REVIEW OF INNOVATION AND COMPETITIVENESS

A JOURNAL OF ECONOMIC AND SOCIAL RESEARCH

3
VOLUME
ISSUE 2
2017

RIC

REVIEW OF INNOVATION AND COMPETITIVENESS

A JOURNAL OF ECONOMIC AND SOCIAL RESEARCH

3
VOLUME
ISSUE 2
2017

Editorial address

Juraj Dobrila University of Pula
Faculty of economics and tourism "Dr. Mijo Mirković"
Zagrebačka 30, 52100 Pula (Croatia)
+385 (0)52 377-047, fax: +385 (0)52 377-013
e-mail: katarina.kostelic@unipu.hr

The Journal is published quarterly.
Annual subscription: 200 HRK.
Journal is published with the help of Ministry of science and education.

Design

Koncept, Pula

Print

Grafika Režanci, Režanci

Copies

150

ISSN 1849-9015

CONTENTS

THE LONG-RUN EFFECT OF INWARD AND OUTWARD FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH: EVIDENCE FROM DEVELOPING ECONOMIES

Waqar Ameer, Helian Xu

(1) School of Economics and Trade, Hunan University, Yuelushan, Changsha, Hunan Province, People's Republic of China
(2) School of Economics and Trade, Hunan University, Yuelushan, Changsha, Hunan Province, People's Republic of China

Waqar Ameer
School of Economics and Trade, Hunan University
Yuelushan, Changsha, Hunan Province, People's Republic of China
waqar.ameer@yahoo.com

Article info
Paper category: Original Scientific Paper
Received: 18.5.2017.
Accepted: 19.7.2017.
JEL classification: C23, F21, F23

ABSTRACT

In this paper, we investigate impact of inward and outward foreign direct investment on economic growth in developing economies over time period 2005-2014 annually. From 2005-2014, had inward and outward foreign direct investment had significant long-term effects on economic growth in developing countries. In this paper, we have used a different approach to examine the impact of FDI outflows and inflows on economic growth using Ordinary Least Squares (OLS) and Generalized Method of Moments (GMM) on the basis of macroeconomics panel data in developing economies over time span 2005-2014 annually. Our findings are as follows: (1) there is positive and significant impact of foreign direct investment outflows and inflows on economic growth in the long run among developing economies and (2) The positive and significant effects of FDI inflows and outflows on economic growth are highly robust by applying different econometric techniques (3) From our econometric results, we infer that control variables play significant role in defining exact relationship between inward FDI, outward FDI and economic growth. The control variables should be relevant and related with the econometric model to derive accurate relationship between inward FDI, outward FDI and economic growth.

Keywords:
Outward FDI; Inward FDI; GMM; Endogeneity; Panel data

1. INTRODUCTION

Foreign Direct investment (FDI) outflows from developing countries have grown faster in last thirty years than those from developed countries. According to United Nations Conference on Trade and Development (UNCTAD) data, the share of developing countries in total world FDI outflows increased more than thirty-fold from 0.5% in the early 1970s to about 16% in 2008. FDI outflows from developing countries reached approximately 300 billion US dollars in 2008, which is more than three times the value of world FDI outflows in 1970.[1] Developing countries' outward foreign direct investment flows have reached $426 billion, a record 31 per cent of the world total outflows (UNCTAD, 2013).

The relationship between foreign direct investment and economic growth has been subject of large academic literature over last decades. Borensztein et al. (1998) analyze effect of FDI on economic growth based on following periods 1970-1979 and 1980-1989.They concluded that FDI effect economic growth positively and FDI and domestic investment are complementary. Bengoa and Sanchez-Robles (2003) conclude that FDI influenced economic growth positively only when these countries have sufficient human capital, liberalized markets and economic stability using panel data of 18 countries in Latin America. Soltani and Ochi (2012) found causal relationship between economic growth and FDI in Tunisia using data for time span 1975-2009 in Tunisia. They concluded that FDI causes economic growth significantly. De Mello (1997) concluded that effects of FDI on economic growth of the host country depends on the degree of efficiency of local firms. The long run growth effects depend on rate of time preference and on productivity of domestic capital and foreign capital as well as degree of complementary behavior between domestic and foreign capital.

Recent studies by Herzer (2008) for industrialized countries suggest significant and positive effect of FDI outflows on domestic output in the long-run. The effects of inward and outward FDI may differ between developed and developing countries. Firstly, Financial markets are under developed in many developing countries and many firms do not have access to foreign capital markets in developing countries, developing country multinational companies are generally more likely to face financial constraints than developed country multinationals. Secondly, FDI outflows can reduce domestic capital, and thus reduce domestic output, when outward investors have scarce domestic resources. Thirdly, Ability to absorb knowledge from abroad depends on absorptive capacity of investing firm, firms with low levels of technological capacity are likely to be unable to effectively access knowledge through FDI outflows (UNCTAD, 2006).

Anwar and Sun (2011) found that FDI and domestic capital have positive and significant effects on economic growth. Adams (2009) analyzed effects of FDI on

1 The figures are based on data from the UNCTAD FDI database (http://stats.unctad.org/FDI/ReportFolders/reportFolders.aspx)

economic growth in Sub-Saharan Africa and found that FDI is positively and significantly correlated with economic growth. Azman-Saini et al. (2010) explored relationship between FDI and economic growth and concluded that FDI has no direct effects on output growth. Tang et al. (2008) found that there is uni-directional causality running from FDI to economic growth in China, while causal relationship between domestic capital and economic growth is bilateral. Here in this research study, we will analyze impact of inward and outward FDI on economic growth in developing economies. Best to our knowledge, no previous studies have tried to find the impact of FDI outflows and inflows on economic growth in developing economies. Thus, we have tried to bridge the gap in the previous research studies by exploring impact of FDI outflows and inflows on economic growth in developing countries. Therefore, we have found it interesting to find impact of FDI outflows and inflows on economic growth in developing economies by introducing interesting and new research findings in the existing research literature.

In this paper, we examine the impact of FDI outflows and inflows on economic growth using Ordinary Least Squares (OLS) and Generalized Method of Moments (GMM) on the basis of macroeconomics panel data in developing economies over time span 2005-2014 annually. Our findings are as follows: (1) there is positive and significant impact of foreign direct investment outflows and inflows on economic growth in the long run among developing economies and (2) The positive and significant effects of FDI inflows and outflows on economic growth are highly robust by applying different econometric techniques (3) Governance indicators show significant and negative effects on economic growth by applying different techniques as well as control variables show significant effects on economic growth in developing economies.(4) From our econometric results, we infer that control variables play significant role in defining exact relationship between inward FDI, outward FDI and economic growth. The control variables should be relevant and related with the econometric model to derive accurate relationship between inward FDI, outward FDI and economic growth.

The paper is organized as follows: Section 2. describes Data and Sample Selection; Section 3. explains Econometric model; Section 4. Estimation Method; Section 5. Empirical Results and Section 6. Conclusion

2. DATA AND SAMPLE SELECTION

In this study, we have used net OFDI (% GDP), IFDI (% GDP), Gross capital formation (% GDP), Gross domestic savings (% of GDP), trade (% GDP), Inflation; GDP deflator (annual %), GDPG (annual %), Labor force; total, Governance and GDP deflator (base year varies by country). IFDI, OFDI and GDP are measured in current US dollars. GDP Growth (GDP) is used proxy for economic growth. Inflation, GDP Deflator (annual %) is used proxy for inflation to measure macroeconomic in-

stability. DI is the domestic investment of country i in year t; IFDI is foreign direct investment inflows of the country i in year t; OFDI is outward foreign direct investment of the country i in year t; and ε_{it} is the error term. The starting period of this data set is determined by the earliest available data. We have used net OFDI rather than the gross OFDI because the gross inward and outward FDI figures reflect the sum of the absolute outflow and inflow values in the balance of payment financial accounts and thus do not take into account disinvestment. Because the net inflows and outflows have negative values in some years, it is not possible to use logarithms. Thus, it is common practice in research to use net FDI as a percentage of the GDP to derive economically interpretable results. Data on the net FDI outflows as a percentage of the GDP is taken from the UNCTAD FDI database. GDP, trade (% GDP), GDPG (% annual), gross capital formation (% GDP), Labor force; total, Inflation, GDP deflator (annual %), Governance and the GDP deflator are taken from World Bank, World Development Indicators and World Governance Indicators Database.

Table 1.: Summary Statistics (2005-2014)

Variables	No. of observations	Mean	Standard Deviation	Minimum	Maximum
GDP	800	5.018	4.162	-14.8	34.5
Lag of GDP	720	5.151	4.282	-14.8	34.5
IFDI	800	5.058	5.419	-5.977	45.273
OFDI	800	.8809	2.543	-4.655	33.667
GOV	800	0	1	-2.385	2.844
INFLATION	800	7.241	8.625	-27.632	103.82
TRADE	800	84.324	32.416	22.105	203.85
Domestic Investment	800	24.537	8.202	3.553	65.72

Source: authors' results
Note: The variables are Lagged GDP (Previous year GDP Growth), IFDI (Inward FDI), OFDI (Outward FDI), Trade, Inflation, GOV(Governance), Trade Openness (Trade), GDP (GDP Growth), and Domestic Investment

This study uses a governance dataset compiled by Worldwide Governance Indicators (WGI) over time span 2005-2014 annually for six dimensions of governance, i.e., Control of corruption, Government Effectiveness index, Political Stability and Absence of Violence, Regulatory Quality index, Rule of Law, and Voice and Accountability (Kaufmann, Kraay, and Mastruzzi, 2007). The Control of Corruption index captures perceptions of corruption including both petty and grand forms of corruption. The Government Effectiveness index captures the quality of bureaucracy, the competency of civil servants and government's commitment to policies. Political stability and absence of violence measures perceptions of likelihood of social unrest, terrorism, violent demonstrations, and security risk rating, etc. The Regulatory

Quality index measures price controls, inadequate bank supervision and perceptions of burdens imposed by excessive regulations such as foreign trade, business development etc. The rule of law index captures enforceability of contracts and the effectiveness of judiciary. Voice and Accountability captures different aspects of political process, civil liberties and independence of the media.

Table 2.: Correlation matrix: Governance indicators

	Control of Corruption	Government Effectiveness	Political Stability	Regulatory Quality	Rule of Law	Voice and Accountability
Control of Corruption	1.0000					
Government Effectiveness	0.8532	1.0000				
Political Stability	0.6293	0.5339	1.0000			
Regulatory Quality	0.7973	0.8921	0.5182	1.0000		
Rule of Law	0.9058	0.8900	0.6402	0.8319	1.0000	
Voice and Accountability	0.7227	0.6283	0.4924	0.6851	0.6679	1.0000

Source: Authors' results

The correlation matrix for governance indicators are displayed in Table 2. Globerman and Shapiro (2002) have illustrated that these indices are highly correlated with each other; therefore, it is very difficult to use all in single regression model. From an econometric point of view, the high correlation between the variables can cause multicollinearity and might reduce the extent to which the relevance of each individual governance indicator can be measured. Daude & Stein (2007) note that the standard solution is to group the variables into one aggregate component that measures similar dimensions. As a result, we follow Globerman and Shapiro (2002) by extracting the first principal component of six governance indicators by employing factor analysis. As displayed in Table 1, the governance indicator is used in our econometric model ranges from -2.38547 to 2.844429. The observed mean value of 0 and standard deviation is 1.0 is very similar with Globerman and Shapiro (2002) estimates. All independent variables are drawn from the World Development Indicators (WDI) and World Governance Indicators (WGI) database.The countries included are Afghanistan, Albania, Angola, Armenia, Azerbaijan, Bahamas, The, Bangladesh, Belarus, Belize, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Chile, China, Colombia, Congo, Rep., Costa Rica, Cote d'Ivoire, Dominican Republic, Egypt, Arab Rep., El Salvador, Ga-

bon, Georgia, Ghana, Guatemala, Guinea, Guinea-Bissau, Honduras, India, Indonesia, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kyrgyz Republic, Lao PDR, Lebanon, Macao SAR, China, Macedonia, FYR, Malawi, Malaysia, Mali, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Nicaragua, Niger, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Romania, Russian Federation, Senegal, South Africa, Sri Lanka, St. Lucia, Thailand, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Uganda, Ukraine, Uruguay, Vietnam. Some of the developing countries that are not included because of missing and non-availability of data.

3. ECONOMETRIC MODEL

In this section, we construct the econometric model and explain it in detail. Following previous studies and economic intuition, we formulate an econometric model where we assume that level of economic growth depends upon the level of economic growth in the previous years, on outward FDI, inward FDI and a list of control variables that captures economic conditions in developing economies. $_{i,t}$ is a vector of control variables. We have added this list of control variables, namely, Governance (GOV), Domestic investment (DI), Inflation and Trade. We consider Governance (GOV) very important control variable, given that pivotal and significant role of governance at the macroeconomic level. Thus, we consider Governance as very important factor of economic growth.

$$\mathbf{GDP}_{i,t} = \alpha_0 + \alpha_1 \mathbf{Lagged\ GDP}_{i,t-1} + \alpha_2 \mathbf{IFDI}_{i,t} + \alpha_3 \mathbf{OFDI}_{i,t} + \alpha_4 \mathbf{GOV}_{i,t} + \alpha_5 X'_{i,t}\,\beta + \varepsilon_{1it} \quad (1)$$

$$\varepsilon_{i,t} = \eta_i + \upsilon_{i,t} \ldots (2)$$

where $i = 1, 2, 3,\ldots,N$; $t = 1, 2, 3,\ldots T$, i is the home country, t is the time, α_s and β are unknown parameters to be estimated, η is the unobserved country-specific effects, and ε is the random disturbance term. The primary interest of our analysis is the sign and magnitude of the estimated coefficient of FDI inflows (IFDI) and outward FDI (OFDI). The control variables are selected based on existing research literature. The past values of economic growth are expected to have positive effects on current economic growth because it may be a sign of good and healthy investment environment. Each country's economic stability plays significant role in economic development. Macroeconomic instability is measured by inflation rate and is generally considered to have a negative association (Greene and Villanueva, 1991; Serven and Solimano, 1993; Oshikoya, 1994; Ndikumana, 2000).

The relationship between economic growth and outward foreign domestic investment as well as economic growth and foreign direct investment inflows, has been subject of large academic research over the past few decades. Nguyen and Nguyen (2010) have identified bi-directional relationship between FDI and economic growth in which FDI promotes economic growth and, in turn, economic growth is regarded as tool to attract

FDI. Tsai (1994) applied a simultaneous equation system to examine bi-directional relationship between FDI and economic growth for 62 countries between 1975-1978 and 51 countries for period 1983-1986.His work supports that two-way relationship exists between FDI and economic growth. Anwar and Nguyen (2010) study bi-directional relationship between economic growth and FDI in 61 provinces of Vietnam over time span 1996-2005.They support view that two-way relationship between FDI and economic growth exists in Vietnam and explored relationship between FDI and economic growth across seven regions of Vietnam. The empirical results suggest that bi-directional relationship exist between FDI and economic growth only in four regions.

Anwar and Sun (2011) have also shown that foreign direct investment and domestic capital have positive significant impact on economic growth. Adams (2009) analyzed that impact of FDI on economic growth in Sub-Saharan Africa and found that FDI and economic growth are positively and significantly correlated with each other. Azman-Saini et al. (2010) found linkage between FDI and economic growth and proved that FDI by itself has no positive direct effect on output growth. On the contrary, Tang el al. (2008) found that there is one-way causality from FDI to economic growth in China, while relationship between domestic investment and economic growth is bilateral.

4. ESTIMATION METHOD

We use the System-Generalized Method of Moments (GMM) one-step and two-step estimator developed by Arellano and Bover (1995) and Blundell and Bond (1988) for our estimates. The Arellano-Bover/Blundell-Bond estimator is referred to as A-B-B estimator. GMM is generally used to study dynamics of adjustment using samples with relatively large cross-sections and short time periods. In order to measure the effects of FDI inflows and FDI outflows on economic growth in the home country, this research study uses the system-GMM estimator developed by Arellano and Bover (1995) and Blundell and Bond (1998), which yield consistent and efficient estimates by addressing two key econometric issues.

Considering equation (1): this includes one of the explanatory variables of the lagged level of economic growth. Firstly, the presence of a lagged dependent variable would yield biased estimates because ordinary least square estimates (OLS) leads to auto-correlation because of the correlation between error terms and lagged dependent variable (i.e., explanatory variable). Using ordinary least squares (OLS) would make estimations inconsistent and bias the coefficient of lagged terms upwards, while using the fixed-effects would cause a downward bias in estimated results. The system-GMM estimator controls for unobserved country-specific factors and the estimated coefficients would not be biased from an omitted variable. Secondly, FDI inflows and FDI outflows are endogenous and jointly determined with economic growth. Thus, there is a two-way causality running between economic growth and FDI inflows as well as economic growth and outward FDI. It is very difficult to find appropriate instrument for inward FDI and

outward FDI and thus system GMM estimator resolves the endogeneity issue by using instruments based on lagged values of dependent and independent variables.

To resolve these issues, Arellano and Bond (A-B) (1991) recommend a first difference A-B GMM estimator. One advantage of this is that endogenous regressors and the lagged dependent variable can be instrumented using its lagged levels. The other advantage is that it also removes fixed country-specific effects by taking first differences of Equation (1), thus removing individual specific effects, as reported below in Equation (3).

$$GDP_{i,t} - GDP_{i,t-1} = \alpha_1(GDP_{i,t-1} - GDP_{i,t-2}) + \alpha_2 (IFDI_{i,t} - IFDI_{i,t-1}) + \alpha_3(OFDI_{i,t} - OFDI_{i,t-1}) + \alpha_4 (GOV_{i,t} - GOV_{i,t-1}) + \beta'(X_{i,t} - X_{i,t-1})(\upsilon_{i,t} - \upsilon_{i,t-1}) + \varepsilon_{i,t} \ldots . \quad (3)$$

Blundell and Bond (1998) point out that the first-differenced GMM estimator developed by Arellano and Bond (1991) has poor finite sample bias and poor precision when lagged levels of series are weak instruments for the first differences, specifically for variables that are close to a random walk. The system-GMM model overcomes this problem by combining in one system the regression in differences with the regression in levels under the assumption. In Equation (3), given assumption of no autocorrelation between error terms and regressors or regressors and error terms, the minimum lag level of dependent variables must be two or greater.

A key limitation of the first difference GMM estimator is that it does not necessarily remove first order serial correlation in the residuals because instruments used to control endogeneity are weakly exogenous in the regression. Thus, in our study, we use one step and two-step system-GMM to control for weak instrument problems by using a level equation to obtain a system of two equations. The first equation includes instruments in first differences, while the second equation includes instruments in levels. By inclusion of the second equation, the variables in the first differences are instruments for variables in levels, which make estimates more efficient and consistent. The use of two-step GMM makes standard covariance matrix robust to panel-specific autocorrelation and heteroscedasticity. For testing the validity of the one step and two-step system-GMM model, the system-GMM estimator checks for validity of instruments using the Sargan/Hansen test for over-identifying restrictions. The second-order serial correlation of the differenced error term is also tested for the null hypothesis that there is no serial correlation.

5. EMPIRICAL RESULTS

5.1. OLS Results

Some studies employ cross-sectional regressions to test the relationship between FDI inflows, FDI outflows and economic growth. This study starts with cross-sectional analysis in order to test relationship between FDI inflows, FDI outflows and economic growth over time span 2005 to 2014 annually. The OLS cross-sectional results are reported in Table 3.

Table 3.: OLS results

Dependent Variable : Domestic Investment/GDP: 2005-2014 (OLS)							
Independent variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Lag of GDP	.3555***	.3584***	.3597***	.3664***	.3574***	.3606***	.3597****
	7.17	7.33	7.28	7.48	7.17	7.36	7.34
IFDI	.0643**	.0634**	.0565*	.0638**	.0646**	.0604*	.0663**
	1.95	1.94	1.70	1.94	1.96	1.84	2.00
OFDI	.1984*	.1919*	.2061*	.1795	.2047*	.1990*	.1758
	1.69	1.66	1.69	1.60	1.70	1.69	1.54
GOV	-.4794***						
	-2.65						
Control of corruption		-.6856***					
		-2.82					
Government effectiveness			-.6922**				
			-2.20				
Political stability				-.4431**			
				-2.12			
Regulatory quality					-.7973***		
					-2.48		
Rule of law						-.6665***	
						-2.36	
Voice and accountability							-.4886***
							-2.47
INFLATION	.0342***	.0363***	.0351***	.03818***	.0330**	.0364***	.0369***
	2.34	2.54	2.40	2.61	2.25	2.49	2.51
TRADE	-.0033	-.0038	-.0032	-.0018	-.0040	-.0039	-.0052
	-0.75	-0.85	-0.72	-0.38	-0.89	-0.86	-1.13
Domestic Investment	.0747***	.0720***	.0745***	.0727***	.0723***	.0762***	.0666***
	3.51	3.50	3.40	3.56	3.40	3.53	3.27
Constant	.7811	.5426	.5465	.4427	.7251	.4555	.9687***
	1.52	1.04	0.97	0.81	1.38	0.81	1.90
No of Observations	720	720	720	720	720	720	720
R-squared	0.78	0.77	0.7750	0.7767	0.78	0.77	0.7750
VIF	2.40	2.39	2.41	2.31	2.41	2.42	2.26

Source: Authors' results

Note: System-GMM is applied for estimation. The t-statistics are in brackets. *,** and *** indicate 10%, 5%, and 1% level of significance respectively. ar1 and ar2 are tests for first and second order serial correlation, respectively. The variables are Lagged GDP (Previous year GDP Growth), IFDI (Inward FDI), OFDI (Outward FDI), Trade, Inflation, GOV(Governance), Trade Openness (Trade), GDP (GDP Growth), and Domestic Investment.

Table 3. OLS cross-sectional results show that estimated coefficient of outward FDI is positive and significant at 10 % level of significance across columns (1) -(7). OLS results show that estimated coefficient of FDI inflows have also positive and significant at 5 % and 10 % level of significance. The positive and significant effects of FDI inflows and outflows on economic growth remain unchanged using aggregate governance and individual governance indicators along with other control variables, as reported in Table 3 in models 1-7. The results show that lagged value of GDP (Previous year of economic growth) has strongly positive and significant effects on current GDP (current year of economic growth). Across models 1-7 in Table 3, our general findings show that economic growth in previous years have consistently highly positive and significant effects on current economic growth, particularly at the 1 %, 5 % and 10 % level of significance, and a 1% increase in economic growth in previous years increases current economic growth in range of 35.55% - 36.64%. As results reported in Table 3, a one percent increase in the lagged dependent variable (economic growth in previous years) leads to an increase in current economic growth by 35.55% in model 1, 35.84% in model 2, 35.97% in model 3, 36.64% in model 4, 35.74% in model 5, 36.06% in model 6, and 35.97% in model 7. The other control variables, i.e. (domestic investment and inflation) have positive and highly significant effects on economic growth but trade have insignificant effects on economic growth. It implies from statistical results that increase in domestic investment stimulates economic growth as well as inflation motives economic growth positively. Indeed, the cross-sectional regression results show that there is a strong positive relationship between FDI inflows and its economic growth as well as outward FDI and economic growth are strongly positively associated. Yet, cross-sectional analysis ignores time-series fluctuations and only tests the relationship between outward FDI, inward FDI and economic growth in the long run. Such econometric methodology cannot capture or control for unobserved country-specific effects that can vary across countries and may be correlated with inward FDI and outward FDI.

5.2. GMM-One Step

Table 4. contains the principal empirical result findings and reports results for one step System GMM in columns (1) -(7). Across columns (1) -(7) in Table 4, our general result findings are that, in all cases, FDI inflows has consistently positive and significant effects on economic growth particularly at 5 % and 10 % level of significance, a 1% increase in FDI inflows increases economic growth in range of 18.54 % - 22.36% in models (1) -(7). Our general result findings are that, in all cases, FDI outflows have consistently positive and significant effects on economic growth particularly at 5% and 10 % level of significance, a 1% increase in FDI outflows increases economic growth in range of 73.25% - 76.70% across

columns (1) -(7) in Table 4. Our result findings show across models (1) -(7) in Table 4, in all cases, Governance have significant and negative effects on economic growth. Our result findings show that Governance is negatively associated with economic growth. Perhaps this negative relationship between Governance and economic growth may be due to weak and poor governance indicators, i.e. weak control of corruption; government ineffectiveness; poor law and order; Political instability etc. Governance indicators should be strong enough to offset negative effects on economic growth in the long run and have positive and significant effects on economic growth as a result stimulate economic growth. Strong Governance indicators can result in increased FDI inflows and outflows and stimulate economic growth.

Table 4.: GMM-One Step

Dependent Variable : Domestic Investment/GDP: 2005-2014 (one step System- GMM)							
Independent variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Lag of GDP	.1495**	.1455**	.1711***	.1404**	.1500**	.1526**	.1431***
	2.30	2.26	2.64	2.25	2.29	2.37	2.31
IFDI	.2164**	.2170**	.1854*	.2236**	.1937**	.2017**	.2140**
	2.10	2.15	1.75	2.11	1.91	1.97	2.16
OFDI	.7388***	.7503***	.7325***	.7670***	.7573***	.7567***	.7446***
	5.09	5.04	4.90	4.95	4.95	4.99	5.25
GOV	-.8027***						
	-2.51						
Control of corruption		-1.148***					
		-2.44					
Government effectiveness			-1.0879**				
			-1.91				
Political stability				-.7024**			
				-2.11			
Regulatory quality					-1.307***		
					-2.48		
Rule of law						-1.232***	
						-2.52	
Voice and accountability							-.7576**
							-1.92
INFLATION	.0454***	.0465***	.0487***	.0482***	.0469***	.0471***	.0483***
	2.99	3.14	3.12	3.05	2.97	3.07	3.15
TRADE	-.0138**	-.0150**	-.0130**	-.0127*	-.0140**	-.0143**	-.0173***
	-2.24	-2.36	-2.17	-1.73	-2.32	-2.30	-2.59
Domestic Investment	.0984**	.0959**	.1004**	.0979**	.1013**	.1048***	.0911**
	2.30	2.35	2.21	2.37	2.38	2.39	2.35
Constant	.7953	.4155	.3422	.3748	.5648	.1394	1.0792
	0.88	0.43	0.33	0.35	0.63	0.13	1.20
No of Observations	720	720	720	720	720	720	720

Dependent Variable : Domestic Investment/GDP: 2005-2014 (one step System- GMM)							
ar1(p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ar2(p-value)	0.209	0.210	0.237	0.198	0.199	0.207	0.204
Sargan tests(p-value)	0.145	0.136	0.145	0.154	0.103	0.143	0.174
Difference in Hansen(p-value)	0.913	0.896	0.938	0.925	0.858	0.921	0.949

*Source:*Authors' results
Note: System-GMM is applied for estimation. The t-statistics are in brackets*,** and *** indicate 10%, 5%, and 1% level of significance respectively. ar1 and ar2 are tests for first and second order serial correlation, respectively. The variables are Lagged GDP (Previous year GDP Growth), IFDI (Inward FDI), OFDI (Outward FDI), Trade, Inflation, GOV(Governance), Trade Openness (Trade), GDP (GDP Growth), and Domestic Investment.

As results reported in Table 4., the estimated results for FDI inflows is statistically significant and positive at the 1% level of significance, which complies with prior research studies. The estimated coefficients are stable and robust with different model specifications. From our findings, in all cases, FDI inflows have consistently significant and positive impacts on economic growth at the 1% level of significance. Regarding IFDI in Table 4, a one percent increase in FDI inflows lead to increase in economic growth by 21.64% in model 1, 21.70% in model 2, 18.54 % in model 3, 22.36% in model 4, 19.37% in model 5, 20.17 % in model 6, and 21.40 % in model 7. From our findings, in all cases, FDI outflows have consistently significant and positive impacts on economic growth at the 1% level of significance. Regarding OFDI in Table 4, a one percent increase in FDI inflows lead to increase in economic growth by 73.88% in model 1, 75.03% in model 2, 73.25% in model 3, 76.70% in model 4, 75.73 % in model 5, 75.67 % in model 6, and 74.46 % in model 7.The positive and significant effects of outward and inward FDI on economic growth still remain unchanged using the aggregate governance variable and individual governance indicators along with other control variables, as displayed in Table 4. in models 1-7.

5.3. GMM-Two Step

As results reported in Table 5., the estimated results for outward FDI is statistically significant and positive at 5 % and 10 % level of significance. The estimated coefficients are stable and robust with different model specifications. From our findings, in all models, outward FDI has significant and positive effects on economic growth at the 10% level of significance. Regarding OFDI in Table 5, a one percent increase in outward FDI increases economic growth by 75.14% in model 1, 75.94% in model 2, 74.75% in model 3, 77.30 % in model 4, 76.89 % in model 5, 77.06 % in model 6 and 74.87% in model 7. The significance of positive relationship between outward FDI and economic growth remains unchanged, even after using aggregate and individual governance indicators along with independent and control variables in Table 5. in models 1-7.

