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Israel, Jordan, Malaysia, Morocco, Pakistan, Peru, Philippines, South Africa, Thailand, Tunisia, Venezuela.	Australia, Austria, Belgium, Canada, Czech Rep., Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea Rep., Mexico, Netherlands, New Zealand, Norway,

Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zambia.	Mongolia, Nicaragua, Oman, Panama, Paraguay, Romania, Singapore, Slovenia, Swaziland, Trinidad, Uruguay.	Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.
---	---	--

References

- Barry F., Gorg H. & McDowell A. (2002). Outward FDI and The Investment Development Path of a Late-Industrialising Economy: Evidence from Ireland, *Regional Studies*, 37:4, (pp. 341-349), doi:10.1080/0034340032000074389.
- Bellak, C. (2001). The Austrian Investment Development Path, *Transnational Corporations*, 10, (pp.107-134).
- Boudier - Bensebaa, F. (2008). FDI-assisted Development in the Light of the Investment Development Path Paradigm: Evidence From Central and Eastern European Countries, *Transnational Corporations*, 17(1), (pp. 37-67).
- Buckley, P.J., Castro F.B. (1998). The investment Development Path: The Case of Portugal”, *Transnational Corporations*, Volume:7, Number:1, April, (pp. 1-15).
- Campa, J. M. & Guillén, M. F. (1996). Spain: a Boom From Economic Integration. Foreign Direct Investment and Governments. Catalysts for economic restructuring. Edited by John H. Dunning and Rajneesh Narula 1996, (pp. 207-239). Rutledge.
- Castro, F.B. (2000). Foreign Direct Investment in the European Periphery: The Competitiveness of Portugal, University of Leeds, *Unpublished PhD Thesis*.
- Dunning, J. H. & Narula, R. (1996). The Investment Development Path Revisited: Some Emerging Issues, In (Ed.) John H. Dunning and Rajneesh Narula, Foreign Direct Investments And Governments: Catalysts For Economic Restructuring. London: Routledge, (pp. 1-41).
- Dunning, J. H. (1986b). The Investment Development Cycle Revisited, *Weltwirtschaftliches Archiv*, 122, (pp. 667-677).
- Dunning, J. H. (1992). The Competitive Advantage of Nations and TNC Activities: A Review Article, *Transnational Corporations*, Number: 1 (2), (pp. 135-168).
- Dunning, J.H. (1981), Explaining the International Direct Position of Countries: Towards a Dynamic or Developmental Approach, *Review of World Economics*, Vol:117, No:1, (pp. 30–64).
- Dunning, J.H. (1986a). The Investment Development Cycle and Third World Multinationals”, in Khushi M. Kan, ed., Multinationals of the South: New Actors in the International Economy, London: Frances Pinter Publishers, (pp. 15-47).
- Duran, J. J. & Ubeda, F. (2001). The Investment Development Path: A New Empirical Approach and Some Theoretical Issues, *Transnational Corporations*, Vol. 10, No: 2, (pp: 1-34).
- Kayam, S.S. & Hisarciklilar, M. (2009). Revisiting the Investment Development Path (IDP): A Non Linear Fluctuation Approach, *International Journal of Applied Econometrics and Quantitative Studies* Vol: 6-2, (pp.63-82)
- Özdamar, K. (2004). Paket Programlar ile İstatistiksel Veri Analizi (Çok Değişkenli Analizler), 5. Baskı, Kaan Kitabevi, Eskişehir.
- Sangder M. (2009). The Investment Development Path and Small Developed Economies – The Case of Finland, *Norges Handelshoyskole Norwegian School of Economics and Business Administration*.
- Tatlıdil H. (1996). Uygulamalı Çok Değişkenli İstatistiksel Analiz, *Engin Yayınları, Ankara*.
- Yükseler Z. (2005). Doğrudan Yabancı Sermaye Yatırımları ve İş/Yatırım Ortamı İlişkisi”, <http://www.tcmb.gov.tr/yeni/evds/yayin/kitaplar/Rekabetgucu-YabancıSermaye.pdf>