Regarding IFDI in Table 5., a one percent increase in FDI inflows increases economic growth by 20.48 % in model 1, 20.48% in model 2, 16.62% in model 3, 21.92% in model 4, 17.82% in model 5, 18.62% in model 6 and 21.33% in model 7. The positive and significant effects of FDI inflows and outflows on economic growth still remain unchanged using the aggregate governance variable and individual governance indicators along with other control variables, as displayed in Table 5 in models (1) -(7).

Now, we discuss other two very important variables in our model: economic growth and governance. Economic growth in previous years (lagged dependent variable) have positive and significant effects on current economic growth in all models. The result findings displayed in Table 5. show that previous year economic growth robustly enhances the current economic growth rate. Across models 1-7 in Table 5, our general findings show that economic growth in previous years have consistently highly positive and significant effects on current economic growth, particularly at the 1% level of significance, and a 1% increase in economic growth in previous years increases current economic growth in range of 13.27% - 15.96%. As results reported in Table 5, a one percent increase in the lagged dependent variable (economic growth in previous years) leads to an increase in current economic growth by 13.91% in model 1, 13.27% in model 2, 15.96% in model 3, 13.43% in model 4, 14.18% in model 5, 14.16% in model 6, and 14.02% in model 7 in Table 5, we report results of seven econometric models, referred to as models 1-7, respectively. Based on equation (3), our core model specification comprises of the previous year's economic growth, IFDI, OFDI, and Governance. In order to control for endogeneity between economic growth, IFDI and OFDI, we include control variables in our econometric model. We include set of control variables, namely, Governance, inflation, trade and domestic investment, given their strong influence found in previous research studies. Domestic investment has positive and significant effects on current economic growth across all models (1) -(7) at 1 % level of significance. Inflation and Trade have also positive and significant effects on current economic growth across all models (1) -(7) at 5% and 10% level of significance. Our statistical results show that increase in domestic investment stimulates economic growth as well as Inflation and Trade have positive effects on economic growth.

Table 5.: GMM-Two Step

Dependent Variable : Domestic Investment/GDP: 2005-2014 (two step System- GMM)							
Independent variables	1	2	3	4	5	6	7
Lag of GDP	.1391**	.1327**	.1596**	.1343**	.14181**	.1416**	.14021**
	(2.06)	1.95	2.37	2.06	2.07	2.10	2.19
IFDI	.2048*	.2048*	.1662	.2192**	.1782	.1862*	.2133**
	1.82	1.81	0.161	1.93	1.47	1.75	1.97
OFDI	.7514***	.7594***	.7475***	.7730***	.7689***	.7706***	.7487***
	5.33	5.21	5.13	5.14	5.14	5.25	5.47
GOV	-.7960***						
	-2.80						
Control of corruption		-1.2466***					
		-2.70					
Government effectiveness			-1.1133**				
			-2.14				
Political stability				-.4974			
				0.159			
Regulatory quality					-1.3664***		
					-2.69		
Rule of law						-1.1260***	
						-2.59	
Voice and accountability							-.7453**
							-2.10
INFLATION	.0437***	.0459534***	.0477***	.0444***	.0442**	.0451656***	.0454***
	2.45	2.60	2.49	2.45	2.28	2.56	2.58
TRADE	-.0110391	-.0123091*	-.0092	-.01230	-.0112	-.0115*	-.0153**
	-1.62	-1.71	-1.25	-1.46	-1.51	-1.68	-2.08
Domestic Investment	.09496**	.0914**	.0972**	.0879**	.0996**	.1011**	.0854**
	2.25	2.29	2.36	2.21	2.35	2.34	2.35
Constant	.9024839	.5392	.3988	.9041	.5743	.3285	1.2359
	0.91	0.50	0.37	0.82	0.54	0.30	1.42
No of Observations	720	720	720	720	720	720	720
ar1(p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ar2(p-value)	0.280	0.268	0.305	0.269	0.278	0.277	0.285
Sargan tests(p-value)	0.145	0.136	0.145	0.154	0.103	0.143	0.174
Difference in Hansen(p-value)	0.913	0.896	0.938	0.925	0.858	0.921	0.949

Source: authors' results

Note: System-GMM is applied for estimation. The t-statistics are in brackets*,** and *** indicate 10%, 5%, and 1% level of significance respectively. ar1 and ar2 are tests for first and second order serial correlation, respectively. The variables are Lagged GDP (Previous year GDP Growth), IFDI (Inward FDI), OFDI (Outward FDI), Trade, Inflation, GOV(Governance), Trade Openness (Trade), GDP (GDP Growth), and Domestic Investment.

The Sargan test and serial correlation test results are displayed in Table 5. Across all seven models, the Sargan tests suggest that the null hypothesis of validity of instruments cannot be rejected. The serial correlation test results suggest that there are first-order serial correlations, which are usually expected, but there is no evidence of second-order serial correlation in the differenced error terms. We also report differences in Hansen tests to confirm validity of each subset of instruments in Table 5. Again, the Hansen tests do not reject the null hypothesis of the joint validity of all the instruments.

6. CONCLUSION

This paper has analyzed long run effects of inward and outward FDI on economic growth in developing economies over time span 2005-2014 annually. In this paper, we have used a different approach to examine the impact of FDI outflows and inflows on economic growth using Ordinary Least Squares (OLS) and Generalized Method of Moments (GMM) on the basis of macroeconomics panel data in developing economies over time span 2005-2014 annually. The result findings are robust by using different econometric techniques. Our findings are as follows: (1) there is positive and significant impact of inward and outward FDI on economic growth in the long run among developing economies and (2) The positive and significant effects of FDI inflows and outflows on economic growth are highly robust by applying different econometric techniques (3) Governance indicators show significant and negative effects on economic growth by applying different techniques as well as control variables show significant effects on economic growth in developing economies.(4) From our econometric results, we infer that control variables play significant role in defining exact relationship between inward FDI, outward FDI and economic growth. The control variables should be relevant and related with the econometric model to derive accurate relationship between inward FDI, outward FDI and economic growth.

Perhaps this negative relationship between Governance and economic growth may be due to weak and poor governance indicators, i.e. weak control of corruption; government ineffectiveness; poor law and order; Political instability etc. Governance indicators should be strong enough to offset negative effects on economic growth in the long run and have positive and significant effects on economic growth as a result stimulate economic growth. Strong Governance indicators can result in increased FDI inflows and outflows and stimulate economic growth. In sum, our result findings support that inward and outward FDI have positive and significant impact on economic growth in developing economies in long run. In developing economies where inward outward FDI are very high in last two decades, it is expected that FDI inward and outward FDI have significant and positive effects on economic growth in the long run. Outward and inward FDI

have increased rapidly in developing countries in last decade which strongly support our result findings. Our results strongly agree with Herzer (2011) result findings that FDI outflows have positive and significant impact on domestic output in developing economies in the long run.

REFERENCES

Adams, S., Foreign direct investment, domestic investment, and economic growth in Sub-Saharan Africa. J. Policy Model. 31, (2009): 939-949

Anwar, S., Nguyen, L.P., Foreign direct investment and economic growth in Vietnam. Asia Pac. Bus. Rev. 16, (2010): 83-202

Anwar, S., Sun, S., Financial development, foreign investment and economic growth in Malaysia. J. Asian Econ. 22, (2011): 335-342

Azman-Saini, W.N., Zubaidi Baharumshah, A., Law, S.H., Foreign direct investment, economic freedom and economic growth: international evidence.Econ. Model. 27, (2010): 1079-1089

Baltagi, B.H., Econometric analysis of panel data. 3rd ed., John Wiley & Sons Ltd, England.

Bengoa, M., Sanchez-Robles, B., 2003. FDI, economic freedom, and growth: new evidence from Latin America. Eur. J. Polit. Econ. 19, (2005): 529-545

Blackburne, E. F., & Frank, M. W., Estimation of nonstationary heterogeneous panels. Stata Journal, 7(2), (2007): 197

Borensztein, J., De Gregorio, J., Lee, J.W., How does foreign direct investment affect economic growth? J. Int. Econ. 45, (1998): 115-135

Navaretti, G. B., & Castellani, D. 2004. Does investing abroad affect performance at home? Comparing Italian multinational and national enterprises. In CEPR Working Paper.

Chakraborty, C., & Basu, P., Foreign direct investment and growth in India: A cointegration approach. Applied economics, 34(9), (2002): 1061-1073

De Mello, L.R.,. Foreign direct investment in developing countries and growth: a selective survey. J. Dev. Stud. 34, (1997): 1-34

Desai, M. C., Foley, C. F., & Hines Jr, J. R. 2005. Foreign direct investment and the domestic capital stock (No. w11075). National Bureau of Economic Research.

Feldstein, M. S. (1995). The effects of outbound foreign direct investment on the domestic capital stock. In The effects of taxation on multinational corporations (pp. 43-66). University of Chicago Press.

Herzer, D., The long-run relationship between outward FDI and domestic output: evidence from panel data. Economics Letters, 100(1), (2008): 146-149

Herzer, D., & Schrooten, M., Outward FDI and domestic investment in two industrialized countries. Economics letters, 99(1), (2008): 139-143

Herzer, D., The long-run effect of outward FDI on domestic output in developing countries. Applied Economics Letters, 18(14), (2011): 1355-1358

Hansen, H., & Rand, J., On the causal links between FDI and growth in developing countries. The World Economy, 29(1), (2006): 21-41

Im, K. S., Pesaran, M. H., & Shin, Y., Testing for unit roots in heterogeneous panels. Journal of econometrics, 115(1), (2003): 53-74

Lee, C. G., Outward foreign direct investment and economic growth: Evidence from Japan. Global Economic Review, 39(3), (2010): 317-326

Levin, A., Lin, C. F., & Chu, C. S. J., Unit root tests in panel data: asymptotic and finite-sample properties. Journal of econometrics, 108(1), (2002): 1-24

Lim, M. E. G. 2001. Determinants of, and the relation between, foreign direct investment and growth: a summary of the recent literature (No. 1-175). International Monetary Fund.

Liu, X., Burridge, P., & Sinclair, P. J., Relationships between economic growth, foreign direct investment and trade: evidence from China. Applied economics, 34(11), (2002):1433-1440

Narayan, P. K., The relationship between saving and investment for Japan. Japan and the World Economy, 17(3), (2005): 293-309

Nguyen, A.N., Nguyen, T., 2007. Foreign direct investment in Vietnam: an overview and analysis of the determination of spatial distribution. Working Paper, Development and Polices Research Center, Hanoi, Vietnam.

Pesaran, M. H., The role of economic theory in modelling the long run.The Economic Journal, (1997): 178-191

Pesaran, M. H., & Shin, Y., An autoregressive distributed-lag modelling approach to cointegration analysis. Econometric Society Monographs, 31, (1998): 371-413

Pesaran, M. H., Shin, Y., & Smith, R. J., Bounds testing approaches to the analysis of level relationships. Journal of applied econometrics, 16(3), (2001): 289-326

Ram, R., Additional evidence on causality between government revenue and government expenditure. Southern Economic Journal, (1988): 763-769

Siliverstovs, B., & Herzer, D., Export-led growth hypothesis: evidence for Chile. Applied Economics Letters, 13(5), (2006): 319-324

Soltani, H., Ochi, A., Foreign direct investment (FDI) and economic growth: an approach in terms of cointegration for the case of Tunisia. J. Appl. Finance Bank. 2, (2012): 193-207

Stevens, G. V., & Lipsey, R. E., Interactions between domestic and foreign investment. Journal of international money and finance, 11(1), (1992): 40-62

Tang, S., Selvanathan, E., Selvanathan, S., Foreign direct investment, domestic investment and economic growth in China: a time series analysis. World Econ. 31, (2008): 1292-1309

Tsai, P.L., Determinants of foreign direct investment and its impact on economic growth. J. Econ. Dev. 19, (1994): 137-163

Zhang, K. H., Does foreign direct investment promote economic growth? Evidence from East Asia and Latin America. Contemporary economic policy,19(2), (2001): 175-185

UNCTAD.2006. World Investment Report 2006. FDI from developing and transition economies: Implications for development. United Nations, New York.

UNCTAD. 2008.World Investment Report 2008. Transnational corporations and the infrastructure challenge. United Nations, New York.

UNCTAD. 2013. World Investment Report 2013 - Global value chains: investment and trade for development. United Nations, New York.

DOES COUNTRY CREDIT RATING AFFECT CURRENT DEFICIT ACCOUNT: THE CASE OF TURKEY (1992-2014)

Ahmet Gulmez, Furkan Besel, Fatih Yardimcioglu

(1) Department of Economics, Sakarya University, 54100, Turkey
(2) Department of Public Finance, Sakarya University, 54100, Turkey
(3)Department of Public Finance, Sakarya University, 54100, Turkey

Ahmet Gulmez
Department of Economics, Sakarya University
54100, Turkey

Article info
Paper category: Original Scientific Paper
Received: 18.5.2017.
Accepted: 20.6.2017.
JEL classification: E51, H62

ABSTRACT

In this study the presence and direction of the relationship between the current account deficit and credit rating index for Turkey has been tested using Gregory-Hansen co-integration test, which considers structural breaks and Toda-Yamamoto causality analysis for the period of 1992-2014. Based on the results of empirical applications, it has been concluded that both series are not stable and there is a long-term relationship between the variables. As a result of the Toda-Yamamoto method based on the Granger causality analysis, it has been determined that there is a one-way causal relationship between the variables from current account deficit towards credit rating index.

Keywords:
Account deficit; Credit rating; Gregory-Hansen co-integration test; Toda-Yamamoto causality analysis

1. INTRODUCTION

Despite the first appearance of the concept of rating in literature in 1837, in the 1980s it had become more prominent with the spread of global liberalization movements, including those in Turkey. Rating is a classification system that is used to estimate whether an organization or individual discharges its/their financial obligations on time and on the basis of the company's or individual's past and present qualitative and quantitative data (Yazıcı, 2009: 2). In other words, rating is a mathematical expression of the risk that you carry while you allocate credit to a company or individual (Tutar *et al*., 2011: 2)

Rating can be done for companies, enterprises, banks, financial organizations, local governments, fund demanders and suppliers, and countries. This situation, what we describe as country risk, arises due to the country's declaration of financial difficulties or present and future failure of certain countries to pay the debts they owe. A high country risk increases the cost of borrowing; namely, it causes an interest increase as well as complicating a country's borrowing. However, investors abstain from countries with high levels of country risk. Therefore, rating is defined as the probability of incurring losses in relations of lending in the international arena, as a result of significant events that may occur in countries where the credit is opened (Tutar *et al*., 2011: 2).

Nowadays, the large number of rating agencies has made pre-investment rating activities almost mandatory in financial markets. The number, and importance, of rating agencies has gradually increased with increasing capital flows among countries with the concept of liberalization and increasing financial diversity in financial markets in the 1980s. In the 1990s, the transformation of capital flows into private capital movements, instead of official funds provided by multinational organizations, has further increased the importance of rating agencies in global and local financial markets (Gür and Öztürk, 2011: 71). Due to these reasons, it is expected for the rating agencies to have a guiding role for investors in the future (Karagöl and Mıhçıokur, 2012: 8).

However, in recent years, the unexpected bankruptcy of Lehman Brothers in the 2008 global financial crisis, the Enron incident, which occurred in 2001 before the 2008 crisis, Worldcom in 2002 and the Parmolat incident in 2003 have led to a questioning of the reliability of credit rating agencies. In 2008, a sudden lowering of the credit ratings of companies with a previously high credit rating was seen as an important factor in the exaggeration of the global crisis (Karagöl and Mıhçıokur, 2012: 9).

In this study the presence and direction of the relationship between the current account deficit and credit rating index for Turkey has been tested using Gregory-Hansen co-integration test, which considers structural breaks and Toda-Yamamoto causality analysis for the period of 1992-2014.

2. COUNTRY RISK (COUNTRY CREDIT RATING) AND CRITERIA OF RATING AGENCIES

International rating agencies, such as Moody's, S&P, and Fitch first started rating activities expressing a company's capacity to pay their debts and to meet the needs of investors. However, the development of financial markets contributed to the expansion of rating activities with the inclusion of the banks, insurance companies, local governments, and countries.

At first, while a country's economy wasn't taken into consideration (in case of running into debt), liberalization and development of international financing concepts in the 1980s have led to the need for addressing country's risks. Then, the country risk is an evaluation. In case of a company or an organization becoming indebted while assessing the payable capacity of its debt on time, country risk shows how the country's economic, political, and social circumstances effect paying debts what extend. Moreover, it is the possibility of the damage that can be incurred due to the issues that are considered to be under the control of the national government, even if it is a certain amount (Babuşcu, 1997: 39). Country risk is the highest degree that debtor companies can take in foreign currency because these companies do not have the ability to find more currency from the government or to convert the resources at hand.

The capacity of a country to pay its foreign debts is related to the company's foreign currency reserves. It is known that the payment of foreign debts on time is possible by closing the gap between import and export in long term, thereby increasing the country's net export. This predicts the consideration of the country's general economic structure, growth rate, and even political conditions. The country's credit worth is determined by indicators such as the country's foreign trade statistics, balance of payments, inflation rate, and debt coverage ratio. (Babuşcu, 1997: 40). Besides all these, there are subjective factors that could reveal the country's ability to repay its debts. In this case, determination of country risk is possible by a combination of social, economic, and political factors. Two types of uncertainty will be assessed at this point:

Political risk arises from the evaluation of the willingness of the countries during the payment of the foreign debts, as well as certain social and political issues that affect the payment capacity. Government policies, legal structure, and the country's position and importance in the international arena can be shown.

Economical risk is the most important factor that is considered when determining the economic risk of the countries. It is the income generation capacity of the country's economy. That is, the GNP (Gross National Product) rate of the country is the primary indicator. Change trend of GNP, investment allocations in GNP, and the ratio of public debt stock to GNP are the indicators to be considered. Another considered matter when determining the economic risk is foreign debt burden. This

rate, which is called foreign debt service ratio, refers to the comparison of total annual foreign debt payments such as interest, capital installments, and dividend to the export income of that year (Babuşcu, 1997: 43). If this rate is high, it is described as the weakness of the country's debt repayment capacity. If a country with high foreign debt uses its debt for current expenditures, such as payment of debt or payment of interest instead of investment activities that increase GNP, it will reduce government spending activities as well as leading to an increase of country risk. A country's own resources, and the way it utilizes resources effectively, are the factors taken into consideration in identifying economic risk.

Five factors that form the basis of the country's credit rating, according to S&P (www.satandardandpoors.com):

- Institutional effectiveness and political risks, reflected in the political lead.
- Economical structure and growth prospects, reflected in the economic score.
- External liquidity and international investment position, reflected in the external score.
- Financial performance and flexibility and government debt burden, reflected in the financial score
- Monetary flexibility, reflected in the monetary score

2.1. Rating symbols of rating agencies and credit rating index

Rating is a standard and objective view that helps to measure the creditworthiness of borrowers, debt repayment capacity, timely and orderly, and accordingly evaluates its role in money and capital markets formed by professionals (Yazıcı, 2009: 3). The following table shows the rating symbols of the three major rating agencies that perform professional rating activities at an international level as well as the credit rating index created by the symbols.

Table 1.: Rating symbols of rating agencies and credit rating index

Moody's	Standard & Poors	Fitch	CREDIT RATING INDEX*	
Aaa	**AAA**	**AAA**	100	Prime
Aa1	**AA+**	**AA+**	95	High grade
Aa2	**AA**	**AA**	90	
Aa3	**AA-**	**AA-**	85	
A1	**A+**	**A+**	80	Upper medium grade
A2	**A**	**A**	75	
A3	**A-**	**A-**	70	
Baa1	**BBB+**	**BBB+**	65	Lower medium grade

Moody's	Standard & Poors	Fitch	CREDIT RATING INDEX*	
Baa2	**BBB**	**BBB**	60	
Baa3	**BBB-**	**BBB-**	55	
Ba1	**BB+**	**BB+**	50	Non-Investment grade speculative
Ba2	**BB**	**BB**	45	
Ba3	**BB-**	**BB-**	40	
B1	**B+**	**B+**	35	Highly speculative
B2	**B**	**B**	30	
B3	**B-**	**B-**	25	
Caa1	**CCC+**	**CCC**	20	Substantial risks
Caa2	**CCC**	**CC**	15	Extremely speculative
Caa3	**CCC-**	**C**	10	In default with little prospect for recovery
Ca	**CC**	**CC**		
C	**C**	**C**	5	
	D	**DDD**	0	In default
		DD		
		D		

Source: Prepared by benefiting from www.standardandpoors.com , www.moodys.com and www.fitchratings.com , *http://www.tradingeconomics.com/turkey/rating

3. TURKISH APPLICATION OF CREDIT RATING AGENCIES

The relationship between Turkey and Credit Rating Agencies started in the 1990s. Turkey became a member of organizations such as the IMF, World Bank, GATT, and OECD after World War II in order to provide integration with the world. Further, it applied for full membership of the European Union in 1987. Table 2. shows the historical development of Turkey's credit rating. Turkey's credit rating was determined in 1992 as BBB by S&P, Baa3 by Moody's and its credit rating index was 57.5 (lower medium). Turkey underwent an unstable period, both politically and economically, during the 90s and this reflected in Turkey's credit rating. The 90s and the early 2000s (1993-2002 period) can be defined economically by high inflation, high public debt, high budget deficit, resistless to external shocks and short-lived coalitions, and process and military tutelage was felt; therefore, it is extremely natural that Turkey's credit rating is low. Turkey's rating from three big credit agencies (S&P, Moody's, and Fitch) from 1992 to 2002 has followed a downward trend

with fluctuation. During this period, the credit rating index fell to the level of 26.67 by decreasing. Especially in 2001, economic contraction at a 9.5% ratio, high current account deficit, and devaluation caused Turkey's credit rating to bottom out. Between 2002 and 2008, Turkey's credit rating continued its upward trend as a result of economic and political stability. As a result of the 2008 global financial crisis, Turkey's economy contracted by 4.7%. This was reflected in Turkey's credit rating and lowered its rating temporarily. Turkey grew at high rates in 2010 and continued to grow in the following years. In 2012, it was promoted to an investable country position. As of 2014, Turkey's credit rating is S&P: BB+ (Negative), Fitch: BBB- (Stable), and Moody's: Baa3 (Negative).

Table 2.: Historical development of Turkey's credit rating and credit rating index

DATE	S&P	MOOD'YS	FITCH	TURKEY'S CREDIT RATING INDEX*
04.05.1992	BBB (Stable)			
05.05.1992		Baa3		57.5
05.03.1993	BBB (Negative)			
08.10.1993		Baa3		55
14.01.1994	BBB- (Negative)			
02.06.1994		Ba3		38.75
10.06.1994			B	
19.08.1994	B+ (Stable)			
24.07.1995	B+ (Positive)			
26.09.1995			BB-	37.5
17.07.1996	B- (Negative)			
20.12.1996			B+	30
09.01.1997		Ba3		40
10.08.1998	B (Positive)			35
21.01.1999	B (Stable)			
30.11.1999		B1 (Positive)		32.5
27.04.2000			BB-	
05.12.2000	B+ (Stable)			36.67
21.12.2000		B1 (Positive)		
04.06.2001		B1 (Negative)		
07.04.2001	B- (Stable)			26.67
02.08.2001			B (Negative)	
05.02.2002			B (Stable)	
09.07.2002	B- (Negative)			26.67
10.07.2002		B1 (Negative)		

DATE	S&P	MOOD'YS	FITCH	TURKEY'S CREDIT RATING INDEX*
28.07.2003	B (Stable)			
06.08.2003			B- (Positive)	
25.09.2003			B (Positive)	31.67
16.10.2003	B+ (Stable)			
21.10.2003		B1 (Stable)		
09.02.2004			B + (Stable)	
08.03.2004	B + (Positive)			35
17.08.2004	BB - (Stable)			
25.08.2004			B + (Positive)	
13.01.2005			BB - (Stable)	
11.02.2005		B1 (Positive)		38.3
06.12.2005			BB - (Positive)	
14.12.2005		Ba3 (Stable)		
23.01.2006	BB (Positive)			47.5
27.06.2006	BB (Stable)			
10.05.2007			BB - (Stable)	40
03.04.2007	BB - (Negative)			
31.07.2008	BB - (Positive)			42.5
13.11.2008	BB - (Negative)			
17.09.2009		Ba3 (Positive)		
18.09.2009	BB - (Stable)			41.25
27.10.2009			BB - (Positive)	
03.12.2009			BB + (Stable)	
08.01.2010		Ba2 (Stable)		
19.02.2010	BB (Positive)			48.3
05.10.2010		Ba2 (Positive)		
24.11.2010			BB + (Positive)	
23.11.2011			BB + (Stable)	45
01.05.2012	BB (Stable)			47.5
20.06.2012		Ba1 (Positive)		
27.03.2013			BBB- (Stable)	
28.04.2013	BB+ (Stable)			53.3
16.05.2013		Baa3 (Stable)		
02.07.2014	BB+ (Negative)			
11.04.2014		Baa3 (Negative)		53.3
28.05.2014			BBB- (Stable)	

Source: Prepared by benefiting from www.standardandpoors.com, www.moodys.com, www.fitchratings.com, http://www.tradingeconomics.com/turkey/rating * Credit Rating Index; has been calculated as the average of grades of S&P, Moody's, and Fitch credit agencies.

It is impossible to explain Turkey's credit rating as the same in 1992 and in 2014. Even the credit rating index in 2014 is lower than the credit rating index in 1992. It is observed that rating agencies violate the criteria of objectivity by not reflecting the major economic and political differences in the development of Turkey between 1992 and 2014 when determining the credit rating. Subjective applications being widespread decrease the trust in the credit rating agencies every day and also reduce the reputation of the grade changes of these agencies that follow the market subsequently and discriminate countries in grading.

It is useful to mention the main macroeconomic indicators of Turkey for the 1990-2014 period, which credit agencies consider. In 1990, GDP in Turkey was $150 billion and income per capita was $2790. In 2014 GDP in Turkey had increased by 5.5 times and reached $800 billion, whilst income per capita increased by 3.9 times and reached $10,542 billion. Especially after 2002, Turkey has grown an average of 4.7%. In this period, wherein such a high increase in production-growth was experienced, it is impossible to explain why Turkey's credit rating was not increased sufficiently with mere economic theory. While the ratio of public debt to national income was 10.8%, it increased to 74.1% by rising steadily in 2001. Then, in 2014, it fell to 33% tending to decrease. When the criteria of the ratio of public debt to national income not exceeding 60% is considered to be in Maastricht criteria, it is observed that the ratio of public debt to national income is very low in fast-growing Turkey.

When we look at the inflation rate, it is seen that the rate of inflation in Turkey is 60.3% in 1990. In 1994, inflation rose to the highest rate of 105% and in the later years it tended to decrease, especially after 2002 as a result of acceleration of the disinflation. In 2004 it dropped to single digits, and in 2013 it was 7.5%. It cannot be explained why the credit rating of Turkey with a 70% inflation rate in 1992 and the credit rating of Turkey with a 8.9% inflation rate in 2014 are so close with mere economic theory.

In this period, when we look at the ratio of budget deficit to national income, it appears to be 2.2% in 1990, 12.2% in 2001, and 1.3% in 2014. When the criteria of the ratio of budget deficit to national income does not to exceed 3%, it is considered in Maastricht criteria; it is observed that this rate is very low in Turkey. Considering the unemployment rate, it appears to be 8.3% in 1990, 14% in 2009, and 9.9% in 2014. The rise in the unemployment rate in 2009 was caused by the reduction of Turkey's exports to the EU market due to the 2008 financial crisis. It should not be forgotten that EU countries' unemployment rates are in the double digits, higher than Turkey's unemployment rate.

Ignoring and not reflecting the economic developments between 1990 and 2014, which we explained above, in its credit rating means that Turkey has to meet its external financial needs with higher costs. It seems that the rating agencies claims that Turkey's current account deficit is high, and so it is fragile, indeed cause Turkey's current account deficit to increase by keeping Turkey's rating low. If Turkey's

credit rating had been brought to the levels it deserves, Turkey's current account deficit would have been lower, since external borrowing costs (interest rate) would be lower. Despite this, fast-growing Turkey's current account deficit being at a reasonable rate is extremely normal.

Credit rating agencies are looking at political indicators alongside economic indicators when assessing countries. Turkey has seen economic and political stability in the last 12 years.

In recent years, when the political stability and macro-economic indicators are positive in Turkey credit rating agencies keep the country rating low on the grounds that the country's current account deficit being high. Not forgetting the fact that current account deficit being high lowering the credit rating, the fact that keeping the credit rating low increasing the current account deficit should not be ignored.

3.1. Comparison of Turkey with countries with high credit ratings

When we compare Turkey with some other countries that have higher credit note given by the three agencies, interesting results emerge.

Table 3.: Comparison of Turkey with some credit ratings and macro-economic indicators of member and non member states (2014)

Countries	S&P	Fitch	Moody's	Quota per Capita GDP ($)	Growth Rate	Inflation Rate	Unemployment Rate	Current Account Deficit/ GDP	Budget Deficit/ GDP	Public Debt/ GDP
Turkey	BB+	BBB-	Baa3	10542	2.86	8.9	9.9	-5.7	-1.3	33
Spain	BBB	BBB+	Baa2	30262	1.38	-0.1	2.7	0.8	-5.8	97.7
Ireland	A-	A-	Ba1	53313	4.79	0.2	13.0	6.2	-4.1	109.7
Italy	BBB-	BBB+	Baa2	34960	-0.42	0.2	12.2	1.9	-3	132.1
Iceland	BBB-	BBB	Baa3	52111	1.87	2.0	5.2	3.6	-0.2	86.4
Lithuania	A-	A-	Baa1	16037	2.36	0.6	11.2	0.1	-0.7	40.9
Mexico	BBB+	BBB+	A3	10361	2.12	4.0	4.8	-2.1	-4	30.7
Romania	BBB-	BBB-	Baa3	9996	1.75	1.1	7.4	-0.5	-1.9	39.6
Slovak R.	A	A+	A1	18416	2.40	-0.1	14.1	0.1	-2.9	53.6
Slovenia	A-	BBB+	Ba1	23962	2.63	0.2	10.4	5.8	-4.9	80.9

Source: Prepared by benefiting from www.standardandpoors.com, www.moodys.com, www.fitchratings.org, www.worldbank.org and www.oecd.org

The credit rating of Spain, which is a member of EU, is better than Turkey, according to all three agencies. It is not possible to say the same thing about Spain's macroeconomic indicators. While Turkey's economy grew by 2.86%, Spain's economy grew by only 1.38%. Especially when considering that the unemployment rate, the ratio of budget deficit to national income, and ratio of public debt to national income are extremely poor. Turkey's unemployment rate is 9.9%, but in Spain it is 26.7%, Turkey's ratio of budget deficit to national income is 1.3%, but in Spain it is 5.8%, the ratio of public debt to national income is 33% in Turkey, but in Spain it is 97.7%. Even these indicators show that Turkey's credit rating should be a few steps higher than that of Spain.

When we compare Turkey with Ireland: unemployment rate in Ireland is 13.0%, ratio of budget deficit to national income is 4.1%, and public debt to national income is 109.7%. Therefore, it is worse than Turkey. When we compare Turkey with Italy: the growth rate in Italy is -0.42%, the unemployment rate is 12.2%, the ratio of budget deficit to national income is 3%, and the ratio of public debt to national income is 132.1%. It is also worse than Turkey.

In Mexico, which Moody's rates as A3, per capita income is $10361, growth rate is 2.12%, and the ratio of budget deficit to national income is 4%. This country's macroeconomic indicators are worse than Turkey's too. In Romania, in which credit rating is higher than Turkey, per capita income is $9499, growth rate is 3.5%, the ratio of budget deficit to national income is 3%, and public debt to national income is 37.1%; Romania's data is worse than Turkey's data too.

In Slovakia, which three rating agencies gave grade A, growth rate is 2.4%, unemployment rate is 14.1%, the ratio of budget deficit to national income is 2.9%, and public debt to national income is 53.6%. Its data is worse than Turkey's. Yet in Slovenia, which has an A grade, growth rate is 2.63%, the unemployment rate is 10.4%, the ratio of budget deficit to national income is 4.9%, and public debt to national income is 80.9%. Again, the data is worse than Turkey's.

As we have demonstrated in comparison above, while Turkey is better than other countries, in terms of many macro-economic indicators, its credit rating is being kept low only on the grounds of the high current account deficit. In this study, the relationship between the credit rating and the current account deficit, justified by credit rating agencies for Turkey to be a fragile country, is being investigated.

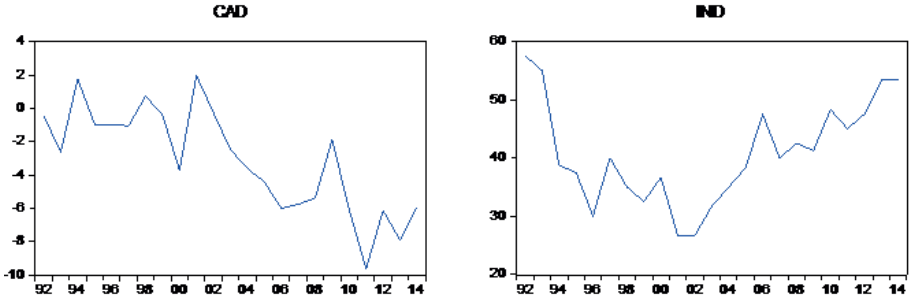
4. DATA SET, ECONOMETRIC METHOD AND ANALYSIS

4.1. Data and methodology

In this study, in order to determine the relationship between current account deficit and credit rating, the series comprised of annual data of current account deficit/GDP (CAD) for the period of 1992-2014 and credit rating index (IND) has been

used. CAD data set was obtained from the World Bank statistics page. We designed the IND data set by utilizing the grades from Credit Rating Agencies (Table 2.). CAD and IND series used in the empirical analysis are presented in Figure 1.

Figure 1.: Course of variables



Source: Authors'

CAD and IND variables follow a fluctuating course for Turkey as of these years, as can be seen in figure 1. By just looking at the chart we can say that CAD and IND variables have opposite movements.

4.2. Econometric method

In this part of the study, we present information about the Augmented Dickey Fuller (ADF) and Phillips Perron (PP) unit root test, which will be used in econometric analysis; Gregory-Hansen co-integration test will be provided and then Toda-Yamamoto causality test will be explained, and test results will be evaluated. Empirical results were obtained using EViews 9 econometric package program.

4.2.1. ADF and pp unit root tests and results

In time series analysis, in order to avoid erroneous results arising from especially spurious regression problems, it is important for the series to be stable. In this context, before application, the Augmented Dickey Fuller and Phillips Perron unit root tests and stability of the series has been analyzed.

In the ADF unit root test, in order to test if the Y_t series contains unit root the following equation is used.

$$\Delta Y_t = \alpha_0 + \alpha_1 t + \delta Y_{t-1} + \sum_{i=1}^{N} \psi \Delta Y_{t-i} + \varepsilon_t \quad (1)$$

Δ represents the first difference processor, t represents a time trend, ε_t represents the error term, Y_t represents the used series, N represents delay number determined with Akaike Information Criterion.

An alternative hypothesis that assumes the series as stable is tested with the ADF unit root test, in return the null hypothesis that is the series is not stable. The test is based on the estimation of δ parameter and determination of its test statistics. If the test statistics are greater than the critical values in absolute value, the null hypothesis is rejected. In other words, it can be said that the series is stable.

Another method used in stability analysis is the Phillips and Perron test. Phillips and Perron (PP) have criticized the ADF test, accepting the error terms are independent and with variance. In order for the ADF test to give meaningful results, correlation should not exist between error terms and it must be determined that the error terms have constant variance for certain. These two basic assumptions of the ADF test have been extended as follows by Phillips and Perron (Tarı, 2010: 399):

$$Y_t = a_0 + a_1 y_{t-1} + u_t \quad (2)$$

$$Y_t = a_0 + y_{t-1} + a_2(t - T/2) + ut \quad (3)$$

T shows number of observations and u_t shows distribution of the error terms, and the expected value of the error terms is zero. Thus, the necessity of homogeneity assumption or absence of internal relations between error terms is eliminated by abandoning the homogeneity and independence assumptions of the ADF test (Tarı, 2010: 399). ADF and PP unit root test result are shown in Table 3..

Table 4.: ADF and PP unit root analysis results

	LEVEL			
	Constant		Constant and Trend	
	ADF	PP	ADF	PP
CAD	-2.111 (0) [0.2424]	-1.934 (2) [0.3116]	-4.207** (0) [0.0161]	-4.183** (3) [0.0170]
IND	-2.110 (0) [0.2426]	-2.164 (2) [0.2239]	-2.788 (0) [0.2155]	-2.887 (1) [0.1850]
	FIRST DIFFERENCE			
	Constant		Constant and Trend	
	ADF	PP	ADF	PP
CAD	-5.419*** (1) [0.0003]	-12.883*** (20) [0.0000]	-5.193*** (1) [0.0025]	-15.053*** (20) [0.0000]
IND	-5.224*** (0) [0.0004]	-5.232*** (1) [0.0004]	-6.359*** (0) [0.0002]	-6.358*** (0) [0.0002]

Source: Authors'
Notes: Proper length of delay in the ADF test is determined according to Schwarz information criteria. The PP test is determined according to "Barlet kernel" and bandwidth is determined according to "Newey West bandwith" method. Values in parentheses show optimum length of delay for the ADF test and bandwidth for the PP test. Numbers in square brackets show the probability (p-value) values.
**** and ** shows 1 and 5 percent meaning levels respectively.*

According to Table 4., both variables comprise unit root in level status but it becomes stable when we take its first difference.

4.2.2. Gregory-Hansen co-integration test and results

After obtaining unit root test results the co-integration test, which was developed by Gregory and Hansen (1996), allows a single structural break to be applied. Gregory and Hansen Johansen developed the co-integration test to address the structural break as internally (Arısoy, 2013: 152).

In Gregory and Hansen co-integration test that allows structural break, the presence of long-term relationship between variables is tested using three different models. These are:

Model C (Refraction on Constant):

It is specified as:

$$y_{1t} = \mu_1 + \mu_2\varphi_{t\tau} + \alpha^T y_{2t} + e_t \quad t = 1,\ldots,n \quad (4)$$

In this model, μ_1 shows the constant term and μ_2 shows the change that is brought out by refraction in constant term.

Model C/T (Refraction on Constant with Trend):

It is specified as:

$$y_{1t} = \mu_1 + \mu_2\varphi_{t\tau} + \beta t + \alpha^T y_{2t} + e_t \quad t = 1,\ldots,n \quad (5)$$

In this model, refractions in both constant term and trend are considered.

Model C/S (Regime Change):

It is specified as:

$$y_{1t} = \mu_1 + \mu_2\varphi_{t\tau} + \alpha_1^T y_{2t} + \alpha_2^T y_{2t}\varphi_{t\tau} + e_t \quad t = 1,\ldots,n \quad (6)$$

It is as stated in the model that shows refraction on constant. α_1 shows slope coefficient before refraction, α_2 shows the changes occurring after refraction (Gregory and Hansen, 1996: 103).

Structural refraction can be identified by puppet variables, mentioned below for three models:

$$\varphi_{1t} = \begin{cases} 0, & \text{if} \quad t \le [n\tau] \\ 1, & \text{if} \quad t \succ [n\tau] \end{cases} \quad (7)$$

Here τ expresses the structural refraction point with (0,1) values, $[n\tau]$ expresses the integer part of the structural refraction point (Gregory and Hansen, 1996: 102).

The minimum date for the Philips test statistics calculated for these three models (Z_α^* and Z_t^*) and Augmented Dickey Fuller test statistic (ADF^*) is the suitable refraction date for co-integration test. Test statistics are:

$$Z_\alpha^* = \inf Z_\alpha(\tau)$$
$$Z_t^* = \inf Z_t(\tau) \quad \tau \in T$$
$$ADF^* = \inf ADF(\tau)$$

(Gregory and Hansen, 1996: 106).

Test statistics determined for a proper model are compared with the table critical values and the alternative hypothesis, which shows there is a co-integration relationship between the variables with a structural refraction, is tested against the basic hypothesis of there being no co-integration between variables. Table critical values, determined by the number of variables, are located in the study of Gregory and Hansen (1996) (Tıraşoğlu and Yıldırım, 2012: 115).

In order to find out whether there is a long-term relationship between the variables under the structural refraction (because the both series are I (1)), after determining the stability levels of the series, the Gregory-Hansen co-integration test was conducted. The minimum ADF test statistics and their corresponding refraction periods are shown in Table 5.

Table 5.: Gregory-Hansen co-integration test results

Model	Refraction Period	ADF Statistics	Critical Values %1	%5
Model C	2003	-5.41*** (0)	-5.13	-4.61
Model C/T	1993	-5.04** (0)	-5.45	-4.99
Model C/S	2003	-5.48*** (1)	-5.47	-4.95

Source: Authors'
Note: Critical values were taken from Gregory and Hansen (1996: 109). Values in parentheses indicate the delay number selected by Akaike Information Criteria.

Because the minimum ADF statistic calculated for the models is greater (1% for Model C and Model C/S, 5% for Model C/T at meaning level) than critical values as absolute value, the basic hypothesis shows there is no co-integration relationship between series and cannot be accepted. Hence, according to the Gregory-Hansen test results, it is possible to say that there is a long-term relationship between current account deficit and credit rating index. Also, there is a structural refraction in 1994 for the three models. When compared with the previous years, year 1994 in Turkey is the highest year in inflation, public deficit, and current account deficit. 1994 is a year in which the inflation rate rose

to 105%, public and private sector borrowing interest rate rose to three-digit numbers, and with a 50% real interest rate, the government could not find any debt, even short-term debt. Economic crisis affecting Turkey deeply emerged in 1994. At the end of the crisis (April 5 1994), decisions and policies had begun to apply to prevent the crisis.

4.2.3. Toda-Yamamoto causality test and results

Toda and Yamamoto (1995) have developed a test whereby the causality relationship between the series can be observed without the need for prior knowledge of stability and co-integration.

For the Toda and Yamamoto test, primarily proper delay level (p) in the VAR model is determined. Then, the maximum integration degree (d_{max}) is added to p delay. In the next step, the original values of the series and the EKK model is estimated for the d_{max} delay (Büyükakın *et al.*, 2009: 111). The VAR ($p+d_{max}$) model used in Toda and Yamamoto test is identified as follows (Toda and Yamamoto, 1995: 230):

$$Y_t = \alpha_0 + \sum_{i=1}^{p+d_{\max}} \alpha_{1(i+d)} Y_{t-(i+d)} + \sum_{i=1}^{p+d_{\max}} \alpha_{2(i+d)} X_{t-(i+d)} + \varepsilon_{1t}$$

$$X_t = \beta_0 + \sum_{i=1}^{p+d_{\max}} \beta_{1(i+d)} Y_{t-(i+d)} + \sum_{i=1}^{p+d_{\max}} \beta_{2(i+d)} X_{t-(i+d)} + \varepsilon_{2t}$$

Finally, constraint is put on the variables respectively and for the p delay, the significance of these constraints is tested by applying a standard Wald test (Büyükakın *et al.*, 2009: 111). For example, if the basic hypothesis is accepted for the first equation, the result will be that there is no causal relationship from X to Y. Other causal relationships are tested in a similar way.

In this part of the study, existence and direction of the causal relationship between current account deficit and credit rating index will be analyzed using a Granger causality test, which is Toda-Yamamoto based.

Table 6.: Results of Toda-Yamamoto causality test

Basic Hypotheses	Delay Length	χ^2 Statistic
IND CAD	$(p=1) + (d_{max}=1) = 2$	0.861300 (0.6501)
CAD IND	$(p=1) + (d_{max}=1) = 2$	12.99714 (0.0015)

Source: Authors'
Note: Values in parentheses are probability values of the related test statistic. P value for the proper VAR model was determined according to Schwarz Information Criterion.

As can be seen in Table 6., while the hypothesis that shows that the credit rating index is not the Granger reason for current account deficit is accepted (0.6501), the basic hypothesis that shows current account deficit is not the Granger reason for credit rating index is rejected (0.0015). Therefore, according to Toda-Yamamoto causality analysis results, there is a one-way causal relationship between variables, and the direction of the relationship is from current account deficit to credit rating index. Changes in credit rating index have a power to be explained by past values of the current account deficit variable. In brief, while the credit rating index is affected by the current account deficit, credit rating index has no effect on current account deficit.

5. CONCLUSION

In this study, the relationship between current account deficit and credit rating index has been examined. While analyzing this relationship, a structural refracting co-integration test has been used in order to observe the seasonal effects that Turkey has faced. At the end of the unit root tests, it was determined that the series contain unit roots at their level values and, when the first differences of the series are taken, it is observed that they have become stable. Since both series are stable from the first order, existence of a long-term relationship between variables has been tested with the co-integration test and it was concluded that there is a long-term relationship between variables.

A causality test has been applied in order to determine whether past values of one of the variables has a power to explain the change in the other variable as well as the direction of this relationship. It has been obtained that there is a one-way causal relationship between variables from current account deficit to credit rating index. International credit rating agencies, as a justification for Turkey's low credit rating, emphasize that the current account deficit in Turkey is high and, therefore, the Turkish economy is fragile. In this context, it is expected for a negative relationship to come out between current account deficit and credit rating. However, as can be seen from the econometric examination done here, it is observed that there is no relationship between current account deficit and credit rating. This situation can be interpreted as the especially highlighted current account deficit situation not effecting low ratings, indeed, and credit ratings given based on subjective ratings. For example, in 2014, although Turkey's current account deficit has shown a serious fall, international credit rating agencies haven't made any changes in Turkey's credit rating.

The credit rating of Turkey, which is in low development effort (shown low), causes the country to find external sources with higher costs and development efforts to slow down. Credit rating agencies should provide guidance to investors. However, they slow down some countries' developments with their grades (as in Turkey) and this causes decreasing trust in such institutions. Therefore, credit rating agencies to be effective in global terms; they need to observe objectivity, transparency, and neutrality principles when giving grades to countries.

REFERENCES

Arısoy, İ., *"Testing for the Relationship Between Industrial Sector and Economic Growth in the Context of Kaldor Hypothesis: The Case for Turkey"*, Eskişehir Osmangazi Üniversitesi İİBF Dergisi 8 (1), (2013): 143-162

Babuşçu, Ş. 1997. *"Bankacılıkta Risk Değerlendirmesi ve Türk Bankacılık Sektörüne Uygulanması."*, Sermaye Piyasası Kurulu, Ankara.

Büyükakın, F., Bozkurt H. and Cengiz V., *"Analysis Of The Interest Rate Channel Of Monetary Transmission With Granger Causality And Toda Yamamoto Method In Turkey"*, Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi 33, (2009): 101-118

Gregory, A.W. and Hansen B.E., *"Residual-based tests for cointegration in models with regime shifts."*, Journal of Econometrics 70 (1), (1996): 99-126

Gür, T.H. and Öztürk H., *"Country Risk,* Rating Agencies, Problems and New Arrangements.", Sosyo Ekonomi Temmuz-Aralık: (2011): 70-92

http://data.worldbank.org/indicator (Accessed: 24.10.2015)

http://stats.oecd.org/ (Accessed: 24.10.2015)

http://www.standardandpoors.com/spf/upload/Ratings_EMEA/2012-03- 01_ UlkerlerinKrediNotunuBasilBelirliyoruz.pdf

http://www.tradingeconomics.com/turkey/rating (Accessed: 24.10.2015)

Karagöl, E. T. and Mıhçıokur Ü. İ. 2012. *"Kredi Derecelendirme Kuruluşları: Alternatif Arayışlar."*, SETA Rapor

Moody's Investors Service, *"Moody's Rating System in Brief"*, www.moodys.com, (Accessed: 24.10.2015)

Moody's Investors Service, (2012), *"Rating Symbols and Definitions"*, www.moodys.com, (Accessed: 24.10.2015)

Tarı, R. 2010. *"Ekonometri."*, Genişletilmiş 6. Baskı, Kocaeli: Umuttepe Yayınları

Tıraşoğlu, M. and Yıldırım B., *"Health Expenditure and Economic Growth Relationship In The Case Of Structural Break: A Case Study For Turkey"*, Electronic Journal of Vocational Colleges 2(2), (2012): 111-117

Toda, H.Y. and Yamamoto T., *"Statistical Inference In Vector Autoregressions With Possibly Integrated Processes."*, Journal of Econometrics 66(1-2), (1995): 225-250

Tutar, E., Tutar F. and Eren M.V., *"The Roles Of International Credit Rating Agencies,* Questioning About Their Reliability And Turkey.", Akademik Bakış Dergisi, 25, (2011): 1-24

Yazıcı, M. 2009. *"Kredi Derecelendirme Kuruluşlarının Önemi ve Denetimi."*, Maliye ve Finans Yazıları Hakemli Dergisi.

AID SELECTIVITY PRACTICE AND AID EFFECTIVENESS IN SUB-SAHARAN AFRICA

Adeniyi Jimmy Adedokun, Abiodun O. Folawewo

(1) Department of Economics, McPherson University, Seriki-Sotayo, Ogun State, Nigeria
(2) Department of Economics, Faculty of the Social Sciences,University of Ibadan, Nigeria

Adeniyi Jimmy Adedokun
Department of Economics, McPherson University
Seriki-Sotayo, Ogun State, Nigeria
jimmyades2005@yahoo.com

Article info
Paper category: Original Scientific Paper
Received: 18.5.2017.
Accepted: 19.7.2017.
JEL classification: F35

ABSTRACT

Foreign aid strategies have undergone restructuring as donors adopt aid selectivity practice to improve aid effectiveness. This study investigates the impact of aid selectivity practice on aid effectiveness (aid-growth relationship) in Sub-Saharan Africa (SSA) and several groups of countries within SSA from 1980 to 2012. Employing system generalized methods of moments (system GMM) technique; the study produces strong evidence that there is significant improvement in aid effectiveness due to aid selectivity practice.

Keywords:
Foreign aid; Aid selectivity practice; Aid effectiveness; Sub-Saharan Africa

1. INTRODUCTION

In theory, foreign aid is expected to serve as a means of transferring capital from developed economies to developing ones. By doing this, it is likely that aid would stimulate social and economic reforms by providing funds for development projects such as infrastructure, technologies, education, health, and revitalizing crises stricken economies; thus, resulting in economic growth. However, there has been a long standing and sustained debate about aid-growth relationship that has challenged the effectiveness of aid on several grounds; making the aid-growth link vague. Empirical evidences have shown that some of the high recipient countries of foreign aid in the world especially in Sub-Saharan Africa (SSA) such as Central African Republic and Malawi are still unable to account for positive corresponding growth, while few countries like Niger has recorded significant economic progress (see Leeson, 2008).

Interestingly, an important question to ask, is why aid works in certain countries and fails in some others? Past studies have highlighted several determinants of aid effectiveness. The study that made the most popular qualified analysis of aid effectiveness is that of Burnside and Dollar (2000), which posits that macroeconomic policy is an important determining factor of the growth promoting impact of foreign aid. For instance, foreign aid is expected to be more effective in countries with good macroeconomic policies than countries with bad macroeconomic policies. Other studies such as Collier and Dehn (2001), Dalgaard, *et al* (2004), and Ang (2010) opined that export price shocks, climate related differences and financial liberalisation, respectively are channels through which aid affects growth.

Against the background, foreign aid strategies have undergone fundamental reassessment as donors have come up with several measures to ensure that aid becomes more effective. Initially, the concept of aid conditionality[1] was the practice by the donor community. This practice went through little change after the influential study of Burnside and Dollar (2000). After the study, it was acknowledged that aid did promote growth but should be allocated to countries that have adopted good policies. As a result, aid selectivity or *ex-post* conditionality (Ramiarison, 2010) came into practice - where in some cases, foreign aid is attached to several considerations and prerequisites such as macroeconomic policy reforms, governance, and poverty or need, among others. As a general measure of adequacy in recipient countries, aid selectivity in the recent times, in most cases, is pinned on the state of governance. Consequently, efforts toward good governance in developing countries have become a condition for attracting development assistance. However, because donors also consider other factors related to living standards such as poverty when giving aid, it becomes difficult for donors to aim at good governance alone as prerequisite for aid as countries with weak governance most time record low living standards. As a result, aid selectivity practice becomes difficult to implement. Nevertheless, Collier

1 The act of conditioning aid on promises of policy reforms

(1999) suggested a dynamic case for a temporary increase in aid. That is, aid should be targeted at inducing policy reform and to increase it even after policies improve because the resulting growth needs to be sustained within a situation of low private investment. According to him, "aid needs to taper in with policy reform rather than to taper out with reform as it is the actual donor behaviour".

A lot of weaknesses can still be identified in developing countries as regards economic reforms. This situation is likely an important reason why donors are agitating for elements that can boost the effectiveness of aid. For instance, in a summit on combating poverty in Africa, held at Gleneagle, Scotland on July 7-8, 2005, the G-8 leaders reiterated the requirement for aid in their final Communiqué. They noted that aid is to be focused on low income countries committed to policy reforms such as growth and poverty reduction, democratic, accountable and transparent government, and sound public financial management (Gleneagles Communique, 2005). All these practices are within the framework of aid selectivity - where aid flows are expected to be channelled to countries that have the necessary environment that can promote effective aid management.

The motivation for this study is therefore to empirically investigate the claim by several studies in the past around aid selectivity. For instance, the World Bank study titled "Assessing Aid" (1998) opined that the allocation of foreign aid would have greater impact on poverty reduction if it were targeted to the poorest countries and among them favoured the ones with stronger economic institutions and policies. Also, the study by Burnside and Dollar (2000) empirically confirmed the view of "Assessing Aid", thus argued that aid is more effective in countries with good macroeconomic policies than others. To support the two above studies and related ones, Dollar and Levin (2006), argued that in year 2000-03, donors, especially multilateral ones are more selective in aid practice than in the year 1984-89. Dollar and Levin (2006) revealed that donors have over the years acted on the two earlier referenced studies and related ones to start aid selectivity practice around year 2000. To conclude the debate on aid selectivity in the literature, the next important investigation should centre on evaluating aid selectivity practice. Therefore, the main focus of this study is to investigate the impact of aid selectivity practice on aid effectiveness in SSA. This study investigates total aid, official development assistance (ODA), as against grouping into multilateral and bilateral aid. Beyond aggregate SSA regression, this study also investigates several groups of countries for robust analysis. Based on the information available to the author, this is the first study to carry out an empirical investigation on the effectiveness of aid selectivity practice.

This study employs a simple methodology by breaking the period of study into two. The first period covers 1980-2000 (pre-selectivity) and the second period covers 2001-2012 (post-selectivity). System generalized methods of moments (system GMM) estimator proposed by Arellano and Bover (1995) and Blundell and Bond

(1998) is used for estimations. The study concludes that aid is more effective in post-selectivity period as against its ineffective impact in pre-selectivity period.

The rest of this paper is organized as follows. Section 2 presents summary of past relevant empirical studies where aid effectiveness debate is well articulated. Section 3 presents the methodology. Section 4 covers analyses of results where the result for pre and post-selectivity period are presented for aggregate SSA and for other groups of countries in SSA. Finally, section 5 presents conclusion.

2. SUMMARY OF PAST RELEVANT EMPIRICAL STUDIES

The trend of debate in the literature on foreign aid and its effectiveness has been very interesting; starting from the justification for foreign assistance, built on the "Big Push" argument initiated by Rosenstein-Rodan (1943, 1944), and developed by Nurkse (1953) to the empirical studies by various authors. The "Big Push" argument suggests that underdeveloped countries need huge amount of investment to move away from backwardness to a path of economic development; but savings required for this huge investment was insufficient. Based on this, mainstream economics suggests a need for external sources of funds (the big push) aimed at complementing domestic savings. Through this means, the 'financing gap' that leaves the underdeveloped countries stuck in a 'poverty trap' can be closed. Because most of the underdeveloped countries have immature capital market coupled with high risk attached to business, they do not stand a chance of making that huge sum of money needed for investment purposes, enough to set them on the path of long run growth, both locally and through borrowing in international market. Accordingly, the 'big push' argument portrays external help (foreign aid) as the fundamental means to complement domestic savings, increase investment and in turn, ensure long run desired growth.

Since the big push argument, several studies have endeavoured to investigate the need for aid and the effectiveness of aid. To do this, extant empirical studies on aid effectiveness concentrated more on aid-growth nexus using different theories and methodologies. As a result, these studies came up with different results which made aid effectiveness literature inconclusive and mix. Among the several existing studies, some argued for a positive relationship between aid and growth (see Islam, 1992; Snyder, 1993; Gounder, 2001; Moreira, 2005; Chowdhury and Das, 2011; and Kargbo, 2012, among others). Authors in this category were of the opinion that aid increased growth by augmenting savings, financing investments and increasing productivity. Conversely, studies such as Friedman, 1958; Bauer, 1972; Boone, 1994 and 1996; Dhakal, Upadhyaya and Upadhyaya, 1996; Bowen, 1998; Easterly, 1999 and 2001; Kanbur, 2000; Radelet, 2006; Duc, 2006; Mallik, 2008; and Leeson, 2008, among others, argued for a negative relationship between aid and growth. A general consensus of this category of study was that aid failed to induce growth. However, each study gave different reasons for supporting this claim. Among the reasons given

are misused of aid (aid fungibility), corruption, poor administration, tying up of aid with precious resources in recipient countries and questionable aid allocation decisions by donors, aid caused investment disincentive for private sector, aid caused savings reduction, bad policies environment (e.g Boone 1996), extremely low level of human capital (e.g Kosack and Tobin, 2006) and volatility in aid disbursement by donors (e.g Kathavate, 2013).

The above highlighted two major strands in the literature caused several reflections and reconsiderations. Scholars started asking questions on the reasons why foreign aid would have significant negative relationship with economic growth. Thus, in a quest to find answers to this, the focus of aid effectiveness debate changed from ordinary aid-growth relationship investigation to a more in-depth one by investigating intermediate factors that could determine aid effectiveness. The ground breaking and leading study in this category was the study by Burnside and Dollar (2000) on 56 countries from 1970 to 1993. The study is focussed on answering two basic questions. One, is the effect of aid on growth conditional on economic policies? And two, do donor governments and agencies allocate more aid to countries with good policies? The answer to the first question is that aid had a positive impact on growth in developing countries with good macroeconomic policies (fiscal, monetary, and trade) but had little effect in the presence of poor policies. As a result, identifying good policies as important ingredient for growth, the study suggested that aid would be more effective if it were more systematically conditioned on good policy. Answer to the second question will be discussed shortly. Other related studies such as Hansen and Tarp, 2001; Dalgaard and Hansen, 2001; Denkabe, 2003; Dalgaard, *et. al.* 2004; Asiedu and Nandwa, 2007; Rajan and Subramanian, 2008; and Minoiu and Reddy, 2009, came up with more factors such as governance, export shocks, financial liberalization, geographical factors, and so on as intermediate factors that determine aid effectiveness.

As the debate on aid effectiveness broadens, scholars also investigated the second question of Burnside and Dollar (2000) that has to do with aid selectivity. For Burnside and Dollar (2000), their study argued that quality of policy had little impact on aid allocation. According to the study, there was no significant tendency for total aid or bilateral aid to favour good policy. In contrast, aid that was managed multilaterally (about one-third of the total) was allocated in favour of good policy. However, as the debate continues, studies started carrying out robust analysis on aid selectivity by employing different methodology from what was used in Burnside and Dollar (2000). Thus, many studies carried out periodic investigation and found that aid selectivity was not in practice in pre-2000, but was practiced in post-2000. For instance, Dollar and Levin (2006) focused their study on 1984-89 and 2000-2003. They found that multilateral aid was more selective than bilateral aid in targeting countries with good rule of law. During 1984-89, both bilateral and multilateral aid had significant negative relationships with rule of law; by 2000-03, this had shifted

to a significant positive relationship for multilateral aid, and a positive but statistically insignificant relationship for bilateral aid. To conclude their study, they found that total foreign aid was more selective in 2000-2003 than in 1984-89. Some studies such as Mohammad (2014) which focused its attention on 2001-2010, supported the findings of Dollar and Levin (2006) by producing strong evidence that countries with good governance were given preferential treatment by donors. The study found that among the six governance indicators, voice and accountability and control of corruption were critical in aid allocation decision.

As can be observed from the above studies, empirical investigation on the impact of aid selectivity practice on aid effectiveness has so far received little or no attention. The focus of investigation in the past related to aid selectivity practice was to examine the extent to which foreign aid (multilateral and bilateral) is selective in terms of democracy and property rights/rule of law. Giving the position of debates in the literature, beyond establishing the fact that donors have adopted aid selectivity practice in post-2000 more than any other period in history, it is therefore imperative to extend the investigation to the effectiveness of aid selectivity practice. Having established that this study has not been able to find a study that empirically investigated the impact of aid selectivity practice on aid effectiveness, it endeavours to bridge the gap in the literature, and to find an answer to an important subject in aid administration. Consequently, results from this study will assist donors to either stick to aid selectivity practice or jettison it. To achieve this result, a simple methodology is adopted where year 2000 is identified as the structural change year in aid administration.

3. METHODOLOGY

3.1. Empirical Model Specification and Variable Measurements

Following aid-growth literature, the objective of the study is investigated by estimating equation (1).

$$Y_{it} = \alpha + \beta_i X_{it} + \gamma_i Z_{it} + \varepsilon^{Y}{}_{it} \qquad (1)$$

where '*Y*' is the growth rate of real GDP per capita, '*X*' is a vector of explanatory variables, '*Z*' is a vector of control variables, 'ε' is the error term, subscript '*i*' refers to country, '*t*' refers to time, where β and γ are the estimated parameters. The explanatory variable in this study is foreign aid as a percentage of GDP *(ODA/GDP)*. Control variables are initial level of GDP per capita *(GDP_{t-1})*, investment as a percentage of GDP *(INV/GDP)*, population growth (*POPN*) employed as a proxy for labour force growth, broad money as a percentage of GDP (*M2/GDP)* measures the development of financial markets, openness defined as total trade as a percentage of GDP *(OPEN)*,

inflation (*INF*), government consumption as a percentage of GDP *(GC/GDP)*, and ethnolinguistic fractionalization *(ELF)*.

Generally, data used for estimation in this study cover 47 countries[2] in SSA between the period 1980 and 2012. The study adopted the ELF indices computed by Roeder (2001), where countries with values close to zero are more homogeneous and countries with values close to one are more heterogeneous. GDP and other variables measured at year 2000 constant prices, US Dollars are sourced from the World Bank's World Development Indicators (2014). Aggregate measurement of aid (ODA) is used.

3.2. Estimation Issues and Procedures

In the literature (see Burnside and Dollar, 2000; and Hansen and Tarp 2001; among others), the estimates from aid regression may be biased due to three factors. One, the possibility of endogeneity problem is very likely when estimating relationship between foreign aid and growth. By definition, an explanatory variable is said to be endogenous if it correlates with error term. In such case, the inconsistency of estimation methods such as OLS cannot be overemphasized. Two, in estimating panel models, heterogeneity across countries and time is very likely due to a certain degree of cross-section dependence introduced by unobserved (heterogeneous) country and time-specific factors making the conventional estimators to be seriously biased. Finally, conditional convergence as a result of the inclusion of initial GDP in aid-growth model as common in past studies makes the estimates generated from pooled regression and ordinary instrumental variable methods bias.

To correct for the above shortcomings and at the same time build on previous studies (such as Burnside and Dollar, 2000; Dalgaard and Hansen, 2001; Dalgaard *et. al.*, 2004; and Salisu and Ogwumike, 2010, among others) that employed OLS and instrumental variable (IV) methods of 2SLS, this study adopts the "system GMM" estimator, proposed by Arellano and Bover (1995) and Blundell and Bond (1998). The system GMM mitigates the problem of poor instrument in other dynamic panel GMM called "difference GMM[3]". It identified that lagged levels are often rather poor instruments for first differenced variables, especially if the variables are close to a random walk. Thus, it includes lagged levels as well as lagged differences. Specifically, the system GMM uses additional moment conditions in which lagged differences of the dependent variable are orthogonal to levels of the disturbances. According to Asiedu and Nandwa (2007), another advantage of the system GMM estimator is that it reduces finite sample bias by exploiting additional moment conditions where the autoregressive parameter is only weakly identified from the first-differenced equa-

2 See Appendix C for the lists of countries. Somalia and South Sudan are not included in the empirical analysis due to data limitation.

3 Difference GMM estimator is proposed by Arellano and Bond (1991). It uses lagged-levels of first difference of variables as instruments.

tion. This makes system GMM appropriate for regressions with small observations. Since the observations of the sub-samples in this study is small, system GMM becomes appropriate.

Aid selectivity effectiveness investigation is carried out by dividing the entire period of this study into two. Period before year 2000 is identified as pre-selectivity and period after year 2000 is identified as post-selectivity. The empirical models estimated for these two periods are the same to ensure uniformity. Consequently, comparisons are made between the two same sets of models of different time frames. Year 2000 is chosen for two major reasons. One, this is the year Burnside and Dollar published their popular paper and made campaign for good policies as a determinant of aid effectiveness widespread in the literature. Second, Dollar and Levin (2006) empirically found out that foreign aid was selective in 2000-03 other than 1984-89. Thus, year 2000 marks the time when aid practice changed and donors started engaging in what is popularly referred to as aid selectivity. Thereafter, the entire period of this study is divided into two - the pre-selectivity period (1980 to 2000), and post-selectivity period (2001 to 2012). This procedure to empirically investigate aid selectivity effectiveness is novel and also consistent with the claim by Ramiarison (2010), where it is stated that aid selectivity or *ex-post* conditionality practice is as a result of the study by Burnside and Dollar (2000).

To arrive at the different categories of groups of countries investigated, the following are done. For the sub-regions of SSA, the study focuses on West Africa, East Africa, Central Africa, and Southern Africa. Oil producing category (resource endowment) comprises oil producer and non-oil producer. Oil producers are countries that produce oil in commercial level and non-oil producer are those that do not produce oil in commercial level. Countries that newly discovered oil in commercial level are not included as oil producers in this study. Income level is determined by dividing SSA into two, using per capita income. The average income across SSA is determined after which countries that fall below the average income are categorised as low income and countries above are categorised as high income. Finally, aid intensity categorization is determined as in the case of income level. For reference purpose, the list of countries in each set of the several categories above is presented in the Appendices 1. - 7.

4. ANALYSES OF RESULTS

4.1. Descriptive Analysis

Descriptive statistics of the variables used in this study are presented in Table 1. The Table shows basic characteristics of the variables in terms of their average value (Mean), standard deviation (SD), minimum (Min) and maximum (Max) values, and coefficient of variation (CV). By definition, the mean value is the average outcome of a reference variable over specific time period. SD is the measure of dispersion of

variables from their reference mean, and it measures the variability of spread of data. Min and Max are the minimum and maximum values, respectively of the variable in question. As in SD, CV also measures dispersion but in a more standardized form. It is a normalized measure of dispersion of a probability or frequency distribution. It is defined as the ratio of standard deviation to mean. This definition makes it superior to SD as it provides a vivid picture of relative variability. If CV is higher than 0.50 (50%), dispersion is high, implying uneven distribution and higher variability; if otherwise, dispersion is low.

Table 1. is presented in such a way that facilitates comparisons of aggregate SSA statistics with that of the different regions such as West Africa, East Africa, Central Africa, and Southern Africa. The SSA countries are further classified into 3 other groups: oil and non-oil producers; high and low income countries; and high and low aid intensity countries. The analysis therefore follows a specific pattern. The average aggregate SSA statistics should be used as reference point for all other regions and groups. More importantly, comparisons should be made across regions and groups. For clarity and simplicity of analysis, reference should be made to the mean values.

Table 1.: Descriptive Statistics of Major Variables: Aggregate SSA and Other Categories

West Africa						East Africa					
Variable	**Mean**	**SD**	**Min**	**Max**	**CV**	**Variable**	**Mean**	**SD**	**Min**	**Max**	**CV**
PC	544.58	363.44	50.04	2749.48	0.67	**PC**	1248.388	2528.63	111.79	13889.95	2.03
PCGRT	0.65	7.74	-50.24	91.67	11.83	**PCGRT**	0.92	5.60	-47.31	36.77	6.09
ODA	15.86	15.89	0.06	181.19	1.00	**ODA**	14.29	11.51	-0.25	94.95	0.81
INV	17.82	8.36	-2.42	58.96	0.47	**INV**	17.82	6.92	2.00	47.85	0.39
POPN	13600000	27500000	301591	169000000	2.03	**POPN**	10200000	10600000	64400	47800000	1.04
OPEN	66.64	26.42	6.32	179.12	0.40	**OPEN**	61.02	28.34	10.95	144.70	0.46
ELF	0.73	0.15	0.32	0.90	0.21	**ELF**	0.61	0.25	0.08	0.92	0.41
Central Africa						**Southern Africa**					
PC	2077.70	2809.86	201.73	13518.04	1.35	**PC**	3028.55	1735.88	422.17	6693.75	0.57
PCGRT	2.10	12.27	-27.15	142.07	5.85	**PCGRT**	2.08	3.73	-8.69	16.96	1.80
ODA	10.02	11.63	-0.20	69.40	1.16	**ODA**	4.42	4.45	0.00	19.18	1.01
INV	29.62	32.39	1.93	219.07	1.09	**INV**	25.63	12.60	8.42	74.82	0.49
POPN	10200000	13400000	94953	65700000	1.31	**POPN**	9215433	15900000	603373	52300000	1.73
OPEN	97.36	80.62	20.06	531.74	0.83	**OPEN**	113.48	43.44	38.65	209.87	0.38
ELF	0.76	0.13	0.47	0.88	0.18	**ELF**	0.50	0.26	0.22	0.89	0.53
Oil Producers						**Non-oil Producers**					
PC	2568.16	2788.94	201.73	13518.04	1.09	**PC**	1034.22	1834.61	50.04	13889.95	1.77
PCGRT	1.53	11.77	-27.15	142.07	7.72	**PCGRT**	1.11	6.51	-50.24	91.67	5.87
ODA	6.38	10.63	-0.20	69.40	1.67	**ODA**	14.45	13.33	-0.25	181.19	0.92
INV	27.48	31.10	2.10	219.07	1.13	**INV**	19.29	9.79	-2.42	79.35	0.51
POPN	27800000	35500000	726454	169000000	1.28	**POPN**	7740606	8722152	64400	47800000	1.13
OPEN	96.44	77.48	20.44	531.74	0.80	**OPEN**	69.42	35.59	6.32	209.87	0.51
ELF	0.78	0.14	0.47	0.90	0.18	**ELF**	0.64	0.22	0.08	0.92	0.35
High Income Countries						**Low Income Countries**					
PC	4554.09	2929.69	1336.67	13889.95	0.64	**PC**	480.78	251.95	50.04	1324.99	0.52
PCGRT	3.03	10.21	-19.38	142.07	3.37	**PCGRT**	0.70	6.98	-50.24	91.67	9.97
ODA	4.04	5.01	-0.25	35.35	1.24	**ODA**	15.15	13.73	0.06	181.19	0.91
INV	27.27	22.35	3.62	218.99	0.82	**INV**	19.44	14.87	-2.42	219.07	0.77
POPN	6176610	11700000	64400	52300000	1.89	**POPN**	13300000	20600000	139428	169000000	1.55
OPEN	108.02	53.51	38.14	531.74	0.50	**OPEN**	65.74	42.18	6.32	504.88	0.64
ELF	0.61	0.20	0.27	0.92	0.33	**ELF**	0.68	0.22	0.08	0.92	0.32
High Aid Intensity						**Low Aid Intensity**					
PC	633.85	907.53	50.04	6742.23	1.43	**PC**	1786.63	2551.49	111.79	13889.95	1.42
PCGRT	1.26	8.38	-50.24	91.67	6.64	**PCGRT**	1.15	7.46	-27.15	142.07	6.51
ODA	24.42	15.32	12.92	181.19	0.63	**ODA**	6.06	3.87	-0.25	12.88	0.64
INV	22.74	19	-2.42	219.07	0.84	**INV**	19.87	15.32	0.29	218.99	0.77
POPN	7920927	10800000	64400	120000000	1.36	**POPN**	14200000	22900000	65128	169000000	1.62
OPEN	74.67	50.20	20.96	504.88	0.67	**OPEN**	74.75	46.63	6.32	531.74	0.62
ELF	0.65	0.22	0.084	0.92	0.34	**ELF**	0.68	0.21	0.08	0.92	0.32
Sub-Saharan Africa											
Variable	Mean		SD	Min		Max			CV		
PC	1335.44		2144.57	50.04		13889.95			1.61		
PCGRT	1.19		7.83	-50.24		142.07			6.57		
ODA	12.89		13.24	-0.25		181.19			1.03		
INV	20.97		16.88	-2.42		219.07			0.81		
POPN	11600000		19100000	64400		169000000			1.65		
OPEN	74.72		48.03	6.32		531.74			0.64		
ELF	0.666		0.218	0.08		0.92			0.33		

Source: Author's computation using STATA
Note: PC is per capita income, PCGRTB is PC growth, ODA is official development assistance as a percentage of GDP, INV is investment as a percentage of GDP, POPN is population, OPEN is openness, and ELF is ethnolinguistic fractionalization.

4.2 Empirical Analysis

Generally, for all the 22 models estimated, Hansen diagnostics tests show that the models are suitable. The Hansen J test statistic indicates that the instruments are appropriately uncorrelated with the disturbance process. Thus, this makes the instruments valid and satisfies the orthogonality conditions. Also, autocorrelation tests (AR1and AR2) indicate that there is no problem of serial correlation in the models.

The major focus at this point is to investigate if aid selectivity practice has really improved aid effectiveness in SSA. Tables 2. and 3. show the results for pre-selectivity period, 1980 to 2000 (first period) and post-selectivity period, 2001 to 2012 (second period), respectively. Interestingly, in the pre-selectivity period, foreign aid has significant negative relationship with economic growth in aggregate SSA. This result shows that as foreign aid increased between 1980 and 2000 in SSA, economic growth reduced. Of course, this period in history marked the time when most of SSA countries' governance structures deteriorated greatly as many of the countries were governed by the military. However, if aid disbursement had been selective enough, may be the result would have been different. In terms of magnitude, a 1% increase in aid as a percentage of GDP reduces economic growth by 0.24% in SSA.

On the other hand, the post-selectivity period of the investigation reveals that foreign aid has insignificant positive relationship with economic growth in aggregate SSA. This result shows that this period (with the positive coefficient) is the period when increase in foreign aid is related with an increase in economic growth in SSA. Albeit, in terms of significance, the positive relationship that exists in the second period is not vital; meaning an increase in economic growth as a result of an increase in foreign aid is not different from zero in the second period. Comparing these two periods, it can be argued that at least for the aggregate SSA regression, as a result of aid selectivity practice, the significant *negative* relationship of foreign aid with economic growth in the first period has improved to an insignificant *positive* relationship in the second period. This change may not be a noticeable one because of the *insignificant* positive relationship in the second period. However, breaking SSA into various sub groups may make the findings more interesting.

Table 2.: System GMM for Foreign Aid and Economic Growth in Aggregate SSA and Other Categories (1980 - 2000); First Period

Variables	(1) Aggregate	(2) West Africa	(3) East Africa	(4) Central Africa	(5) Southern Africa	(6) Oil Producer	(7) Non-Oil Producer	(8) High Income	(9) Low Income	(10) High Aid Intensity	(11) Low Aid Intensity
Initial GDP per Capita (log)	-8.58* (-1.75)	-6.43*** (-2.61)	-3.61** (-2.34)	-7.6 (-1.56)	2.18** (1.97)	-7.01** (-1.93)	-4.86* (-1.83)	-7.43 (-1.34)	-10.25*** (-4.54)	-6.57** (-2.16)	-4.12* (-1.74)
ODA/ GDP	-0.24** (-2.19)	-0.01 (-0.72)	-0.21*** (-3.21)	-0.5 (-1.16)	-0.1 (-0.64)	-0.43** (-2.35)	-0.07* (-1.72)	-0.42* (-1.86)	-0.07 (-1.36)	-0.16** (-1.96)	0.13 (0.81)
Investment/ GDP (log)	4.36** (2.3)	1.64* (1.78)	5.81*** (3.39)	-0.28 (-0.11)	0.59 (0.14)	7.51*** (2.55)	1.45 (1)	10.5*** (3.05)	0.32 (0.2)	3.45** (2.39)	2.43** (2.11)
Population Growth	0.13 (0.37)	0.84* (1.86)	-0.31 (-1.27)	-0.23 (-0.18)	4.3*** (4.69)	-3.79 (-1.38)	0.21 (0.73)	5.38** (2.42)	0.48 (1.58)	0.21 (0.92)	0.65 (0.94)
M2/GDP (log, lagged)	2.56 (1.23)	1.2 (1.49)	1.44 (0.83)	9.44* (1.69)	3.24* (1.82)	7.29*** (2.95)	2.07 (1.35)	7.15*** (2.63)	2.64** (2.07)	0.6 (0.34)	3.34 (1.32)
Openness (log)	9.36* (1.89)	2.73*** (2.6)	4.09* (1.85)	21.47** (1.95)	-0.22 (-0.04)	12.6*** (3.43)	3.83** (1.97)	1.85 (0.54)	5.24*** (2.92)	4.64 (1.11)	7.46** (2.41)
Inflation	-0.01 (-0.46)	-0.02 (-1.27)	0.03 (1.28)	-0.05 (-0.94)	0.16 (1.45)	-0.04 (-0.93)	0 (0.31)	-0.2 (-1.32)	-0.01 (-0.59)	0.02 (0.73)	-0.01 (-0.82)
Government Consumption/GDP	-0.26** (-2.56)	-0.05 (-1.26)	-0.17*** (-3.56)	-0.52** (-2.28)	-0.03 (-0.17)	-0.22 (-0.77)	-0.13* (-1.81)	-0.59* (-1.82)	-0.12 (-1.42)	-0.17* (-1.85)	-0.42** (-2.15)
Elf	-1.13 (-0.31)	4.9 (1.19)	-4.57** (-2)	18.31 (0.6)	-11.66 (-1.13)	1.46 (0.07)	-3.84** (-2.01)	-10.07* (-1.84)	0.8 (0.2)	-2.81 (-0.94)	-3.7 (-1.04)
Constant	5.13 (0.43)	15.08 (1.37)	-5.43* (-1.84)	-63.24** (-2.43)	-32.54 (-0.75)	-30.42** (-2.08)	9.42 (0.88)	4.34 (0.08)	33.25** (2.38)	16.33 (1.53)	-12.68 (-1.42)
Hansen Test Chi-Sq	37.15 [1.000]	1.32 [1.000]	5.55 [1.000]	0.00 [1.000]	0.00 [1.000]	0.00 [1.000]	30.87 [1.000]	0.00 [1.000]	29.80 [1.000]	16.29 [1.000]	32.54 [1.000]
AR(1)	-2.31 [0.021]	-2.91 [0.005]	-1.67 [0.095]	-1.19 [0.235]	-1.70 [0.089]	-1.03 [0.301]	-2.63 [0.008]	-0.98 [0.325]	-2.60 [0.009]	-2.13 [0.033]	-1.38 [0.167]
AR(2)	-0.37 [0.71]	-1.87 [0.062]	-0.73 [0.463]	1.13 [0.260]	0.60 [0.505]	1.02 [0.308]	-1.07 [0.282]	0.79 [0.431]	-1.15 [0.249]	-0.95 [0.340]	0.22 [0.825]
Number of Observation	691	249	249	104	120	112	571	116	567	265	424

Source: Author's computation using STATA

Note: t-statistics of the GMM are in parentheses, while the figures in bracket are p-values for Hansen test and serial correlation test. ***, **,* represent statistical significance at 1%, 5% and 10%, respectively.

Table 3.: System GMM for Foreign Aid and Economic Growth in Aggregate SSA and Other Categories (2001 - 2012); Second Period

Variables	(1) Aggregate	(2) West Africa	(3) East Africa	(4) Central Africa	(5) Southern Africa	(6) Oil Producer	(7) Non-Oil Producer	(8) High Income	(9) Low Income	(10) High Aid Intensity	(11) Low Aid Intensity
Initial GDP per Capita (log)	1.02	3.58***	2.37*	-10.22***	-2.29*	1.32	2.34***	-0.17	-2.8*	0.71	-0.46
	(0.98)	(3.51)	(1.9)	(-2.47)	(-1.75)	(0.46)	(2.48)	(-0.04)	(-1.92)	(0.58)	(-0.21)
ODA/GDP	0.01	0.05***	0.12*	-0.01	0.09	0.19*	0.04***	-0.06	0.02	0.06***	0.47**
	(0.45)	(3.68)	(1.76)	(-0.1)	(0.41)	(1.88)	(2.67)	(-0.36)	(0.89)	(4.27)	(2.27)
Investment/ GDP (log)	2.07**	2.56**	3.3***	-5.19**	2.8**	6.69**	2.29***	1.65	4.03***	4.25**	1.57
	(2.04)	(2.35)	(2.79)	(-2.42)	(2.01)	(1.93)	(2.48)	(0.75)	(3.01)	(2.12)	(0.87)
Population Growth	1.23**	1.63	0.25	-4.72	-1.65***	8.77***	1.16	2.06**	-1.62	0.41	-0.04
	(1.93)	(0.83)	(0.39)	(-1.29)	(-3.29)	(3.24)	(1.29)	(2)	(-1.39)	(0.39)	(-0.03)
M2/GDP (log, lagged)	-0.03	0.53	-2.88***	11.9***	0.63	4.96	-0.3	2.93**	-4.14*	-1.44	0.18
	(-0.04)	(0.14)	(-3.01)	(3.46)	(0.5)	(1.39)	(-0.28)	(1.95)	(-1.88)	(-0.62)	(0.17)
Openness (log)	0.74	-3.35	-1.49	27.05***	2.79***	10.06	-1.28	11.02**	-1.66	-3.84	6.7*
	(0.46)	(-1.04)	(-0.71)	(3.29)	(2.56)	(1.36)	(-0.95)	(2.14)	(-0.57)	(-1.27)	(1.73)
Inflation	-0.03	0.08	-0.12***	0.01	-0.02	-0.02	-0.09	-0.05	-0.22***	-0.12***	0
	(-1.12)	(0.95)	(-3.5)	(0.7)	(-0.35)	(-0.54)	(-1.89)	(-0.38)	(-2.64)	(-2.46)	(-0.2)
Government Consumption/GDP	-0.09	-0.03	-0.22***	-0.75***	-0.23	-0.32	-0.08	0.27	0.11	-0.2**	-0.15
	(-1.41)	(-0.21)	(-4)	(-4.93)	(-1.25)	(-1.39)	(-0.96)	(1.1)	(0.8)	(-1.98)	(-1.21)
Elf	0.65	10.72	1.38	55.99**	1.34	79.3**	1.7	9.24	2.76	1.91	5.59*
	(0.49)	(1.48)	(0.83)	(2.4)	(0.83)	(2.14)	(1)	(1.39)	(0.99)	(0.78)	(1.79)
Constant	-15.31***	-28.19***	-5.02	-84.52***	29.02***	-168.23***	-15.42**	-75.81*	30.16**	6.46	-32.88***
	(-3.49)	(-2.48)	(-0.72)	(-2.45)	(2.81)	(-2.46)	(-2.11)	(-1.92)	(2.35)	(0.98)	(-3.22)
Hansen Test Chi-Sq	42.46	5.38	4.79	0.00	0.00	0.00	27.05	3.72	27.55	15.19	29.51
	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]	[0.988]	[1.000]	[1.000]	[1.000]	[0.972]
AR(1)	-2.83	-2.03	-2.01	-1.42	-1.70	-1.56	-2.54	-1.06	-2.63	-1.73	-2.19
	[0.005]	[0.045]	[0.045]	[0.157]	[0.088]	[0.120]	[0.011]	[0.287]	[0.009]	[0.084]	[0.029]
AR(2)	-1.17	-0.25	0.08	-1.11	-0.12	-0.81	-0.81	-1.13	-0.02	0.20	-1.15
	[0.243]	[0.800]	[0.934]	[0.266]	[0.901]	[0.416]	[0.417]	[0.257]	[0.988]	[0.844]	[0.249]
Number of Observation	460	160	152	77	59	84	375	220	356	139	318

Source: Author's computation using STATA

Note: t-statistics of the GMM are in parentheses, while the figures in bracket are p-values for Hansen test and serial correlation test. ***, **,* represent statistical significance at 1%, 5% and 10%, respectively.

Regression results of sub groups of countries give clearer and more convincing results than aggregate SSA regression. In pre-selectivity period, foreign aid is negatively related with economic growth in all of the categories, except for low aid intensity group of countries which displays insignificant positive relationship. Moreover, half of the group of countries in pre-selectivity period (5 out of 10), excluding aggregate SSA regression display *significant negative* relationship at 10% level at least between foreign aid and economic growth. This result further confirms that in pre-selectivity period, aid has *no good* to offer SSA countries, as countries with low aid recorded positive relationship. The positive relationship in low-aid intensity group of countries lend support to the argument of Friedman (1958) and Bauer (1972) that foreign assistance to government is dangerous because it increases the power of the elite in the recipient governments, leads to corruption, discourages the growth of private sector investments, and encourages public sector-led growth, as well as economic growth.

Against pre-selectivity regression results, Table 3, which presents the result for post-selectivity period shows that 6 models, excluding aggregate SSA regression display *significant positive* relationship at 10% level at least between foreign aid and economic growth. In all, foreign aid is positively related with economic growth in 8 categories, out of which 3 are significant at 1% level (West Africa, non-oil producer and high aid intensity), 1 at 5% level (low aid intensity), 2 at 10% level (East Africa and oil producer); and 2 are insignificant (Southern Africa and low income).

These results show that there is significant improvement in aid effectiveness as a result of aid selectivity practice in SSA. However, reference to the results of post-selectivity period, there are 2 groups of countries that still experience negative relationship between foreign aid and economic growth. Also, among the ones that experience positive relationships, 3 including aggregate SSA are insignificant. Thus, donors should intensify the practice of selectivity by favouring countries with stronger economic institutions and policies in a set of poorest countries. This should be done not only by giving aid to countries with sound governance alone, but also by targeting aid at improving governance. To complement this, donors can also increase the amount of aid given to SSA countries to improve results.

5. CONCLUSION

Studies have vastly argued that donors favoured aid selectivity in post-2000 than what was the usual practice in pre-2000. However, the necessary question to ask is what is the impact of such practice on aid effectiveness? The answer to this question is straight forward. Aid selectivity practice improved aid effectiveness as aid translated to positive growth during period of post-selectivity as against negative growth in pre-selectivity period. Thus, the policy implications for this study are that donors should practice aid selectivity in aid administration to improve effectiveness. This

can be achieved by not only giving aid to countries with good governance, but also by using aid as a tool to improve governance. To complement this, volume of foreign aid flowing to favoured countries should be increased to ensure more and significant aid effectiveness in SSA countries.

Finally, this study identifies that perhaps it is ideal to investigate effectiveness of aid selectivity practice by differentiating between multilateral and bilateral aid. Thus, it suggests this demarcation for further research in order to address some grey areas in the literature.

REFERENCES

Ang, J.B., *"Does Foreign Aid Promote Growth? Exploring the Role of Financial Liberalization". Review of Development Economics*, Vol. 14(2), (2010): 197-212

Arellano, M., and Bond, S., *"Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application of Employment Equations." Review of Economic Studies 58 (2),* (1991): 277-297

Arellano, M., and Bover, O., *"Another Look at the Instrumental Variable Estimation of Error Component Models." Journal of Econometrics 68 (1),* (1995): 29-51

Asiedu, E. and Nandwa, B., *"On the Impact of Foreign Aid in Education on Growth: How Relevant is the Heterogeneity of Aid Flows and the Heterogeneity of Aid Recipients?" The Review of World Economy, Springer,* Vol. 143(4), (2007): 631-649

Bauer, P., (1972). *Dissent on Development*, Harvard University Press, Cambridge.

Blundell, R., and S. Bond, *"Initial Conditions and Moment Restrictions in Dynamic Panel Data Models." Journal of Econometrics 87 (1),* (1998): 115-143

Boone, P., (1994). *"The impact of foreign aid on savings and growth." Mimeo, London School of Economics*

Boone, P., (1996). *"Politics and the Effectiveness of Foreign Aid." European Economic Review. 40:2 289 - 329*

Bowen, J.L., (1998): *"Foreign Aid and Economic Growth: A Theoretical and Empirical Investigation." Aldershot: Asghate Publishing LTD.*

Burnside, C. and Dollar, D., *"Aid,* Policies, and Growth." *American Economic Review,* Vol. 90, No. 4, (2000): 847-868

Chowdhury, M. and Das, A., *"Aid-Growth Nexus in South Asia: Evidence from Time Series and Panel Cointegration." Research in Applied Economics*, Vol. 3, No. 1: E3, (2011): 1 - 19

Collier, P., *"Aid Dependency: a Critique." Journal of African Economies,* Vol. 8(4), (1999): 528-545

Collier, P. and Dehn, J., (2001). *"Aid,* Shocks and Growth," Working Paper 2688, World Bank, Washington DC

Dalgaard, C.-J. and Hansen, H., *"On Aid,* Growth and Good Policies." *Journal of Development Studies*, Vol. 37, (2001): 17-41

Dalgaard, C.-J. Hansen H. and Tarp F., *"On the Empirics of Foreign Aid and Growth." The Economic Journal,* 114, (2004): F191 - F216

Denkabe, P., *"Policy,* Aid and Growth: A Threshold Hypothesis." *Journal of African Finance and Economic Development*, Vol. 6(1), (2003): 1-21

Dhakal, D., Upadhyaya, K. and Upadhyaya, M., *"Foreign Aid,* Economic Growth and Causality." *Rivista Internazionale di Scienze Economiche e Commerciali*. Vol. 43, (1996): 597-606

Dollar, D. & Levin, V., *"The Increasing Selectivity of Foreign Aid,* 1984-2003." *World Development*, Elsevier, vol. 34(12), pages (2006): 2034-2046

Duc, V.M., (2006). "Foreign Aid and Economic Growth in the Developing Countries: A Cross Country Empirical Analysis." Available at: http://cnx.org/content/m13519/latest/

Easterly, W., *"The Ghost of Financing Gap: Testing the Growth Model Used in the International Financial Institutions." Journal of development Economics,* Vol. 60:2, (1999): 423 - 438

Easterly, William. *The elusive quest for growth: economists' adventures and misadventures in the tropics*. MIT press, 2001.

Friedman, M., *"Foreign Economic Aid." Yale Review Vol.47(4),* (1958): 500-516

Gleneagles Communique on Africa, Climate Change, Energy and Sustainable Development. (2005). July. G-8, www.g-8.org

Gounder, R., *"Aid-growth nexus: empirical evidence from Fiji." Applied Economics. Vol. 33,* (2001): 1009-1019

Hansen, H. and Tarp, F., *"Aid and Growth Regressions." Journal of Development Economics,* Vol. 64, (2001): 547-570

Islam, A., *"Foreign Aid and Economic Growth: An Econometric study of Bangladesh." Applied Econometric,* Vol. 24, (1992): 541 - 544

Kanbur, R., *"Income Distribution and Development." In A.B. Atkinson and F. Bourguignon (editors), Handbook of Income Distribution, Volume I.* Amsterdam. North Holland-Elsevier, 2000.

Kargbo, P.M., *"Impact of Foreign Aid on Economic Growth in Sierra Leone: Empirical Analysis." Working Paper No. 2012/07,* 2012., *UNU-WIDER*

Kathavate, J., *"Direct & Indirect Effects of Aid Volatility on Growth: Do Stronger Institutions Play a Role?" MPRA Paper No. 45187,* 2013., Available at: http://mpra.ub.uni-muenchen.de/45187/

Kihara, T., *"Effective Development Aid: Selectivity,* Proliferation and Fragmentation, and the Growth Impact of Development Assistance." ADBI Working Paper 342. Tokyo: Asian Development Bank Institute. 2012., Available: www.adbi.org/working-paper/2012/01/30/4847.effective.development.aid/

Kosack, S. and Tobin, T., *"Funding Self-Sustaining Development: The Role of Aid,* FDI

and Government in Economic Success." *International Organization,* Vol. 60, (2006): 205-243

Leeson, P.T., *"Escaping Poverty: Foreign Aid,* Private Property, and Economic Development." *The Journal of Private Enterprise* 23(2), (2008): 39-64

Mallik, G., *"Foreign Aid and Economic Growth: A Cointegration Analysis of the Six Poorest African Countries." Economic Analysis & Policy,* Vol. 38 No. 2, (2008): 251 - 260

Mohammad, I., *"Aid Allocation,* Selectivity, and the Quality of Governance." *Journal of Economics, Finance and Administrative Science*, Elsevier Vol. 19, (2014): 63-68

Minoiu, C. and Reddy, S.G., *"Development Aid and Economic growth: A Positive Long-Run Relation." The Quarterly Review of Economics and Finance,* 50(1), (2010): 27-39

Moreira, S.B., *"Evaluating the Impact of Foreign Aid on Economic Growth: A Cross-Country Study." Journal of Economic Development,* Vol. 30, No. 2, (2005): 25 - 49

Nurkse, R., *Problems of Capital Formation in Underdeveloped Countries*. Oxford: Oxford University Press, 1953.

Ramiarison, H.A., *"Assessing the Development Role of Foreign Aid in Developing Countries: A Special Reference to the Role of Japan's Aid in Far East Asia." IDE-JETRO, V.R.F. Series,* No 462, December 2010.

Radelet, S., *"A Primer on Foreign Aid." Working Paper Number 92. Centre for Global Development,* Washington DC, 2006.

Rajan, R.G. and Subramanian, A., *"Aid and Growth: What Does the Cross-Country Evidence Really Show?" The Review of Economics and Statistics,* Vol. 90, Issue 4, (2008): 643 - 665

Roeder, P.G., "Ethnolinguistic Fractionalization (ELF) Indices, 1961 and 1985." February 16., 2001. <http//:weber.ucsd.edu\~proeder\elf.htm>. Accessed 10-09-2014

Rosenstein-Rodan, P.N., *"Problems of Industrialisation of Eastern and South-Eastern Europe". Economic Journal*, Vol.53, N0210/211, (1943): 202-211

Rosenstein-Rodan, P.N., *"The International Development of Economically Backward Areas", International Affairs (Royal Institute of International Affairs 1944-)*, Vol. 20, No. 2 , (1944): 157-165

Salisu, A.A. and Ogwumike, F.O., *"Aid-Macroeconomic Policy Environment and Growth: Evidence from Sub-Saharan Africa." Pakistan Journal of Applied Economics*, Vol. 20, Nos. 1&2, (2010): 1-12

Snyder, D.W., *"Donor Bias Toward Small Countries: An Overlooked Factor in the Analysis of Foreign Aid and Economic Growth." Applied Economics*, Vol. 25, (1993): 481 - 488

World Bank, *"Assessing Aid: What Works,* What Doesn't, and Why. Washington DC: The World Bank, 1998.

World Bank, *"World Development Indicators". Washington DC: The World Bank,* 2014.

APPENDIX 1. LIST OF COUNTRIES IN SSA

Angola	Ethiopia	Niger
Benin	Gabon	Nigeria
Botswana	The Gambia	Rwanda
Burkina Faso	Ghana	Sao Tome and Principe
Burundi	Guinea	Senegal
Cameroon	Guinea-Bissau	Seychelles
Cape Verde	Kenya	Sierra Leone
Central African Republic	Lesotho	South Africa
Chad	Liberia	Sudan
Comoros	Madagascar	Swaziland
Rep. of the Congo	Malawi	Tanzania
Dem.Rep. of the Congo	Mali	Togo
Cote d'Ivoire	Mauritania	Uganda
Djibouti	Mauritius	Zambia
Equatorial Guinea	Mozambique	Zimbabwe
Eritrea	Namibia	

APPENDIX 2. LIST OF COUNTRIES IN WEST AFRICA

Benin	Liberia
Burkina Faso	Mali
Cape Verde	Mauritania
Cote divoire	Niger
Gambia	Nigeria
Ghana	Senegal
Guinea	Sierra Leone
Guinea-Bissau	Togo

APPENDIX 3. LIST OF COUNTRIES IN EAST AFRICA

Burundi	Mauritius
Comoros	Mozambique
Djibouti	Rwanda
Eritrea	Seychelles
Ethiopia	Tanzania
Kenya	Uganda
Madagascar	Zambia
Malawi	Zimbabwe

APPENDIX 4. LIST OF COUNTRIES IN CENTRAL AFRICA

Angola	Rep. of the Congo
Cameroon	Equitorial Guinea
Central African Rep.	Gabon
Chad	Sao Tome & Principle
Dem. Rep. of the Congo	

APPENDIX 5. LIST OF COUNTRIES IN SOUTHERN AFRICA

Botswana	South Africa
Lesotho	Swaziland
Namibia	

APPENDIX 6. LIST OF OIL PRODUCING COUNTRIES

Angola	Equatorial Guinea
Cameroon	Gabon
Cote d'Ivoire	Nigeria
Democratic Republic of the Congo	South Africa
Republic of the Congo	

APPENDIX 7. LIST OF NON-OIL PRODUCING COUNTRIES

Benin	Guinea	Rwanda
Botswana	Guinea-Bissau	Sao Tome and Principe
Burkina Faso	Kenya	Senegal
Burundi	Lesotho	Seychelles
Cape Verde	Liberia	Sierra Leone
Central African Republic	Madagascar	Sudan
Chad	Malawi	Swaziland
Comoros	Mali	Tanzania
Djibouti	Mauritania	Togo
Eritrea	Mauritius	Uganda
Ethiopia	Mozambique	Zambia
The Gambia	Namibia	Zimbabwe
Ghana	Niger	

IMPACT OF THE FDI ON UNEMPLOYMENT RATE IN COUNTRIES OF WEST BALKAN

Dijana Grahovac, Senad Softić

(1) Central Bank of Bosnia and Herzegovina, Bosnia and Herzegovina
(2) Central Bank of Bosnia and Herzegovina, Bosnia and Herzegovina

Dijana Grahovac
Central Bank of Bosnia and Herzegovina
Bosnia and Herzegovina
jonidg11@yahoo.com

Article info
Paper category: Original
Received: 14.4.2017.
Accepted: 22.7.2017.
JEL classification: G10, G11, G23

ABSTRACT

Modern economy is facing many challenges, in global terms. One of them is the high unemployment rate in many countries. That is a crucial problem, which jeopardises economic, social and political stability. Many factors have an impact to it, and some of them are globalisation, fast development of high technology, global economic crisis and expressed instability of financial markets. In addition, the relation of offer and demand is highly expressed in favour of the offer, the excess of capital at the global level is evident and seeks opportunities of investment as profitable as possible. The situation where the interests of big capital opposed to the costs is becoming more pronounced, which is reflected in the increasing growth of FDI in countries with lower operating costs. On the other hand, underdeveloped and developing countries spread the range of measures for attracting foreign direct investment (FDI), since it is one of the ways for increasing employment rate. This matter has already been the subject of numerous studies, particularly during the period of transition of countries in CEE. However, in modern frameworks, it is actualized again, with different circumstances and motives. In this article global unemployment rates, flows of FDI, their correlation in the Western Balkan countries and comparative analysis with chosen countries are presented. The period observed is 2000-2014. The paper is devoted to the influence of foreign direct investment on labour market. The interdependencies between FDI and unemployment were econometrical. The analysis showed that since 2009, there is a significant reduction of net investments, which is more obvious in the case of FDI due to a lower domestic and external demand as a result of the global economic crisis what led to a decreasing number of employees and rising unemployment. Results, also, show the absence of a positive impact of FDI on employment, which was present in most CEE countries during the transition period, as shown in numerous empirical studies.

Keywords:
Foreign direct investment; Unemployment rate; Global economic crisis; the Western Balkans countries; Economic security

1. INTRODUCTION

It is well known that the four major economic policy objectives are: full employment, price stability, high and sustainable rate of economic growth, and keeping the balance of payments in equilibrium (Benazić, Rami, 2016). Economic theory shows that unemployment, expression of existing imbalances in the economy, is due to multiple causes, both located at the macroeconomic level (e.g. lower effective demand, changing economic structure, asymmetry of the educational system to the labour market needs, fiscal policies that lead to increased fiscal pressure on employers, financial and monetary policies that discourage saving and investment and so on) and at the microeconomic level, resulting essentially in the individual decisions of entrepreneurs on restraining or restructuring of activity, assimilation of technological progress, sources of financing, wage policy, etc. as well as the supply of labour (skill level, adaptability and flexibility of people, individual aspirations and motivations and so on) (Angelescu et al., 2009). In essence, the literature distinguishes between structural and short term unemployment, voluntary and involuntary unemployment, cyclical and seasonal unemployment, etc. (Iacovoiu, 2012).

Numerous authors have studied in their empirical research realm of FDI, and their impact on the employment rate. In principle, all of them have accepted that positive employment effects are usually much higher if the FDI has the form of a Greenfield project. On the other hand when the foreign capital inflow takes the form of buyouts of privatised enterprises, it usually can have minor or even negative influence on employment (Hisarciklilar et all, 2009). Studying comparatively the econometric research on the relationship between investment and employment based on the analysis of individual companies and plants, researchers Stephen Bond and John V. Reenen underlined the increasing importance of multinational companies, concluding the following (Bond, S., Reenen, J.V.,2003): 1. Multinational corporations now account for a significant and growing share of total domestic investment and employment in many countries and 2. Their investment and employment behaviour qualitatively differ from that of purely domestic firms. Positive influence of FDI on employment growth in case of developing countries was found in China. As one of the world's most important recipients of FDI, Chinese labour market has significantly benefited from foreign capital inflow. Karlsson et all analyse FDI inflow and employment growth in China based on firm level evidence, using a large sample of manufacturing firms for the period 1998- 2004. That research shows that FDI have positive effects on employment, which is result of job creation within foreign firms as well as indirect effect of FDI on employment in domestic firms. These researches argue that the high employment growth in foreign firms operating in China is associated with their specific characteristics such as high productivity, capital intensity and their high survival rate. Employment growth is also relatively high in private domestic Chinese firms. In this research both foreign companies and private domestic

firms have relatively high employment growth, as compared to non-private domestic firms. The authors attribute the positive indirect effect of FDI on employment in private domestically-owned firms to positive spill-over effects from FDI (Karlsson et all, 2009). In the case of FDI inflows into CEE, primary motivations for expansion of multinational companies in Central and Eastern Europe (CEE) are market size and low cost production factors (Manea, Pearce, 2004). In case of Polish economy Stawicka investigated the relations between FDI and the situation of labour market. This research was showing some positive implications of foreign capital for labour markets, but the final results were inconclusive. However, this analysis was not based on econometric evaluation (Stawicka, 2009). Balcerzak and Zurek in their empirical research suggest that inflows of foreign direct investment has an impact on unemployment in Poland, while the level of unemployment rate influences on the gross domestic product (Balcerzak and Zurek, 2011). The results of causality tests based on data of 8 EU candidate countries for the period 1994-2001 have suggested that the impact of FDI inflows on economic growth has been negative (Mencinger, 2003). The author attributes this negative effect of FDI to the observation that FDI in these countries have largely taken the form of acquisition of fixed assets owned by public and the proceeds of the sales of these assets were used to finance additional consumption instead of productive investment leading to increase in imports and current account deficits. Stamatiou and Dritsakis (2014) are using several econometric models to evaluate the impact of the FDI on unemployment and economic growth in Greece. The analysis of equitation of FDI in the short run and in the long run shows that an increase of FDI will increase growth and will reduce unemployment. Global financial crisis of the years 2008-2010 has proved that under some unfavourable conditions capital flows and international financial interconnections between countries can lead to serious destabilization of their real economies (Thalassinos, 2008). On the other hand, globalization and the availability of international capital can be a source of great opportunity for developing countries (Balcerzak, Zurek, 2011). According to the results of the regression our hypothesis that FDI have positive impact and are statistically important for decrease the unemployment in the Republic of Macedonia cannot be confirmed (Djambaska, 2015). The impact of FDI to unemployment is not statistically significant. It means that, unemployment is more influenced by other factors.

2. GLOBAL VIEW OF UNEMPLOYMENT RATE AND INFLOW OF FDI

The classical theory, as analysed by Pigou (1933) and Solow (1981), argues that the labour market consists of demand and supply of labour. Demand for labour is a derived demand, obtained from the declining portion of the marginal product of labour. The demand curve is a negative function of real wage in that

if wages increase the quantity demand for labour will decline and the opposite is correct. The supply of labour is derived from worker's choice whether to spend part of time working or not working (leisure). Supply of hours worked is a positive function of the real wage, because if the real wage rises, workers supply more hours of work. In equilibrium, demand and supply of labour are intersected at a clearing point that determines the equilibrium real wage rate and full employment. Unemployment, (Sweezy, 1940) explaining Pigou's Theory of Unemployment, "apart from frictional obstructions…would be non-existent if it were not for the fact that wage-earners habitually stipulate for a rate of wages higher than the 'equilibrium' level." Wicksell thinks that if wages are sufficiently flexible downward, then this decline can maintain full employment (Jonung, 1989). Essentially, for Wicksell the cyclical unemployment was due to the wrong investment of capital. Hayek (Nishhiyama, Leube, 1984) contends that unemployment is due "to a discrepancy between the distribution of labour…between industries…and the distribution of demand among their producers. This discrepancy is caused by a distortion of the system of relative prices and wages." Recently, the unemployment problem has been attributed to the globalization process. For example, shifting production and outsourcing to other countries have generated a high rate of structural unemployment in the U.S. economy, which has contributed for the increase in the rate of unemployment.

As growth slows in emerging and developing economies, social unrest has been on the rise. After a few turbulent years in the aftermath of the global crisis, the expression of dissatisfaction with the economic and social situation had started to decline in many regions (ILO, 2015), but as the economic situation began to deteriorate once more, most notably in developing economies, social unrest became more apparent. When there is a shortage of decent jobs, more workers may give up looking for work. In 2015, the number of working-age individuals who did not participate in the labour market increased by some 26 million to reach over 2 billion. Participation rates are expected to stabilize at 62.8 per cent of the global working-age population (aged 15 years and above) but then to follow a moderate downward trend, reaching 62.6 per cent in 2020 and falling further in subsequent years.

Table 1. provides an overview of trends in the unemployment rate in selected countries in the period 2000-2014. Consistently low unemployment rate can be seen in Switzerland, followed by China and Japan. All three countries had, over the entire period, an unemployment rate below the average unemployment rate at the global level. On the other side are the EU countries, high income countries and countries of Sub-Saharan region, which are permanently above the global average. In the case of the USA, there are two periods to be observed - one before and the other after the onset of the global economic crisis. In the period before the crisis, the unemployment rate was at a low level, below the global average, while in 2010 it reached a rate of 9.70 which makes a137% increase.

Table 1.: Unemployment rate in chosen countries, in the period from 2000 to 2014.

Unemployment rate/country	Switzerland	China	Japan	United States	European Union	Sub-Saharan Africa	World
2000	2,70	4,50	4,80	4,10	9,20	9,10	6,40
2001	2,50	4,50	5,00	4,80	8,70	9,00	6,40
2002	2,90	4,40	5,40	5,90	9,00	8,90	6,50
2003	4,10	4,30	5,20	6,10	9,00	8,70	6,50
2004	4,30	4,30	4,70	5,60	9,20	8,40	6,30
2005	4,40	4,10	4,40	5,20	9,00	8,10	6,20
2006	4,00	4,00	4,10	4,70	8,20	8,20	5,90
2007	3,60	3,80	3,90	4,70	7,20	7,90	5,50
2008	3,40	4,40	4,00	5,90	7,00	8,10	5,70
2009	4,10	4,40	5,00	9,40	9,00	8,10	6,20
2010	4,50	4,20	5,00	9,70	9,60	8,10	6,10
2011	4,00	4,30	4,50	9,00	9,60	8,10	6,00
2012	4,20	4,50	4,30	8,20	10,50	8,10	6,00
2013	4,40	4,60	4,00	7,40	10,90	7,90	6,00
2014	4,50	4,70	3,70	6,20	10,20	8,00	5,90

Source: World Bank, Indicators

As it is mentioned, the influence of FDI on labour market conditions has been extensively studied in recent years. It is commonly stated that FDI usually bring strong positive results for labour market of a beneficiary as it results in decreasing the level of unemployment. As a result, in case of political process and political decision making this argument is very often used as justification for significant government direct financial support for international investors that plan their investments in a given country. Transnational corporation often directly influence government policy to lobby for a more favourable policy mix in the area of regulations, taxation or other form of direct and indirect support by utilizing their influence as potential large employers (Whyman, 2006).

Table 2. showed inflow of FDI in chosen countries, in the period from 2000 to 2014. In the first place, according to the inflow of FDI, is the EU, with 42% compared to the global level of FDI inflows. It is followed by USA and Japan, at a much lower level. This suggests a conclusion that in the EU there has not been significant deindustrialization to countries with lower costs. The data indicate the disparity in the

inflow of FDI, as the first 5 countries (excluded region Sub-Saharan Africa) make up 67% of the global inflow of FDI. Underdeveloped and developing countries still do not have an attractive investment environment.

Table 2.: Foreign direct investments, net inflows in chosen countries, in the period from 2000 to 2014, mil.USD

FDI net/ country	Switzerland	China	Japan	United States	European Union	Sub-Saharan Africa	World
2000	23080	42095	10688	350066	709129	6873	146063
2001	9765	47053	4926	171471	334153	15418	796076
2002	8258	53074	11557	109466	382745	10836	741532
2003	19721	57901	8771	111346	32908	13817	709827
2004	7102	68117	7528	207877	395975	12293	1004236
2005	2665	104108	5460	138327	946476	19584	1522213
2006	53760	133272	-2397	294288	1095616	16415	2136124
2007	48688	156249	21631	340065	1663711	29965	3065353
2008	2991	171535	24625	332734	1077110	38914	2443685
2009	47658	131057	12226	153788	445347	36581	1360736
2010	17670	243703	7440	259344	577509	28283	1858942
2011	23198	280072	-850	25741	851104	40646	2285754
2012	26288	241214	546	243011	733227	36629	2110880
2013	-24898	290928	10648	276978	605892	38471	2086334
2014	18375	268097	18409	207367	391497	44439	1780093
Total	284321	2288475	141208	3221869	10242399	389164	24047848

Source: World Bank, Indicators
Note: Foreign direct investment refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 per cent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship. Data are in current U.S. dollars.

2.1. Unemployment rate and inflow of FDI in the Western Balkan countries

The Western Balkan countries, like others countries in transition, have permanently high unemployment rate. Such a situation is further aggravated by the influence

of the global economic crisis. The lowest unemployment rates were recorded in Croatia and Albania, while the highest were in B&H and FYRM (Former Yugoslav Republic of Macedonia). Serbia and Montenegro are in the middle of the scale. What is of concern is the constantly high unemployment rate in all countries, with the exception of Croatia in 2007-2011, that significantly deviate from the global average (as shown in the next table).

Table 3.: Unemployment rate in The Western Balkan countries, in the period from 2000 to 2014.

Unempl.rate/ countries	Croatia	Bosnia and Herzegovina	Albania	Macedonia, FYR	Serbia	Montenegro
2000	16,10	25,20	13,50	32,20	12,60	19,70
2001	20,50	27,60	22,70	30,50	12,80	21,00
2002	15,10	24,60	13,40	31,90	13,80	21,00
2003	13,90	26,00	12,70	36,70	15,20	21,10
2004	13,70	28,30	12,60	37,20	18,50	19,30
2005	12,60	26,00	12,50	37,30	20,80	19,50
2006	11,10	31,80	12,40	36,00	20,80	18,20
2007	9,60	29,70	13,50	34,90	18,10	19,40
2008	8,40	23,90	13,00	33,80	13,60	16,80
2009	9,10	24,10	13,80	32,20	16,60	19,10
2010	11,80	27,20	14,20	32,00	19,20	19,70
2011	13,40	27,60	14,00	31,40	23,00	19,70
2012	15,80	28,10	13,90	31,00	23,90	19,60
2013	17,30	27,40	16,00	29,00	22,10	19,50
2014	16,70	27,90	16,10	27,90	22,20	19,10

Source: World Bank, Indicators

Table 4. shows the inflow of FDI in WB countries. Evident is a very small amount, which, for the whole region, makes only 9% of the inflow of FDI in the EU. The first is Croatia, followed by Serbia, while other countries have significantly lower levels of FDI inflows. All countries observed intensify their efforts to create an attractive investment environment, but without effective results. Although a free trade zone CEFTA was formed in 2006, inter alia, so as to strengthen the investment environment at the regional level, the Member States pose themselves as competitors rather than partners in the process of attracting FDI. Also, Croatia entered the EU in mid-2013 and it has given some stability to the inflow of FDI, which is absent.

Table 4.: Foreign direct investments, net inflows in chosen countries, in the period from 2000 to 2014, mil.USD

FDI net/ countries	Croatia	Bosnia and Herzegovina	Albania	Macedonia, FYR	Serbia	Montenegro
2000	1056	146	143	217	52	
2001	984	118	207	470	177	
2002	953	268	135	114	491	72
2003	1826	382	178	119	1467	49
2004	1293	890	341	309	958	65
2005	1794	624	262	145	1577	501
2006	3299	846	325	427	4256	622
2007	4567	1842	652	733	4424	937
2008	5188	1005	1241	612	4056	975
2009	3199	138	1343	259	2929	1549
2010	1424	444	1089	301	1693	758
2011	1418	472	1049	508	4930	556
2012	1465	392	920	338	1276	618
2013	937	313	1254	402	2060	446
2014	3960	523	1149	61	1999	497
Total	33363	8403	10288	5015	32345	7645

Source: World Bank, Indicators

3. ECONOMETRIC ANALYSES

Multiple Linear Regression (R) is used to find out the relationship between FDI and unemployment rate. The formula applied is:

$$\ln UR_t = \beta_0 + \beta_1 \ln FDI_t + \varepsilon_t$$

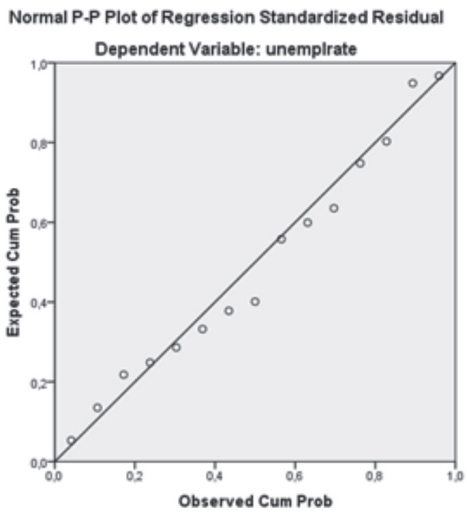
where
β_0= Intercept
β_1= slope (measure the impact of the dependent variable on the independent variable)
FDI_t= Foreign Direct Investment in period t
UR_t= Unemployment Rate in period t
ε_t= Random Error.

Before fitting our regression model we want to investigate how the variables are related one to another. It can be done graphically by constructing scatter plots of all pair-wise combinations of variables in the data frame.

The null hypothesis is the existence of a link of impact of FDI inflows to reduction of the unemployment rate. The null hypothesis is rejected if the F calculated from the data is greater than the critical value of the F-distribution for some desired false-rejection probability (e.g. 0.05). To determine whether a result is statistically significant, a researcher calculates a p-value, which is the probability of observing an effect given that the null hypothesis is true (Devore, 2011). The null hypothesis is rejected if the p-value is less than a predetermined level. Sig. is called the significance level, and is the probability of rejecting the null hypothesis given that it is true (a type I error). It is usually set at or below 5%.

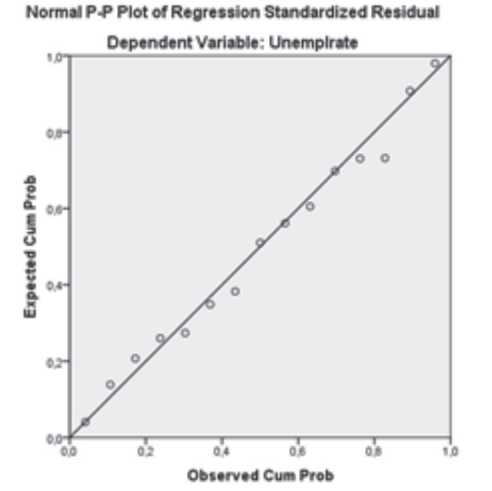
From the figures (Figure 1. - Figure 8.) Normal Probability Plots, a significant deviation can be seen in the case of Albania (Figure 3.), and then of Croatia (Figure 5.), thus indicating the existence of other factors which influence the labour market. Other countries show dispersion around a straight line or a slight deviation.

Figure 1.: Normal P-P Plot of regression, in case of EU



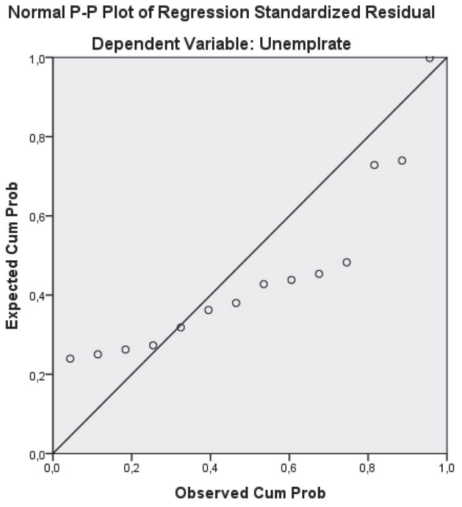
Source: Authors'

Figure 2.: Normal P-P Plot of regression, in case of World



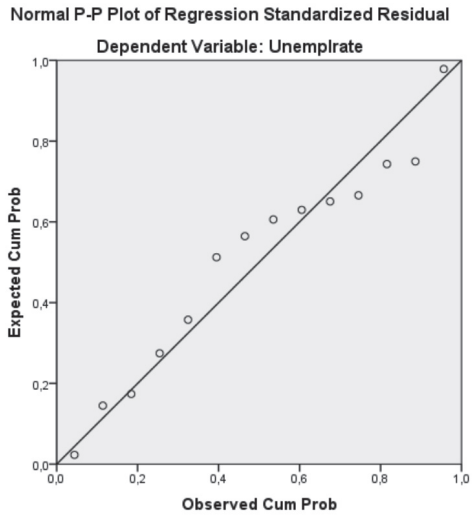
Source: Authors'

Figure 3.: Normal P-P Plot of regression, in case of Albania



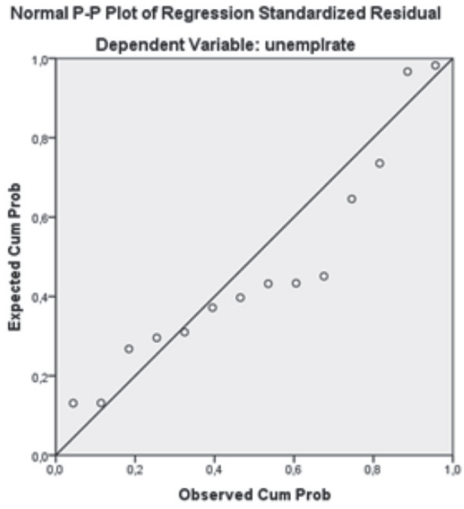
Source: Authors'

Figure 4.: Normal P-P Plot of regression, in case of B&H



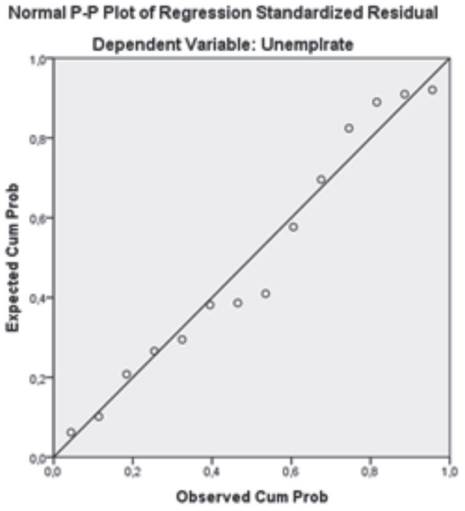
Source: Authors'

Figure 5.: Normal P-P Plot of regression, in case of Croatia



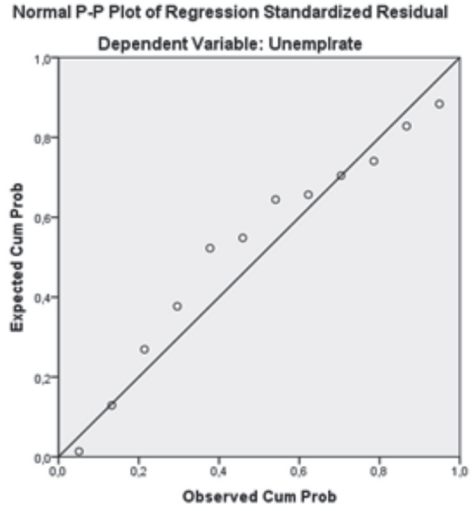
Source: Authors'

Figure 6.: Normal P-P Plot of regression, in case of FYRM



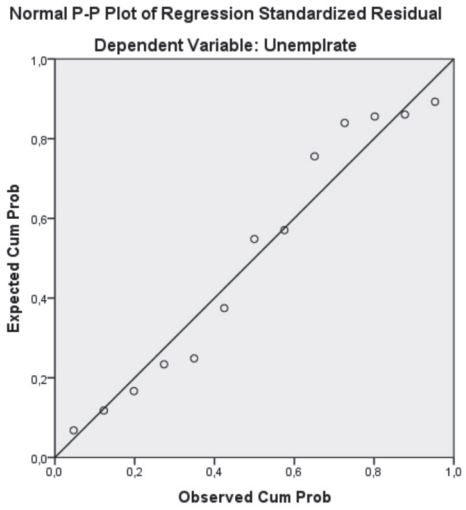
Source: Authors'

Figure 7.: Normal P-P Plot of regression, in case of Montenegro



Source: Authors'

Figure 8.: Normal P-P Plot of regression, in case of Serbia



Source: Authors'

Table 5. shows the results of a regression analysis, wherein:

- R - called the linear correlation coefficient, measures the strength and the direction of a linear relationship between two variables. It can have the following values -1<R<1. The mathematical formula for computing R is:

$$r = \frac{1}{n-1} \Sigma \left(\frac{x - \overline{x}}{s_x} \right) \left(\frac{y - \overline{y}}{s_y} \right)$$

- R^2 is the coefficient of determination, is useful because it gives the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. It is a measure that allows us to determine how certain one can be in making predictions from a certain model/graph. The coefficient of determination is the ratio of the explained variation to the total variation. The coefficient of determination is such that $0 < R^2 < 1$, and denotes the strength of the linear association between x and y. The coefficient of determination represents the percentage of the data that is the closest to the line of best fit. For example, if R = 0.922, then $R^2 = 0.850$, which means that 85% of the total variation in y can be explained by the linear relationship between x and y (as described by the regression equation). The other 15% of the total variation in y remains unexplained.
- The adjusted R-squared compares the descriptive power of regression models that include diverse numbers of predictors. Every predictor added to a model increases R-squared and never decreases it. Thus, a model with more terms may seem to have a better fit just for the fact that it has more terms, while the adjusted R-squared compensates for the addition of variables and only in-

creases if the new term enhances the model above what would be obtained by probability and decreases when a predictor enhances the model less than what is predicted by chance. In an over-fitting condition, an incorrectly high value of R-squared, which leads to a decreased ability to predict, is obtained. This is not the case with the adjusted R-squared.

- The threshold of significance is the condition Sig. < 0,05
- The coefficient R (beta) is preferably as large as possible in the negative direction, i.e. that the relationship between FDI inflow and the unemployment rate is inversely proportional. This is evident at the global level (coefficient is negative and very high - -0.95), indicating a very strong relation of impact of FDI inflows to reduction of the unemployment rate. This result further confirmed R Square, Adjusted R Square and the level of significance (0,00). In the case of the EU, there is also a negative coefficient, in the range of significant influence relation, with somewhat lower other indicators and satisfaction of conditions of significance level. When it comes to the WB countries, the significance condition is only met by Croatia with the R coefficient of -0.645, which indicates the significant impact of FDI inflows to unemployment reduction. Albania has a negative R coefficient, as well as drastic departure from the threshold of significance, suggesting that other factors influence the labour market. Montenegro has good indicators, but does not meet the level of significance. In case of FYRM there is no reported relation of influence, as evidenced by the significant deviation from the threshold of significance, while the situation is very similar when speaking about Serbia. The coefficient of 0,413 at B&H shows the impact of an increase in the FDI inflow to the increase in the unemployment rate. One of the factors for this situation is inefficient privatization, thus privatising some large companies through FDI, which then fired employees of even been liquidated.

Table 5.: Result of multiple linear regression

Indicator/country	R (beta)	R Square	Adjusted R Square	Sig.
Albania	-0,10	,000	-,083	,972
B&H	,413	,170	,101	,142
Croatia	-,645	,416	,368	,013
Serbia	,197	,039	-,049	,519
Montenegro	-,454	,206	,126	,139
FYRM	,048	,002	-,081	,869
World	-,946	,895	,886	,000
EU	-,583	,340	,289	,023

Source: Authors' calculation

4. CONCLUSION

One of the key challenges of most modern countries is high unemployment rate, which creates social, economic and political pressure on the creators of economic policies. EU countries have not yet economically recovered from the devastating effects of the global economic crisis and the economies of member countries are still in the phase of recovery or stagnation. Such a situation in the EU is transmitted to the WB countries, which are intensively associated with the EU. The results of the empirical analysis of the impact of FDI on the unemployment rate indicate significant deviations of influence in the WB countries in relation to the global and EU level. The conclusion is that no country of WB is effectively implement structural reforms and the privatization process has not made the required results. In all the above countries is a small number of successful privatized enterprises, especially large enterprises of strategic significance, which are, by definition, has a large number of employees. Economic uncertainty is very strong in all countries and leads to political instability, as well as the expressed rates of youth migration to EU countries. Only Croatia shows a positive impact of FDI on the unemployment rate, but this rate is still high. In the case of other countries, there is the conclusion of the inadequacy of the FDI inflow structure and also the significant presence of other factors influencing the labour market in the countries studied. Given the persistent lack of capital and very high unemployment, all countries will, in future, need to find models of economic policies that will work towards increase of FDI inflows and reduction of the unemployment rate, so as to achieve economic, political, and social security. In modern conditions expressed financial instability and continuous large supply of favourable investment environment on a global scale, this process is not simple and requires raising the level of competitiveness at a significantly higher level.

REFERENCES

Angelescu,C.(coord.), Dinu, M. (coord.), Gavrila, I.(coord.) and Popescu, C.(coord.),. Economie, Editura Economica, Bucuresti., (2009): 406-407

Benazić, Manuel, and Jasmin Rami. *"Monetary policy and unemployment in Croatia." Economic Research-Ekonomska Istraživanja 29,* no. 1 (2016): 1038-1049

Bond, Stephen, and John Van Reenen. *"Microeconometric models of investment and employment." Handbook of econometrics 6 (2007): 4417-4498*

Manea, Julia, and Robert Pearce. *"Industrial restructuring in economies in transition and TNCs' investment motivations." Transnational Corporations 13,* no. 2 (2004): 7-28

Hisarciklilar, Mehtap, Derya Gultekin-Karakas, and Ahmet Atil Asici. *"Can FDI be a Panacea for Unemployment?: The Turkish Case." In Labor and employment relations in a globalized world,* pp. 43-70. Springer International Publishing, 2014. Available at http://www.esam.itu.edu.tr/NottinghamWorkshopPapers/Hisarciklilar-Karakas-Asici-NW.pdf.

Karlsson, Sune, Nannan Lundin, Fredrik Sjöholm, and Ping He. *"Foreign firms and Chinese employment." The World Economy 32,* no. 1 (2009): 178-201

Balcerzak, Adam P., and Miroslawa Zurek. *"Foreign direct investment and unemployment: VAR analysis for Poland in the years 1995-2009." European Research Studies 14,* no. 1 (2011): 3

Thalassinos, Eleftherios. *"Trends and Developments in the European Financial Sector." European Financial and Accounting Journal 3,* no. 3 (2008): 44-61

Balcerzak, Adam P., and Miroslawa Zurek. *"Foreign direct investment and unemployment: VAR analysis for Poland in the years 1995-2009." European Research Studies 14,* no. 1 (2011): 3

Mencinger, Jože. *"Does foreign direct investment always enhance economic growth?." Kyklos 56,* no. 4 (2003): 491-508

Whyman, Philip, and Mark Baimbridge. Labour market flexibility and foreign direct investment. DTI, 2006.

Stamatiou, Pavlos, and Nikolaos Dritsakis. *"The Impact of Foreign Direct Investment on the Unemployment Rate and Economic Growth in Greece: A Time Series Analysis." In International Work-Conference on Time Series Analysis (ITISE),* vol. 1, pp. 97-108. 2014.

Djambaska, E., Foreign direct investment and unemployment evidence from the Republic of Macedonia. International Journal of Economics, Commerce and Management. United Kingdom, Vol. III, Issue 12. 2015.

Jonung, Lars. *"Knut Wicksell on unemployment." History of Political Economy 21,* no. 1 (1989): 27-42

Nishiyama, C., and K. Leube. *"The Essence of Hayek. Hoover Institution: Stanford University.",* 1984.

Sweezy, Paul M. *"Professor Pigou's theory of unemployment." Journal of Political Economy 42,* no. 6 (1934): 800-811

Devore, Jay L. Probability and Statistics for Engineering and the Sciences. Cengage learning, 2011.

RELATIONSHIP BETWEEN INWARD FOREIGN DIRECT INVESTMENT, DOMESTIC INVESTMENT, FORMAL AND INFORMAL INSTITUTIONS: EVIDENCE FROM CHINA

Waqar Ameer, Helian Xu

(1) School of Economics and Trade, Hunan University,
Yuelushan, Changsha, Hunan Province, People's Republic of China
(2) School of Economics and Trade, Hunan University
Yuelushan, Changsha, Hunan Province, People's Republic of China

Waqar Ameer
School of Economics and Trade, Hunan University
Yuelushan, Changsha, Hunan Province, People's Republic of China
waqar.ameer@yahoo.com

Article info
Paper category: Original Scientific Paper
Received: 4.7.2017.
Accepted: 25.7.2017.
JEL classification: C22, F21, O10

ABSTRACT

This study examines relationship between Inward FDI and domestic investment in China, using co-integration and Granger causality analysis (Including bivariate and multivariate Granger causality models). We have used auto-regressive distributed lags(ARDL) econometric methodology technique to define relationship between inward FDI and domestic investment using time series data for China. Our study examines long run effects of FDI inflows on domestic investment over time span 1990-2014 for China using informal, formal institutions and key macroeconomic variables as control variables in the model. The results suggest that conclusions drawn from bivariate model may not be valid because of omission of important control variables. Our results of multivariate model show that there is positive unidirectional causality running from IFDI to DI in the long run. In the short run, both inward FDI and domestic investment do not allow Granger causality.

Keywords:
Inward FDI; Domestic Investment; Cointegration; Time Series Data

1. INTRODUCTION

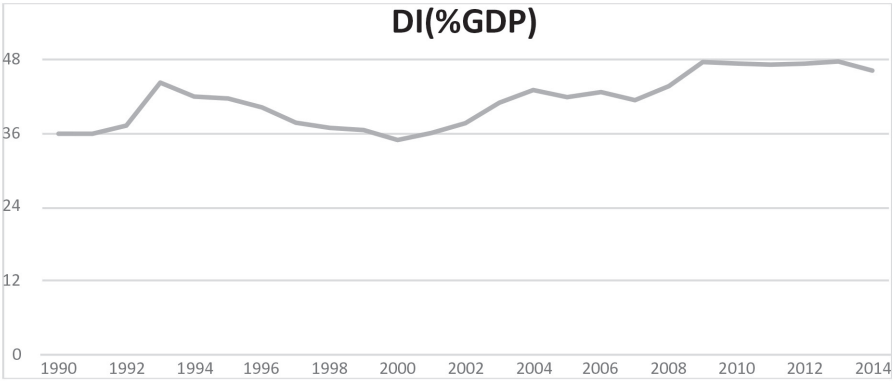
Since FDI in global economy are the most important form of international business activity **and** investment is a key factor of economic development, analysis of the impact of FDI on domestic investment is theoretically justified (Derado, 2013). Foreign direct investment (IFDI) inflows has increased US$ 2.002 trillion in 2007 in the world as compared to US$ 13.346 billion in 1970 (UNCTAD, 2013). The relationship between FDI inflows and domestic investment (DI) is still controversial. Some studies such as Xu and Wang (2007) and Chang (2010) found that FDI inflows have crowded in DI while some studies such as Adams (2009) found that FDI inflows have crowded out DI. Sağlam and Yalta (2011) found that there was no relationship between FDI inflows and DI. Some studies such as Agosin and Machado (2005) and Wang (2010) found that FDI inflows have had neutral, crowding-in effect or crowding-out effect on DI depending on country/country group economic structure, macro-economic environment, and the firm's underlying motives to invest abroad. The macroeconomic relationship between FDI inflows and DI are theoretically inconclusive and thus become an empirical issue. The effects of FDI on domestic investment is controversial issue and still inconclusive. Some research studies conclude that foreign direct investment reduces domestic investment, while some proportion of studies find that FDI are positively associated with domestic investment and some find no effect.

China is the largest transition economy and the second highest FDI recipient in the world. Using foreign investment to improve its international competitiveness is a major pillar of China's reform and "open-door" policy (Fukasaku & Wall, 1994; Lardy, 1994; Naughton, 1997; Buckley, Clegg, & Wang, 2006). Since its reform and "open-door" policy was implemented in 1978, China has attracted FDI globally and has become one of the world's largest FDI destinations. In last two decades, there has been a dramatic increase in FDI inflows and outflows in China, following the 1999 implementation of national policy encouraging DI to "go out". Lee, Syed, and Liu (2013) suggest that the Chinese growth model is highly dependent on the accumulation of DI. Best to our knowledge, no previous studies have measured long run effects of FDI inflows (IFDI) on domestic investment (DI) for China using formal institutions, informal institutions and key macroeconomic variables as control variables in the model. Thus, we bridge the gap in previous research literature by adding formal and informal institutions as key control variables in the model to measure role of institutions in defining accurate relationship between FDI inflows and domestic investment in the economy. Thus, this will be the contribution of our research study.

Our study contributes to the existing research literature by conduct analyses using a macroeconomic perspective to investigate the impact of FDI inflows on DI in China. To the best of our knowledge, no previous research studies have analyzed the impact of FDI inflows on DI at the macro-economic level in the case of China using bivariate and multivariate models. You and Solomon (2015) analyzed the impact

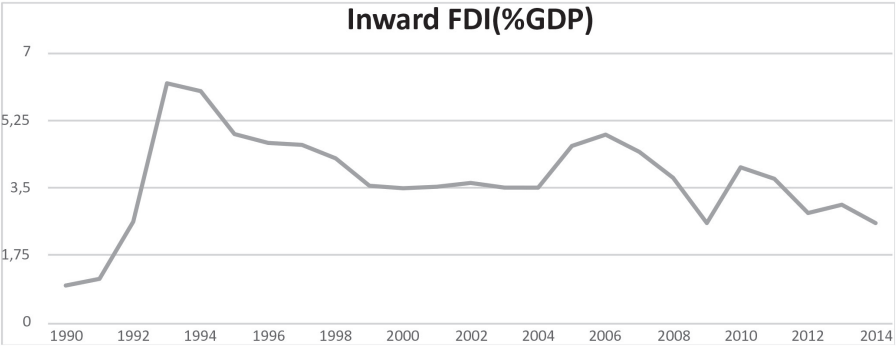
of FDI outflows on DI in China using industry-level data. Here, we will bridge this shortcoming in the existing literature by analyzing the effect of FDI inflows on DI at the macroeconomic level by introducing new and interesting findings on the particular case of China. Therefore, this study addresses this question with the data of top highest recipient of FDI inflows Asian economy: China. Figure 1. provides a time series plot of China's DI (%GDP) measured as Gross capital formation (%GDP) over the time period 1990 to 2014. Figure 2. provides a time series plot of China's net inflows of FDI as measured as a percentage of GDP over the time period 1990 to 2014.

Figure 1.: Time series plot of China's domestic investment measured as percentage of GDP



Source: World Development Indicators online (www.worldbank.org)

Figure 2.: Time series plot of China's net inflows of foreign direct investment measured as percentage of GDP



Source: United Nations Conference on Trade and Development (www.unctad.org)

The rest of the paper is presented as follows. Section 2. Literature review, Section 3. describes the data sources and econometric methodologies. Section 4. presents result findings of the analysis. Section 5 concludes the paper.

2. LITERATURE REVIEW

Lean and Tan (2010) analyze relationships between FDI, Domestic investment and Economic growth in Malaysia and these three variables are cointegrated in the long-run in this study. Annual time series data from 1970 to 2009 were used and Vector autoregressive (VAR) methodology is applied. The empirical results of this study show that an increase of FDI will bring positive impact to the domestic investment. In simple words, FDI crowds in domestic investment and there appears complementary effect from FDI to domestic investment.

Prasanna (2010) analyze direct and indirect impact of FDI on domestic investment in India. Prasanna (2010) covered 16-year period from 1991-92 to 2006-07. This study finds that the direct impact of FDI inflows on domestic investment in India is positive but the indirect impact is 'neutral' on the domestic investment in the long run. The study finds no evidence that increase in domestic investment due to FDI inflows is greater than the amount of the FDI inflows in India. Bayraktar and Yalta (2011) found relationship among FDI, private domestic investment and public domestic investment in Turkey. They considered period from 1970 to 2009 using annual data incorporated into multivariate VAR framework. Their findings indicate that there is no long-run relationship between FDI, public investment and private investment, indicating the poor contribution of FDI to the Turkish investment path. The lack of interaction between FDI and domestic investment, which impedes the contribution of FDI to economic growth from capital accumulation channel, questions the benefits of FDI.

The effects of FDI on domestic investment has been analyzed by many studies for developing countries. Reviews by AL-Sadig (2013) and Arndt et al (2007) conclude that these studies use macro-level data or firm level data and their effects been positive, negative or neutral, thus overall results are inconclusive. Recent studies by Hejazi and Pauly (2003); Arndt et al. (2007) and Al-Sadig (2013) recommend that combination of home and foreign production may cause different potential effects by FDI outflows on domestic investment, depending on the motives for overseas investment. Referring to four OFDI motives i.e. (resource seeking, marketing seeking, efficiency-seeking and strategic asset seeking) identified by Dunning (1993), they point out that outward FDI may influence domestic investment positively or negatively or neutrally. Given that financial resources are scarce and financial markets are imperfect, domestic markets will have less financial liquidity available to fund new investment projects. The negative effects of outward FDI on domestic investment would be strong if availability of capital is scarce and capital outflows are financed internally. However, in countries where saving is abundant, the negative impact of outward FDI on domestic investment may be offset or may not be evident.

3. DATA AND METHODOLOGY

In this study, we have used net IFDI (% GDP), Trade Openness (%GDP), gross capital formation (GCF), GDP deflator, and Gross domestic savings (%GDP). Gross domestic savings (SAVINGS), export (EX), import (IM), GCF and trade openness (OPEN) are measured at current US$. Annual data from 1990 to 2014 are obtained from UNCTAD FDI database. The starting period of this dataset is determined by the earliest availability date of the data. The sum of EX and IM divided by GDP is used as a proxy for trade openness (OPEN). The proxy for DI (%GDP) is defined as GCF (% GDP). We are using economic freedom (EF) as a proxy for formal institutions. Economic freedom data is taken from Fraser institute, economic freedom of the world. In this study, I have used net IFDI (% GDP), gross capital formation (GCF) as percentage of GDP, and Trade (% GDP). Annual data from 1990 to 2014 are obtained from World Development Indicators, World Bank Database. The starting period of this dataset is determined by the earliest availability date of the data. We are using gross capital formation (GCF) as proxy for domestic investment (DI). Following the previous research studies, this study constructs index of CULTURE by applying principle component analysis (PCA) using four basic components trust, respect, obedience and self-determination. We are using CULTURE proxy for informal institutions. Data is available in five waves spanning from 1990 to 2014, where single wave reflect average of five years for country's economic culture's value. These components are taken from World Values Survey (WVS) Database and are considered important in shaping human behavior especially economic behavior.

We use the bounds testing approach to co-integration developed by Pesaran, Shin and Smith (2001) to test for the existence of a long-run relationship. This test is based on the autoregressive distributed lag (ARDL) framework. It is used here because Pesaran and Shin (1999) show that the ordinary least squares (OLS) estimators of ARDL parameters are $\sqrt{n}$-consistent, where n is the sample size and the estimators of the long-run coefficients are super-consistent in small sample sizes. Furthermore, this approach can be used irrespective of whether the variables are integrated of $I(1)$, $I(0)$, or mutually co-integrated. Many unit root tests are available. In this study, we have used only two of them, the augmented Dickey and Fuller (1979, 1981) test (ADF test) and the test proposed by Kwiatkowski et al. (1992; KPSS test). The null hypothesis of the ADF test is that a series is non-stationary, whereas the null hypothesis of the KPSS test is that a series is stationary. Both tests are performed with intercepts and time trends. The number of lags in the ADF test is selected based on the Schwarz Information Criterion. The choice of bandwidth parameter in the Bartlett kernel based sum-of-covariance estimator in the KPSS test is selected based on the Newey-West data-based automatic bandwidth parameter method. The results of the unit root tests are reported in Table 1. Both the ADF and KPSS tests suggest that DI, EF, OPEN, CULTURE and SAVINGS are $I(1)$. The results of the unit root tests for

ADF and KPSS suggest that IFDI is I(0). Both the ADF and KPSS test results suggest that some variables are integrated of *I*(0) or *I(1)* respectively.

These control variables (EF, OPEN, CULTURE, SAVINGS) are chosen based on existing empirical work. Some research studies have also highlighted the effects of trade openness (OPEN) on DI. OPEN is expected to have a positive impact on DI through technology and knowledge spillover. However, it may also exert a negative impact on DI if consumers prefer imported products (Ndikumana, 2000). Alabdeli (2005) analyzed the effects of several macroeconomic variables (i.e., exports, investment) on economic growth in 21 developing countries, using time series data from 1960 to 2001. This study concluded that DI has a positive and significant relationship with economic growth. Frankel (1997) analyzed the impact of economic factors, including investment in the public and private sector, on economic growth in East Asian economies. This study concluded that investment is among the most important determinants of economic growth in the long run.

4. RESULTS

To avoid the problem associated with conflicting results provided by conventional unit root tests-such as those found by Dickey and Fuller (1979, 1981) and Kwiatkowski, Phillips, Schmidt and Shin (1992), in this study when these tests are used jointly, we use the ARDL testing approach for co-integration. Firstly, we consider only the bivariate long-run relationship between IFDI and DI. Then, four additional variables (i.e., EF, OPEN, CULTURE and SAVINGS) are added as control variables in the model to find long-run relationship between IFDI and DI in order to capture country-specific effects.

Table 1.: Results of the unit root tests.

	ADF		KPSS	
	Level	**First Difference**	**Level**	**First Difference**
IFDI	-4.2428***[1]	-3.8632*** [1]	0.1046[2]	0.2221[2]
DI	-1.3134[0]	-4.1700***[0]	0.5101** [3]	0.0769[0]
EF	-1.4179[0]	-5.2849***[0]	0.6672**[3]	0.2564[5]
OPEN	-1.5704[0]	-3.8688***[0]	0.4567**[3]	0.1607[1]
CULTURE	-1.6522[0]	-4.5885*[0]	0.1787**[3]	0.3144[0]
SAVINGS	-1.5101[1]	-3.1568**[0]	0.5632**[3]	0.0888[2]

Source: Authors' calculation
Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Values in square brackets are either the number of lagged first differences used in the ADF test or the choice of bandwidth parameter in the Bartlett kernel-based sum-of-covariances estimator in the KPSS test. The number of lags were selected based on the Schwarz Information Criteria.

ADF: augmented Dickey and Fuller test; KPSS: Kwiatkowski-Phillips-Schmidt-Shin test; IFDI: inward foreign direct investment; DI: domestic investment; EF: economic freedom; OPEN: trade openness; SAVINGS: gross domestic savings.

In the bivariate model, the bounds test examines whether a long-run relationship exists in one of the following unrestricted error correction models:

$$\Delta IFDI_t = a_0 + \sum_{i=1}^{n} a_{Gi}\,\Delta IFDI_{t-i} + \sum_{i=0}^{n} a_{Fi}\,\Delta DI_{t-i} + a_1\,IFDI_{t-1} + a_2\,DI_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta DI_t = b_0 + \sum_{i=1}^{n} b_{Fi}\,\Delta DI_{t-i} + \sum_{i=0}^{n} b_{Gi}\,\Delta IFDI_{t-i} + b_1\,DI_{t-1} + b_2\,IFDI_{t-1} + \varepsilon_{2t} \quad (2)$$

In equation (1), the null hypothesis of no co-integration amongst the variables is H_o: $a_1=a_2=0$ against the alternative hypothesis of H_1: $\{a_1\neq 0\} \cup \{a_2\neq 0\}$. In equation (2), the null hypothesis of no co-integration amongst the variables is H_o: $b_1=b_2=0$ against the alternative hypothesis of H_1: $\{b_1\neq 0\} \cup \{b_2\neq 0\}$. The null hypothesis can be tested with the *F*-test. The *F*-test has a non-standard distribution. Pesaran et al. (2001) provided the critical values at table CI (iii). At $k=1$, the critical values bounds are (4.04, 4.78) at the 10% level of significance, (4.94, 5.73) at the 5% level of significance, and (6.84, 7.84) at the 1% level of significance. To minimize the loss of degrees of freedom and to fulfil the assumption of no autocorrelation required by the ARDL test, the value of *n* corresponding to each equation is increased until the Breusch-Godfrey Lagrange multiplier test is unable to reject the null of no autocorrelation with a lag order 1 at the 5% level of significance. The results of the bounds test are reported in Table 2.

Table 2.: The results of the bounds test for co-integration.

Equation	Ho	n	F-Value
(1)	a1=a2=0	1	3.0379
(2)	b1=b2=0	1	2.0241

Source: Authors' calculation

Note: *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. The number of lags was selected based on the Schwarz Information Criteria.

The results in Table 2. indicate that we do not reject the null hypothesis of no co-integration at the 1%, 5%, and 10% levels of significance for equations (1) and (2), respectively. Therefore, there is no long-run relationship between IFDI and DI when either IFDI or DI is assigned as the dependent variable.

Table 3.: The results of the short-run Granger causality test.

Dependent variable	ΔIFDI	ΔDI
ΔIFDI		0.0245[0]
ΔDI	-0.1176[3]	

Source: Authors' calculation
Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The number in square brackets is the value of n selected based on either equation (1) or equation (2). The number of lags was selected based on Schwarz Information Criteria. IFDI: inward foreign direct investment; DI: direct investment.

$$\Delta IFDI_t = k_0 + \sum_{i=1}^{n} k_{Gi}\,\Delta IFDI_{t-i} + \sum_{i=0}^{n} k_{Fi}\,\Delta DI_{t-i} + \sum_{i=0}^{n} k_{Di}\,\Delta EF_{t-i} + \sum_{i=0}^{n} k_{Oi}\,\Delta OPEN_{t-i}$$

$$+ \sum_{i=0}^{n} k_{Pi}\,\Delta CULTURE_{t-i} + \sum_{i=0}^{n} k_{zi}\,\Delta SAVINGS_{t-i} + k_1 IFDI_{t-1} + k_2 DI_{t-1} + k_3 EF_{t-1} + k_4 OPEN_{t-1} + k_5$$

$$CULTURE_{t-1} + k_6 SAVINGS_{t-1} + \varepsilon_{3t} \qquad (3)$$

$$\Delta DI_t = m_0 + \sum_{i=1}^{n} m_{Fi}\,\Delta DI_{t-i} + \sum_{i=0}^{n} m_{Gi}\,\Delta IFDI_{t-i} + \sum_{i=0}^{n} m_{Di}\,\Delta EF_{t-i} + \sum_{i=0}^{n} m_{Oi}\,\Delta OPEN_{t-i}$$

$$+ \sum_{i=0}^{n} m_{Pi}\,\Delta CULTURE_{t-i} + \sum_{i=0}^{n} m_{zi}\,\Delta SAVINGS_{t-i} + m_1 DI_{t-1} + m_2 IFDI_{t-1} + m_3 EF_{t-1} + m_4 OPEN_{t-1} +$$

$$m_5 CULTURE_{t-1} + m_6 SAVINGS_{t-1} + \varepsilon_{4t} \qquad (4)$$

In equation (3), the null hypothesis of no co-integration amongst the variables is H_o: $k_1=k_2=k_3=k_4=k_5=k6=o$ against the alternative hypothesis of H_1: $\{k_1\neq o\} \cup \{k_2\neq o\} \cup \{k_3\neq o\} \cup \{k_4\neq o\} \cup \{k_5\neq o\} \cup \{k_6\neq o\}$. In equation (4), the null hypothesis of no co-integration amongst the variables is H_o: $m_1=m_2=m_3=m_4=m_5=m_6=o$ against the alternative hypothesis of H_1: $\{m_1\neq o\} \cup \{m_2\neq o\} \cup \{m_3\neq o\} \cup \{m_4\neq o\} \cup \{m_5\neq o\} \cup \{m_6\neq o\}$. From the table CI(iii) of Pesaran *et al.* (2001), at k=5 the critical bounds are (2.26,3.35) at the 10% level of significance, (2.62,3.79) at the 5% level of significance, and (3.41,4.68) at the 1% level of significance. Similarly, the value of n in each equation is determined by the Breusch-Godfrey Lagrange multiplier test. The results of the bounds test in multivariate model are reported in Table 4.

Table 4.: The results of the bounds test for co-integration.

Equation	Ho	n	F-value
(3)	$k_1=k_2=k_3=k_4=k_5=0$	2	7.4618***
(4)	$m_1=m_2=m_3=m_4=m_5=0$	2	16.0895***

Source: Authors' calculation
Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

The results in Table 4. show that the null hypothesis of no co-integration is rejected at the 1% level for equation (3) and (4). It is clear that with the presence of control variables, there is a long-run relationship between IFDI, DI, EF, OPEN, CULTURE and SAVINGS, when DI or IFDI is assigned as the dependent variable. To obtain the long-run coefficients, the ARDL model is estimated as shown here:

$$(1—c_1L—\ldots—c_pL^p)\,IFDI_t = d_0 + (1—d_1L—\ldots—d_qL^q)DI_t + (1—f_1L—\ldots—f_sL^s)EF_t + (1—h_1L—\ldots—h_jL^j)OPEN_t + (1—e_1L—\ldots—e_rL^r)CULTURE_t + (1—k_1L—\ldots—k_gL^g)SAVINGS_t + \varepsilon_{5t} \quad (5)$$

$$(1—\theta_1L—\ldots—\theta_uL^u)DI_t = \phi_0 + (1—\phi_1L—\ldots—\phi_vL^v)\,IFDI_t + (1—\alpha_1L—\ldots—\alpha_xL^x)EF_t + (1—\beta_1L—\ldots—\beta_yL^y)\,OPENt + (1—\gamma_1L—\ldots—\gamma_zL^z)\,CULTURE_t + (1—\gamma_1L—\ldots—\gamma_hL^h)\,SAVINGS_t + \varepsilon_{6t} \quad (6)$$

The Optimal lags of the ARDL model are chosen based on Schwarz information criteria. Because of small sample size and annual data used in this study, the maximum possible values of *u, v, x, y, and z* in equation (6) are set at 2. The selected values of *u, v, x, y, z and h* are 2,2, 1, 2,2, and 2, respectively. The maximum possible values *of p, q, s, j, r and g are also set at 2 in equation (5) and selected values of p, q, s, j, r and g are 1,2,1,0,1, and 2, respectively in equation (5). The* reparametrized equation (5) and equation (6) with long-run coefficients is reported in Table 5. The statistically significant and negative long-run coefficient of the independent variable (IFDI) indicates that IFDI has negative effects on DI (Dependent variable) in equation (6). The long-run coefficient of formal institutions (EF) has significant and positive effects on domestic investment (DI) but long run coefficient of informal institutions (CULTURE) has insignificant effects on domestic investment (DI). The long-run coefficients of SAVINGS and OPEN (trade openness) have significant effects on DI.SAVINGS are positively associated with DI and OPEN (trade openness) is negatively correlated with DI in the long run. The long-run coefficient of independent variable (DI) indicates that DI has insignificant effects on IFDI (Dependent variable) in equation (5). The control variables in the model such as EF, OPEN, CULTURE and SAVINGS have also insignificant effects on IFDI (dependent variable) in equation (5).

Table 5.: Estimated long-run coefficients.

	Dependent variable	
	IFDI	**DI**
Constant	20.4729(0.8208)	-7.7558***(-3.7920)
IFDI		-0.4642 (-1.4879)
DI	1.5388(0.7414)	
EF	-4.9511(-0.8784)	0.9939***(3.2568)
OPEN	0.0961(0.4557)	-0.2159*** (-7.9061)
CULTURE	1.5788(0.4635)	-0.2704 (-0.6434)
SAVINGS	-1.2975(-0.6868)	1.2316*** (13.9353)

Source: Authors' calculation
Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. T-ratios are given in parentheses.

Based on the results of the bounds test in the multivariate framework, the Granger causality tests are implemented in the models shown here:

$$\Delta IFDI_t = q_0 + \sum_{i=1}^{n} q_{Gi}\,\Delta DI_{t-i} + \sum_{i=0}^{n} q_{Fi}\,\Delta IFDI_{t-i} + \sum_{i=0}^{n} q_{Di}\,\Delta EF_{t-i} + \sum_{i=0}^{n} q_{Oi}\,\Delta OPEN_{t-i}$$

$$+ \sum_{i=0}^{n} q_{Pi}\,\Delta CULTURE_{t-i} + \sum_{i=0}^{n} q_{wi}\,\Delta SAVINGS_{t-i} + + \tau\, ECT_{qt-1} + \varepsilon 7_t$$

(7)

$$\Delta DI_t = p_0 + \sum_{i=1}^{n} p_{Gi}\,\Delta DI_{t-i} + \sum_{i=0}^{n} p_{Fi}\,\Delta IFDI_{t-i} + \sum_{i=0}^{n} p_{Di}\,\Delta EF_{t-i} + \sum_{i=0}^{n} p_{Oi}\,\Delta OPEN_{t-i}$$

$$+ \sum_{i=0}^{n} p_{Pi}\,\Delta CULTURE_{t-i} + \sum_{i=0}^{n} p_{yi}\,\Delta SAVINGS_{t-i} + \gamma ECT_{pt-1} + \varepsilon 8_t$$

(8)

ECT_{qt-1}*(7) and* ECT_{pt-1}*(8)* are the error correction terms. A significant error correction coefficient indicates that long-run Granger causality from the independent to the dependent variables, where long-run Granger non-causality is regarded as equivalent. Similarly, the Breusch-Godfrey Lagrange multiplier test is again used to determine the value of n in each equation. The results show that there is long run unidirectional causality running from IFDI to DI in equation (8) as coefficient of error correction term is negative and insignificant as reported in Table 6.

Table 6.: Results of Granger's causality test: long-run.

Equation	Coefficient of error correction term
(7)	-0.152079(-0.8213)
(8)	-1.519144***(-8.6696)

Source: Authors' calculation
Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. T-ratios are given in parentheses.

We have used the approaches of Ram (1988) and Zhang (2001) to determine the sign of the short-run Granger causality. The sign of the short-run Granger causality from an independent variable to dependent variable is determined by adding up the coefficients of all lagged first differences of the independent variable. The results of the short-run Granger causality test are reported in Table 7. Based on the *F*-test, we cannot find evidence to support the existence of short-run Granger causality between IFDI and DI.

Table 7.: The results of the short-run Granger causality test.

Dependent variable	ΔIFDI	ΔDI
ΔIFDI		-0.764[2]
ΔDI	0.234[2]	

Source: Authors' calculation
Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The number in square brackets is the value of n selected based on either equation (7) or (8). The number of lags is selected based on the Schwarz Information Criteria.

5. CONCLUDING REMARKS

This paper examined the short- and long-run relationship between IFDI and DI with bivariate and multivariate frameworks and analyses relationship between Inward FDI and domestic investment in China, using co-integration and Granger causality analysis (Including bivariate and multivariate Granger causality models). We have applied auto-regressive distributed lags (ARDL) technique to derive relationship between inward FDI and domestic investment using time series data for China. The obtained results in the bivariate model conclude that there is no short- and long-run relationship between IFDI and DI, using Granger causality analysis. Bivariate model results can be unreliable due to the omission of important control variables. Thus, important control variables are paramount in the model to derive unbiased and reliable findings. Siliverstovs and Herzer (2006) explain that the results of Granger causality tests may not be valid if the model suffers from the omission of important independent variables. However, after controlling for country-specific effects (i.e., with the inclusion of EF, OPEN, CULTURE, SAVINGS) in the multivariate frame-

work, the results of the multivariate model show that there is positive unidirectional causal relationship from IFDI to DI in the long run. In the short-run, DI and IFDI do not allow Granger causality. It implies that the bivariate framework is miss-specified in terms of omitting important independent variables. Here, we analyzed the macroeconomic impact of FDI inflows on DI for a strongly emerging Chinese economy. From our dataset, we find when FDI inflows increase, DI also behaves in similar way, which also strongly aligns with our econometric findings that there is positive, long-run, unidirectional causality running from IFDI to DI. Our findings instead strongly support that the idea that increased IFDI is the cause of increased DI in the long-run.

REFERENCES

Alabdeli, A. *"Expectation of the impact of exports on economic growth in developing countries: An Econometric and Analytical study." Al-Azhar University. Saleh Salem Centre Journal for Islamic Economy. 9th year 27 (2005): 215-259*

Agosin, Manuel R., and Roberto Machado. *"Foreign investment in developing countries: does it crowd in domestic investment?." Oxford Development Studies 33,* no. 2 (2005): 149-162

Andersen, Palle Schelde, and Philippe Hainaut. Foreign direct investment and employment in the industrial countries. No. 61. Bank for International Settlements, Monetary and Economic Department, 1998.

Arndt, Christian, Claudia M. Buch, and Monika E. Schnitzer. *"FDI and domestic investment: an industry-level view." The BE Journal of Economic Analysis & Policy 10,* no. 1 (2010)

Alsadiq, Ali. *"Outward foreign direct investment and domestic investment: The case of developing countries." (2013)*

Bayraktar, Saglam B. Yasemin, Yalta A., *"Dynamic linkages among Foreign direct investment,* Public investment and Private investment: Evidence from Turkey", Applied Econometrics and International Development Vol. 11-2 (2011): 71-82

Blejer, M. I., & Khan, M. S. Government Policy and Private Investment in Developing Countries (Politique des pouvoirs publics et investissement privé dans les pays en développement)(Política estatal e inversión privada en los países en desarrollo). Staff Papers-International Monetary Fund, (1984): 379-403

Buckley, P.J., Clegg, J., & Wang,C., The impact of inward FDI on the performance of Chinese manufacturing firms,Journal of International Business Studies, 33(4), (2002): 637-655

Chakraborty, C., & Basu, P. Foreign direct investment and growth in India: a cointegration approach. Applied Economics, 34, (2002): 1061-1073

Chang, S. C., Estimating relationships among FDI inflow, domestic capital, and economic growth using the threshold error correction approach. Emerging Markets Finance and Trade, 46, (2010): 6-15

Dickey, D. A., & Fuller, W. A., Distributions of the estimators for autoregressive time series with a unit root. Journal of the American Statistical Association, 74, (1979): 427-431

Dickey, D. A., & Fuller, W. A.,.Likelihood ratio statistics for autoregressive time series with a unit root, Econometrica, 49, (1981): 1057-1072

Dunning, J.H., Van Hoesel, R., & Narula, R. Third world multinationals revisited: new developments and theoretical implications. In: J. H. Dunning (Ed.), Globalization, Trade and Foreign Direct Investment Oxford: Pergamon Press. (1998): 255-286

Derado Dražen, *"Determinants of Foreign direct investment in transition economies and evaluation of their potential in Croatia",* Institute for Public Finance, Selected translations ISSN 1847-7445 No. 17/13 : (2013): 1 - 29

Fukasaku, K., Wall, D., & Wu, M. (1994). China's long march to an open economy. Paris: Development Centre of the Organisation for Economic Co-operation and Development. Feldstein, M. (1994). The effects of outbound foreign direct investment on the domestic capital stock. National Bureau of Economic Research Working Paper No. 4668.

Frankel, J. (1997). Determinants of Long Term Growth. Available online at: http://ksghome.harvard.edu/~jfrankel/Apecgrow.PDF (Accessed on 15th May 2009)

Goh, S.K. and Wong, K.N., Outward FDI and domestic investment. International Proceedings of Economics Development and Research, 55.27, (2012): 137-140

Greene, J., & Villanueva, D., Private investment in developing countries: an empirical analysis. Staff Papers-International Monetary Fund, (1991): 33-58

Herzer, D., Klasen, S., & Nowak-Lehmann, D. F., In search of FDI-led growth in developing countries: The way forward. Economic Modelling, 25(5), (2008): 793-810

Hejazi, W., & Pauly, P., Motivations for FDI and domestic capital formation. Journal of International Business Studies, 34(3), (2003): 282-289

Herzer, D., The long-run relationship between outward FDI and domestic output: Evidence from panel data. Economics Letters, 100, (2008): 146-149

Herzer, D., & Schrooten, M., Outward FDI and domestic investment in two industrialized countries. Economics Letters, 99, (2008): 139-143

Hansen, H. & Rand, J., On the Causal Links between FDI and Growth in Developing Countries. The World Economy, 29, (2006): 21-41

Im, K.S., Pesaran, M.H., & Shin, Y., Testing for unit roots in heterogeneous panels. Journal of Econometrics, 115, (2003): 53-74

Kwiatkowski, D., Peter, C. B. P., Schmidt, P., & Shin, Y., Testing the null hypothesis of stationaryagainst the alternative of a unit root. Journal of Econometrics, 54, (1992): 159-178

Lean, Hooi Hooi, and Bee Wah Tan. *"Linkages between foreign direct investment,* domestic investment and economic growth in Malaysia." Journal of Economic Cooperation & Development 32, no. 4 (2011): 75

Persidangan Kebangsaan Ekonomi Malaysia ke V (PERKEM V): 48-57dy, N. R. (1994). China in the world economy. Washington,D.C.: Institute for International Economics.

Lee, Il Houng, Murtaza Syed, and Liu Xueyan. *"China's path to consumer-based growth: Reorienting investment and enhancing efficiency." (2013)*

Lee, Chew Ging. *"Outward foreign direct investment and economic growth: Evidence from Japan." Global Economic Review 39,* no. 3 (2010): 317-326

Levin, Andrew, Chien-Fu Lin, and Chia-Shang James Chu. *"Unit root tests in panel data: asymptotic and finite-sample properties." Journal of econometrics 108,* no. 1 (2002): 1-24

Lim, Mr Ewe-Ghee. Determinants of, and the relation between, foreign direct investment and growth: a summary of the recent literature. No. 1-175. International Monetary Fund, 2001

Liu, Xiaohui, Peter Burridge, and Paul JN Sinclair. *"Relationships between economic growth,* foreign direct investment and trade: evidence from China." Applied economics 34, no. 11 (2002): 1433-1440

MOFCOM (2014). Ministry of commerce of China. Retrieved from http://english.mofcom.gov.cn

Naughton, Barry, ed. The China circle: Economics and technology in the PRC, Taiwan, and Hong Kong. Brookings Institution Press, 2012

Ndikumana, Leonce. *"Financial determinants of domestic investment in Sub-Saharan Africa: Evidence from panel data." World Development 28,* no. 2 (2000): 381-400

Prasanna, N. ,*"Direct and Indirect Impact of Foreign Direct Investment (FDI) on Domestic Investment (DI) in India",* J Economics, 1(2) (2010): 77-83

Pedroni, Peter. *"Critical values for cointegration tests in heterogeneous panels with multiple regressors." Oxford Bulletin of Economics and statistics 61,* no. S1 (1999): 653-670

Pesaran, M. Hashem, and Yongcheol Shin. *"An autoregressive distributed-lag modelling approach to cointegration analysis." Econometric Society Monographs 31 (1998): 371-413*

Pesaran, M. Hashem, Yongcheol Shin, and Richard J. Smith. *"Bounds testing approaches to the analysis of level relationships." Journal of applied econometrics 16,* no. 3 (2001): 289-326

Phillips, Peter CB, and Pierre Perron. *"Testing for a unit root in time series regression." Biometrika 75,* no. 2 (1988): 335-346

Ram, Rati. *"Additional evidence on causality between government revenue and government expenditure." Southern Economic Journal (1988): 763-769*

Sauramo, P. (2008). Does Outward Foreign Direct Investment Reduce Domestic Investment. Discussion Paper 239, Labor Institute for Economic Research [online] http://www. labour. fi/tutkimusjulkaisut/ tyopaperit/sel239. pdf (accessed 5 March 2010)

Siliverstovs, Boriss, and Dierk Herzer. *"Export-led growth hypothesis: evidence for Chile." Applied Economics Letters 13,* no. 5 (2006): 319-324

Stevens, G. V., & Lipsey, R. E., Interactions between domestic and foreign investment. Journal of international money and finance, 11(1), (1992): 40-62

Sağlam, B. B., & Yalta, A. Y., Dynamic linkages among foreign direct investment, public investment and private investment: Evidence from Turkey. Applied Econometrics and International Development, 11, (2011): 71-82

UNCTAD. (2013). Foreign direct investment. Retrieved from http://unctadstat.unctad.org/ ReportFolders/reportFolders.aspx?sRF_ActivePath=P,5,27&sRF_Expanded=P5

UNCTAD (2015).World Investment Report. Washington DC: World Bank.

Wai, T.U., & Wong, C.H., Determinants of Private Investment in Developing countries.Journal of Development Studies, 19(1), (1982): 19-36

Wang, M., Foreign direct investment and domestic investment in the host country: Evidence from panel study. Applied Economics, 42, (2010): 3711-3721

You, K., & Solomon, O. H., China's outward foreign direct investment and domestic investment: An industrial level analysis. China Economic Review, (2015): 1-39

Zhang, K.H., Does foreign direct investment promote economic growth? Evidence from East Asia and Latin America. Contemporary Economic Policy, 19, (2001): 175-185

Xu, G., & Wang, R., The effect of foreign direct investment on domestic capital formation, trade, and economic growth in a transition economy: Evidence from China. Global Economy Journal, 7, (2007): 1-21

TROUBLES OF THE ITALIAN BANKING SYSTEM AND THE SMOTHERED HOPES OF EUROPE

Mitja Stefancic

Mitja Stefancic
European Research Institute on Cooperative and Social Enterprises
Trento, Italy
mitja.s@hotmail.it

Article info
Paper category: Review
Received: 7.4.2017.
Accepted: 25.7.2017.
JEL classification: G21, O52

ABSTRACT

The crisis of many Italian banks, be them large commercial banks or small local mutual banks, is adversely affecting the European banking system. Confidence in Italian banking firms has decreased substantially in Italy and abroad. Financial intermediaries have specific shortcomings and specific problems to solve. Necessary improvements include better management of costs and risks, less influence by political parties on banks, improved selection mechanisms of managers, and more productive allocation of credit. Bank balance sheets should be improved in order to facilitate lending and thereby strengthen the real economy. This will take time since it is not easy to repair bank balance sheets and update the governance of banks. Rehabilitation of banks should essentially be matched by a proper cultural twist in the mindset of Italian citizens. On the other hand, the ability to secure a healthier banking sector is very much dependent on the recovery of the real economy and, therefore, on the ability for corporations to have access also to capital markets. Without such improvements, however, Italy may pose a serious challenge to the idea of a competitive European Union as advocated in the past for instance by former President of the European Commission Romano Prodi (1999).

Keywords:
Non-performing loans; Distressed Italian banks; Eurozone; Italian banking system; Crisis in Europe

1. INTRODUCTION

Italy is still in the midst of a severe banking crisis. Given the dimensions of the country's financial system, such a crisis, if not properly managed, could adversely affect the European banking system. To prevent this, it is important to understand the origins of the problems and, thereby, avoid a prolonged period of crisis. Despite market improvements, consolidation process, privatisation of Italian financial intermediaries and regulatory changes, which took place during the 1990s (Angelini and Cetorelli, 2003; Ciocca, 2005; De Bonis et al., 2012), the system as a whole still requires substantial improvements, including: a better management of risks and costs; more appropriate mechanisms of selection of top managers; less political influence on banks' lending strategies. At the outset of the global financial crisis, both commercial and mutual Italian banks seemed to be solid enough to withstand the crisis adequately. Back then, finance minister Giulio Tremonti used reassuring arguments about the assumed resilience of Italian financial intermediaries, expressing confidence in their future success. However, things gradually changed and the overall situation became increasingly difficult to manage as problems started to pile up, particularly as the crisis spread to the real economy and, subsequently, an increasing number of enterprises and households stopped paying back their loans. Moreover, credit provided to Italian enterprises has not been allocated efficiently enough.

The aim of this paper is to inform the reader about the challenges currently faced by Italian banks. These problems are not limited to Italy. Instead, they are affecting the European banking system at large (Reichlin and Valleé, 2016), casting doubts on the credibility of the European Union as well (Bandulet, 2011; Guerrieri, 2012; Tosun et al., 2014; Fabbrini, 2015). The remaining parts of this paper are structured as follows. Chapter 2 investigates the origins of the problems of Italian banking firms. Chapter 3 asks whether there are any solutions to solve the Italian crisis. Chapter 4 provides a critical discussion on the fact that the economic and political framework of a common European union may no longer be as safe and appealing as it used to be twenty years ago. Chapter 5 provides some final remarks.

Ideally, the present paper should be of interest to economists, experts in banking, policy makers and, more in general, to those concerned about the future of Europe - a Europe that, unfortunately, could soon 'fall apart' (Laibach, 2014). Despite keeping the style descriptive and as simple as possible, at the end the reader should be able to get a proper flavour of the complexity of the Italian banking crisis and of the kind of reforms/changes currently needed.

2. THE DEEP TROUBLES OF ITALIAN BANKS

Banks play a pivotal role in the Italian financial system (Messori, 2011; European Commission, 2015; Accornero et al., 2017). This chapter aims to answer the following question: What are the main issues of Italian banks? To start with, it is often

argued that Italian financial intermediaries suffer from somewhat low profitability. As in many other European economies, small banks in Italy face profitability pressure and the need for a better management of costs. On average, Italian banks tend to be exposed to cost challenges, seemingly having among the highest structural costs in western Europe (e.g. Iona et al., 2015; Albertazzi et al., 2016; Garrido et al., 2016; IMF, 2016).

High costs originate, for instance, from operating costs related to bank business models as well as relatively high number of branches per capita compared to EU standards. It should be mentioned the fact that the number of bank branches increased just before the introduction of digital banking: arguably, the resulting mismatch between technological progress in financial intermediation and the human resources employed by banks lead the entire banking system to a loss in competitiveness. It comes as no surprise that after a fall in the number of banking employees since year 2013, further reduction of staff is planned until 2020.

In Italy, selection of top managers in the banking sector remains somewhat inefficient. In Italian banks, the more connected the bank managers are, the lower the probability of their turnover. As showed by Battistin, Graziano and Parigi (2012), banks with highly connected managers seem to suffer from lower profitability, particularly in the case of mutual and cooperative bank groups. The authors therefore conclude that connections in Italian banks function as 'collusion devices' to maintain rents at the expense of bank performance. Otherwise stated, the disciplining of top managers serving Italian banks do not function properly at all. Furthermore, a recent investigation by D'Amato and Gallo (2017) finds that in Italian banks (and particularly in cooperative banks), directors sitting on boards for too long develop close relationships with managers: as a result, the effectiveness of their monitoring is substantially weakened.

A third problem originates from the rather negative influence of politics on bank firms. In general, Italian banks, even the largest among them, often operate under the influence of political parties and local governments, particularly when it comes to deciding about their business strategies and development policies. This, in turn, negatively affects the quality of lending policies and can prevent an adequate assessment of risks: 'most of Italy's banks, many of which are small and local, have politicized governance features that blur commercial incentives. As a consequence, they were unable to rein in their lending during the downturn of the late 2000s … Many of these loans turned sour in subsequent years and local connections prevented the banks from working them out, so they kept supporting borrowers in a pattern of pretend and extend' (Véron, 2017).

Inefficient selection of top managers and the relatively high influence of politics on both bank credit policy and decision making processes were paired with insufficient diversification of risks in the risk management policy, as well as with a decrease in the credit portfolio quality of the Italian banks. The nega-

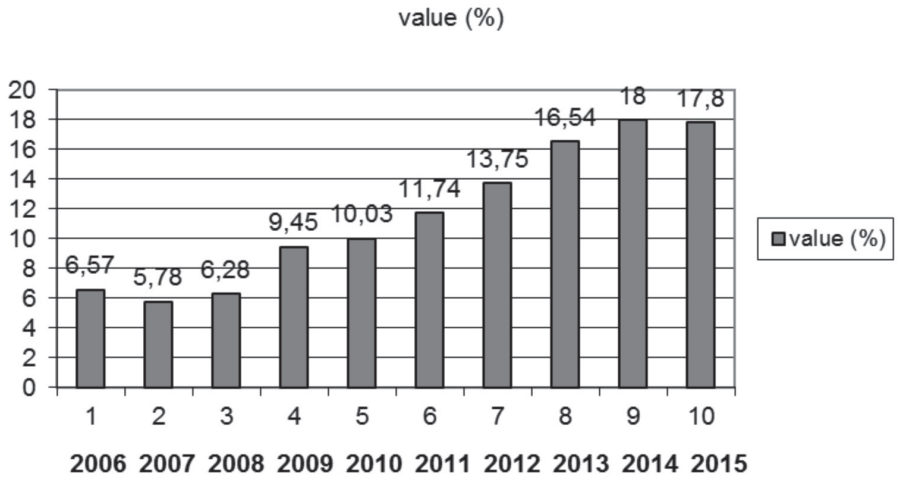
tive repercussions on the banking sector in the light of non-performing loans called for more stringent policies for banks in issuing loans, leading to a credit crunch.

The problem of non-performing loans was furtherly exacerbated by some external factors, such as:

- a decline in industrial production due to the credit crunch, lower demand for products, and increased market pressure from global players, in part explaining for the low performance and scarce profitability of the Italian firms (with increased difficulties in repaying their loans); and
- occasional difficulties of some households to timely repay their loans (for instance, due to rising unemployment in most industries);
- The result has been a strong increase in non-performing loans with a deterioration in banks' balance sheets with negative repercussions on the ability of some banks to attract new capital. So the Italian banking sector became remarkably unhealthy at the moment.

Non-performing loans in Italian banks totalled €360 billion in 2016 - approximating to roughly 22% of Italy's GDP, even though this number does not account for some of the losses already registered in banks' balance sheets. Most of them are piled up in large commercial banks. Counterfactual analyses and related exercises for a reassessment of non-performing debt (e.g. Notarpietro and Rodano, 2016) are not very convincing. Moreover, the Governor of the Bank of Italy Ignazio Visco recently acknowledged that banks' difficulties in Italy have been exacerbated by 'fraudulent conduct and imprudent lending policies' (Visco, 2017, 12).

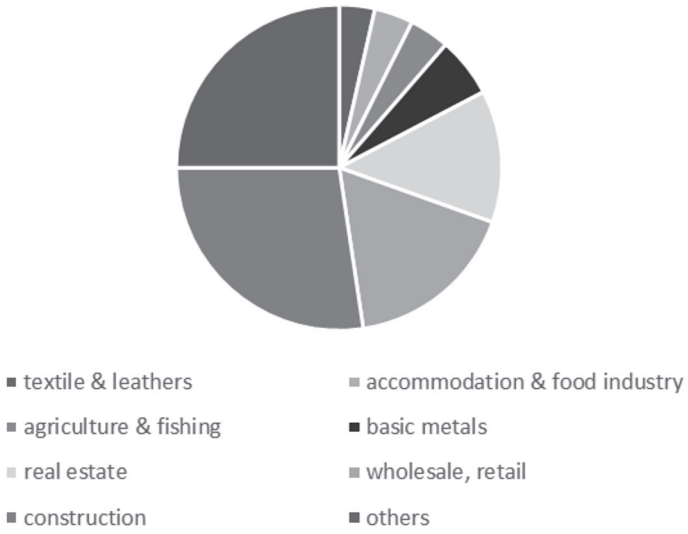
Figure 1.: Evolution of Non-performing debts in Italy



Source: World Bank, 2016.

Analysis based on data from the Bank of Italy shows that non-performing debts in the corporate sector originated mostly in the construction industry, manufacturing and real estate - all industries that have played a role in the spread of the crisis (De Lucia and Ubovic, 2016). For example, in the Friuli Venezia Giulia region in the North-East of Italy, more than 500 enterprises operating in the construction industry have ceased their activity over the period 2008-2016. In most other regions the situation has not been any better. In addition to that, one should recognise that another important source of such debts are large Italian corporations that have lost their competitiveness on the market over the last years, particularly those that are under extraordinary administration procedures - for instance, the Italian flag carrier Alitalia (discussed later).

Figure 2.: Non-performing debts in Italian companies by sector



Source: Bank of Italy, 2016 and De Lucia and Ubovic, 2016.

It is useful to look at different types of banks in order to understand how they are being affected by the crisis.

2.1. Monte dei Paschi bank: the oldest operating European bank in distress

At the beginning of 2016 the Italian government decided for the rescue of four small regional lenders (Banca Marche, Popolare Etruria, CariFerrara and CariChieti). Now, it is time for Italy to have a proper check up on its large for-profit banks.

A dramatic story is that of the Monte dei Paschi bank, Italy's third largest bank and the oldest lender in Europe. One element that is striking about this bank, but

rarely noticed by foreign analysts is that, despite operating nationally, it retains a remarkably "local" outlook - something that can be noticed by looking at its control mechanism and business culture (Conti, 2013; Stefancic, 2017a; Stefancic, 2017b).

The bank has been capitalised a number of times during the last few years, but nevertheless performed poorly during the EBA stress tests in 2014 and 2016 (e.g. EBA, 2016), thus failing to attract large investors at the end of 2016. As suggested by De Groen (2016), Monte dei Paschi failed or nearly failed all the EU-wide supervisory exercises that have been undertaken in the past years. The bank has only managed to raise just enough capital, including public funds, to close the capital shortfalls or meet the threshold. The fact that the bank was allowed to live on the edge proved to be costly to the Italian society.

At the beginning of 2017, the Italian government decided on the nationalisation of the bank, at least until its outlook improves and becomes enough attractive for institutional investors. The bail-out of Monte dei Paschi can be understood as a measure for preventing the risk of contagion to other financial intermediaries. It remains questionable, however, whether the losses registered by the bank due to speculation on financial derivatives, risky and overpriced acquisitions such as that of the Banca Antonveneta in mid-2000s (Lemma, 2011; Boeri and Guiso, 2013; Stefancic, 2016), and a number of underperforming investments, are to be covered with injection of money raised by tax-payers.

One cannot exclude the possibility of other Italian banks - both commercial, cooperative and mutual banks - applying for government aid in the coming months.

2.2. Mutual banks: *banche popolari* from the Veneto region in distress

Looking at a different typology of banks, we can argue that Italian cooperative banks are not immune from failure either. For instance, some of the largest mutual banks (the so-called "banche popolari") suffered from an increase in non-performing debts during the past years, particularly since year 2010. This has attracted unprecedented attention from professional analysts and journalists alike.

Two telling examples are those of the Banca Popolare di Vicenza and the Veneto Banca, both located in the Veneto region, that is, the region of the "Italian miracle" in the 1960s and '70s, and still one of the most competitive and entrepreneurial regions in Europe. In terms of assets, both banks figured among the largest banks in Italy.

It is reported that retail investors had at least €5bn wiped out as the share prices in the banks crashed to 10 cents in 2016 (Sanderson, 2016). Both of them have been recapitalised by the Atlante fund, a sort of bad bank that is apparently participated in mainly by commercial banks and insurance companies, and managed by a private fund manager. As of June 2017, troubles for these banks are, however, far from being over.

Indeed, as recently commented by the Financial Times, 'the two banks, which are in talks to merge, were taken over last year by Atlante, Italy's government spon-

sored, privately backed rescue fund. But the lenders have continued to leak deposits, further eroding their capital base, say people with direct knowledge of the events. A person familiar with the plan being prepared for the European Commission said it was seeking approval to start recapitalisation procedures for the two banks for "about €5bn", a figure far higher than estimates a year ago and a sign of the banks' worsening capital position' (Sanderson, Barker and Jones, 2017).

2.3. A quick comparison with other countries

According to experts at the IMF, it is high time to repair Italian bank balance sheets in order to facilitate lending and to strengthen recovery of the real economy (Jobst and Weber, 2016). Challenges faced by many Italian banks are similar to those experienced by the Portuguese and the Irish banks, but the dimensions of the Italian banking sector are much larger. Italian financial intermediaries have specific shortcomings and specific problems to solve, which are quite different compared to those of large German commercial banks.

While Italian for-profit banks are struggling with non-performing debt, troubles in the largest German counterparts are mainly the direct consequence of losses on financial derivatives, as is the case of Deutsche Bank and some other German banks (Hardie and Howarth, 2009; Münnich, 2016). Generally speaking, despite the harmonisation of the banking regulation, the level of integration of the European banking system remains low. At the same time, the fragmentation of the European banking markets seems to be increasing rather than decreasing. Otherwise stated, if solutions are sought at a European level, these key distinctions need to be encapsulated into strategies aimed at preventing further crises and reducing current problems.

Needless to say, better coordination in the design of crisis-prevention mechanisms at the EU level would be welcome. As suggested by Ligon and Fedirka (2016), the banking crisis in Italy could negatively affect the eurozone: 'uncertainty in the Italian market could lead risk-averse investors to stay away from Italian assets, and thus the euro, impacting its value. Additionally, should MPS [Monte dei Paschi bank] or other large Italian financial institutions fail, Italy would sink into a domestic crisis that would have significant systemic effects on the value of the euro. This would have negative repercussions for other economies in the eurozone' (Ligon and Fedirka, 2016, 2).

A similar conclusion on Italy is reached also by Reichlin and Valleé (2016) who describe Italian banks as 'dysfunctional': 'not only is its dysfunctional banking sector undermining economic recovery and inhibiting investment; the sector's troubles are the sharp end of a problem that affects the entire eurozone'.

3. ARE THERE ANY SOLUTIONS?

Arguably, one of the key solutions for Italy would be to secure economic growth in the years to come. Banks would indeed benefit very much from it. Without recovery of the real economy, improvements in the banking sector are quite difficult to achieve - if possible at all. Luckily, the real economy in Italy is still healthy in many regions. The Italian economy is still largely based on SMEs, many of which showed resilience to the crisis, thereby managing to survive competition despite all of the difficulties experienced.

Notably, SMEs can restructure more easily compared to large companies with an aim to increase their competitiveness. This is a strong point which Italian (and European) policy makers should properly account for in their agendas. Additionally, major efforts should be directed to increasing the size of at least a percentage of such firms due to the fact that, on average, Italian enterprises tend to be small, undercapitalised and are heavily dependent on bank loans. Another fundamental point that still needs to be properly addressed is the current lack of new economic policies - essential for Italy to properly solve the crisis (see, for instance, De Cecco, 2007; Di Quirico, 2010; Lucchese et al., 2016).

Perhaps the most pressing issue remains, however, the essential restructuring of a number of large corporations based in Italy, which appear to be unable to pay back their loans to banks due to registered losses, in some cases resulting in the risk of insolvency. Indeed, several large Italian corporations are in a critical position right now. Some of them operate under extraordinary administration procedures. A dramatic example is that of Alitalia, the flag carrier of Italy. The company has been registering losses since its very establishment, but over the last decade the situation has become so critical that the corporation now faces either nationalisation or bankruptcy. Despite occasionally benefitting from financial aid from the government, it has not been able to adequately compete on the market, losing millions of passengers over the last years. Major creditors of Alitalia - banks such as Intesa Sanpaolo and Unicredit - currently face the risk of losing considerable sums of money in either case.

Another telling story is that of the Eutelia-Agile group - an Italian telecommunications services provider based in Arezzo, Tuscany, specialised in offering data services, voice services and cloud services to Italian small and medium-sized enterprises. The group failed some years ago, and was subsequently restructured by another corporation specialised in cloud computing. Losses for the company's creditors have been nevertheless important. Furthermore, about 2 thousand people have been dismissed by the company.

Other examples of large corporations based in Italy that are at risk of bankruptcy, have just managed to prevent a crisis, or are yet to be restructured in order not to exit the markets, include Ilva (steel industry), Fincantieri (shipbuilding), the Italian

branch of Electrolux (appliances manufacturing), Stefanel (clothing and fashion industry) and some large call centres that employ hundreds of people who risk losing their jobs. The inability of such corporations to pay back their loans (entirely or in part) all adds up to the large amount of non-performing loans that have been piling up in the Italian banking sector since the onset of the financial crisis, followed by the economic downturn. It should also be observed that the problems of large enterprises generally have damaging effects on subcontractors and suppliers, most of which classify as SMEs.

Financial intermediaries play a key role in providing financial support to Italian firms and in servicing households. One could thus argue that saving banking problems is a condition for the Italian industrial sectors to perform well. The problem with this argument is that Italy currently lacks a strong industrial policy that could possibly pave the way to long term improvements. Or, at least, the latter needs to be improved and better communicated. Having recognised that, it therefore becomes essential to critically discuss whether the allocation of credit by Italian banks is really productive at the moment.

At least two examples cast substantial doubts on the efficiency of banks' credit allocation to the real economy. First is the case of the Stefanel company, a famous fashion and clothing producer based at Ponte di Piave in the Veneto region, which had to ask for extraordinary administration procedure at the end of 2016 in order to avoid failure due to high indebtedness. The company listed as its main creditors various Italian banks such as Unicredit, Intesa Sanpaolo, Bnl, Banco Popolare and the Mediocredito del Friuli Venezia Giulia. Despite all the troubles, in June 2017 the company was provided with new fresh credit and financial help for restructuring.

Second, the case of the Feltrinelli publishing group based in Milano - a chain of books and music stores serving customers in Italy. Despite turning to being highly indebted, the company continued to receive loans over the last years at interest rates below the market average. Feltrinelli was even granted a new line of credit amounting to some 50 million euros so to be able to restructure and make new investments e.g. in electronic publishing and in online sales. These two examples provide an idea of how Italian banks often tend to keep existing relationships by privileging servicing large companies - even those that face critical problems or even bankruptcy - rather than looking for new opportunities that may translate into more efficient credit allocation policies.

Said that, Italian banks would need to achieve improvements as quickly as possible so to be able to attract institutional investments, particularly those from foreign investors. In order to achieve this goal, not only Italy has to clean up its banking-sector problems, but the country as a whole should get back a decent level of credibility through a number of much needed political, social and economic reforms. Developments in the banking sector, including the design of strategies

aimed at reducing the level of non-performing loans, should figure among the priorities of such a package of reforms. Nevertheless, one can safely conclude that there will be no concrete reduction of the problem of non-performing loans unless this will be matched by a restructuring process of several Italian corporations. In this respect, a key challenge for Italy would be to develop capital markets and help large corporations to get adequate access to them, as is the case in contemporary well-functioning financial system.

4. SMOTHERED VISIONS OF EUROPE

The present section concludes by critically taking into account the arguments once advanced by well-regarded Italian economist and politician Romano Prodi about a united Europe as described in his pamphlet *Un'idea dell'Europa* (1999). In the above mentioned book, the former Prime Minister of Italy and former President of the European Commission sketches both the main issues and the potentials for the European Union. Prodi considered the Italian membership in the EU as a unique opportunity for the country to modernize and improve its economic outlook. The Italian banking crisis is just an example of how things moved away from the desired outcomes.

Let me briefly summarise the main arguments provided by Prodi (1999). On the one hand, Prodi lists declining population, mass migrations, structural unemployment and declining welfare-state protection as the main challenges for Europe. On the other hand, he also recognizes benefits deriving from the consolidation of universal principles of freedom and democracy (Prodi, 1999: 7). All in all, benefits should be able to outnumber the potential problems, Prodi suggested at the turn of the Century.

By reviewing Prodi's ideas of a 'new' Europe, I wish to put forward a rather strong argument: Italy is currently representing a challenge to the ideal vision of a united Europe, an economic and political project which is gradually departing from the idea advocated in the past by Adenauer, De Gasperi, Monnet and Schuman. The problems in the Italian banking system represent but an example of such a risk.

One could indeed list a whole set of things that have gone wrong in Italy during the last decade: high levels of youth unemployment, approximating to 40 percent at the beginning of 2017 (Pizzin, 2017); excessive public debt (approximating to 130 percent of GDP in 2016 - see also Table 1.); stagnating growth; democratically elected political representatives unable to address the real problems of citizens; the divide between Northern and Southern regions of the country. Furthermore, some scholars suggest that there are significant institutional causes which can explain for some of the above mentioned difficulties, for instance: a legal framework that needs to be updated; heavy bureaucracy; widespread disinformation (Calingaert, 2008; Vincenti, 2013).

Table 1.: Baseline scenario: public debt in 2010 and 2020 (selected countries)

Country	Debt (%Gdp) 2010	Debt (%Gdp) 2020
Denmark	49	39
France	92	114
Germany	82	97
Great Britain	83	124
Italy	127	131
Portugal	91	132
Spain	68	93
Sweden	55	39

Source: Deutsche Bank Research and Bandulet (2011)

Back in 1999 Prodi called for reforms that would help the Italian country to gradually get closer to the 'European standards' (1999: 15). Not only Italy has not been able to adjust to the (best) European standards in several ways. Its political and economic elites showed inability to manage the crisis and are still unable to design a proper strategy for effectively solving the problems mentioned above - similarly as they were twenty or thirty years ago. For this reason, one could go as far as to claim that Italy is representing a potential threat to the larger eurozone.

I am not blaming Romano Prodi for Italy's political and economic decay. I am instead suggesting that a certain idea of Europe simply did not materialize. Expectations for countries such as Italy have proved too high to be met in reality, leaving the entire project of a united Europe very shaky at the moment. It can be suggested that the EU shall be properly rediscussed in the years to come. Active membership of Italy in the eurozone should no longer be taken for granted. Back in 2011, Nouriel Roubini argued that, in order to solve the problems, Italy may have 'to exit the monetary union and go back to a national currency, thus triggering an effective break-up of the eurozone' (Roubini, 2011). It seems that such a moment is getting closer despite some sensibly reassuring arguments recently advanced by Bank of Italy's Governor Visco (2017) at the ordinary meeting of shareholders.

5. FINAL REMARKS

Whatever their importance, consolidation of the Italian banking sector and improvements in bank governance structures are not sufficient to put banks on the right track. Indeed, the fact that Italian banks had played a (rather negative) role in the impairment of industrial districts or entire regional economies, as was showed by the Veneto example, comes at a price. This was shown particularly by the rise in the number of non-performing loans in the period 2009-2015. As a result, confidence in Italian banking firms has decreased substantially both in Italy and abroad. Even worse, there is a substantial risk that no significant changes will take place in Italy earlier than in year 2025.

The rescue of a number of small banks in 2016 and, more importantly, the temporary nationalisation of Monte dei Paschi bank in 2017, proved to be costly for society. Rehabilitation of banks and an attempt to restore trust in banking will be essential for achieving substantial improvements in the Italian economic outlook. This has a flavour of a proper cultural twist in the mindset of citizens, which will not be easy to achieve. As I suggested elsewhere, it takes much more than to simply repair bank balance sheets and improve the governance of banks (Stefancic, 2016). While political parties should be discouraged from participating in banks' strategies since they tend to blur their commercial incentives, Italian citizens should, on the other hand, find new ways to exert stronger control over banks.

Strategic thinking would be essential to solve some of the problems mentioned in the present paper. Policy makers should properly address the social factors shaping change and innovation in banking - such as social networks, power, cultural settings and the kind of information being used by banks in their lending processes (e.g. D'Aurizio et al., 2015) so to put emphasis on best practices and, on the other hand, contribute towards stabilising the system by discouraging imprudent lending policies. They should also plan a proper reorganisation of the banks' branch networks as a result of the fact that, arguably, too many employees have been hired by the Italian banks just before the application of digital banking and new technologies. Many employees will have to be either relocated or repositioned on the job market. If Italian top bank managers would have been better acquainted with new trends in financial intermediation in the past, such mistakes might have been avoided.

Bearing in mind that banks need to operate both ethically and efficiently, general improvements should include reduction in costs (e.g. operating costs), a better diversification of risks, improved mechanisms for the selection of managers, stronger limitations to prevent political interest from influencing bank firms' strategies and policies. These improvements may, however, not suffice. A key challenge for Italy is to improve its capital market which appears to be underdeveloped at the moment. The lack of proper capital markets casts doubts on Italy's ability to solve its financial problems. In fact, in order to find long-term solutions, Italian corporations and large businesses should have better access to efficient capital markets.

On the other hand, I argue that small innovative enterprises - which can help in securing growth - should have access to venture capital, as is the case in most advanced economies. Otherwise stated, it is very much questionable whether the 'venture capital' should continue to be granted by the Italian commercial banks and state agencies since they lack both the know-how and the kind of incentives that are essential for this market segment.

By contrast, should Italy prove to be unable to solve its domestic troubles with banks, that would certainly have massive repercussions on the euro and, subsequently, on other European economies. Failure could lead to radical changes, and both freedom and democracy could be at stake.

REFERENCES

Accornero, Matteo, Piergiorgio Alessandri, Luisa Carpinelli, and Alberto Maria Sorrentino. "Non-performing loans and the supply of bank credit: evidence from Italy." . Questioni di Economia e Finanza - Bank of Italy Occasional Paper N. 374. (2017)

Albertazzi, Ugo, Alessandro Notarpietro, and Stefano Siviero. "An inquiry into the determinants of the profitability of Italian banks." . Questioni di Economia e Finanza - Bank of Italy Occasional Paper N. 364. (2016)

Angelini, Paolo, and Nicola Cetorelli. "The effects of regulatory reform on competition in the banking industry." Journal of Money, Credit, and Banking 35, no. 5 (2003): 663-684

Bandulet, B., Zadnja leta evra. Mengeš: Ciceron, 2011.

Battistin, Erich, Clara Graziano, and Bruno M. Parigi. "Connections and performance in bankers' turnover." European Economic Review 56, no. 3 (2012): 470-487

Boeri, T. and Guiso, L., La lezione del Monte. Lavoce.info, 01 February, 2013.

Calingaert, Michael. *"Italy's choice: reform or stagnation." Current History 107,* no. 707 (2008): 105

Ciocca, P., 2005. The Italian Financial System Remodelled. London: Palgrave Macmillan

Conti, C., 2013. Mps, tutto quello che c'è da sapere. L'espresso, 30 July

D'Amato, Antonio, and Angela Gallo. "Does Bank Institutional Setting Affect Board Effectiveness? Evidence from Cooperative and Joint-Stock Banks." Corporate Governance: An International Review 25, no. 2 (2017): 78-99

D'Aurizio, Leandro, Tommaso Oliviero, and Livio Romano. "Family firms, soft information and bank lending in a financial crisis." Journal of Corporate Finance 33 (2015): 279-292

De Bonis, Riccardo, Alberto F. Pozzolo, and Massimiliano Stacchini. *"The Italian banking system: Facts and interpretations." (2011)*

De Cecco, Marcello. "Italy's dysfunctional political economy." West European Politics 30, no. 4 (2007): 763-783

De Groen, Willem Pieter. "A closer look at Banca Monte dei Paschi: Living on the edge. CEPS Policy Brief No. 345, July 2016." (2016)

De Lucia, C. and Ubovic, S., 2016. Italian banking sector: Facts and figures. Economic desknote BNP Paribas, 1 August

Di Quirico, Roberto. "Italy and the global economic crisis." Bulletin of Italian Politics 2, no. 2 (2010): 3-19

European Banking Authority, 2016. EU-wide stress test: Results, 29 July

European Commission, 2015. Country Report: Italy [online]. Available at: http://ec.europa.eu/europe2020/pdf/csr2015/cr2015_italy_en.pdf.

Fabbrini, S. "Which European Union? The European Union after the Crisis." (2015)

Garrido, José, Anke Weber, and Emanuel A. Kopp. "Cleaning-up bank balance sheets: economic, legal, and supervisory measures for Italy." (2016)

Guerrieri, P., The Eurozone Crisis Still Threatens Global Growth. In "New Challenges for the Global Economy, New Uncertainties for the G-20.", ed. Atiyas, Izak, Suman Bery, Kemal Dervis, Peter Drysdale, Claudio R. Frischtak, Paolo Guerrieri, Sergei Guriev et al. (2012)

Hardie, Iain, and David Howarth. "Die Krise but not La Crise? The financial crisis and the transformation of German and French banking systems." JCMS: Journal of Common Market Studies 47, no. 5 (2009): 1017-1039

IMF, 2016. Italy. IMF Country Report No. 16/223

Iona, A., Leonida, L. and Silipo, D., The Banking System and Savings Allocation in Italy. In: Mammone, Andrea, Ercole Giap Parini, and Giuseppe A. Veltri, eds. The Routledge handbook of contemporary Italy: history, politics, society. Routledge, 2015.

Jobst, A. and Weber, A., 2016. Profitability and Balance Sheet Repair of Italian Banks. IMF WP 16/175

Laibach, 2014. Spectre. London: Mute Records

Lemma, Valerio. "La Vicenda MPS: L'Acquisto Di Antonveneta Tra Regolarità Degli Adempimenti E Problematicità Degli Esiti (MPS Case: The Buyout of Banca Antonveneta)." (2011)

Ligon, C., and Fedirka, A., 2016. The Evolution of Italy's Banking Crisis. Geopolitical Futures, 30 December

Lucchese, Matteo, Leopoldo Nascia, and Mario Pianta. "Industrial policy and technology in Italy." Economia e Politica Industriale 43, no. 3 (2016): 233-260

Messori, M. "Settore bancario, ricchezza finanziaria e crisi economica in Italia." Banca, impr., società (2011): 363-396

Münnich, Sascha. "Readjusting imagined markets: morality and institutional resilience in the German and British bank bailout of 2008." Socio-Economic Review 14, no. 2 (2015): 283-307

Notarpietro, Alessandro, and Maria Lisa Rodano. "The evolution of bad debts in Italy during the global financial crisis and the sovereign debt crisis: a counterfactual analysis." (2016)

Pizzin, M., 2017. Youth unemployment in Italy double the European average. il Sole 24 Ore, 16 January

Prodi, Romano. Un'idea dell'Europa. Vol. 106. Mulino, 1999

Reichlin, L. and Valleé, S., 2016. Resolving Europe's Banking Crisis in Italy [online]. Available at: https://www.project-syndicate.org/commentary/europe-italy-flawed-banking-union-by-lucrezia-reichlin-and-shahin-vallee-2016-10?barrier=accessreg.

Roubini, Nouriel. "Why Italy's days in Eurozone may be numbered." Financial Times (2011)

Sanderson, R., 2016. Once-thriving Veneto becomes heart of Italy's bank crisis. Financial Times, 23 November

Sanderson, R., Barker, A., and Jones, C., 2017. Italy considers €5bn state bailout of regional banks. Financial Times, 14 February

Stefancic, M., Toskanska banka Monte dei Paschi iz Siene najšibkejši člen italijanskega bančnega sistema. Pravna Praksa, 8/12, (2016): 12-13

Stefancic, M., Kriza italijanskega bančnega sistema. Bančni vestnik, 2, (2017): 10-14

Stefancic, M., 2017. The deep troubles of Italian banks [online]. Available at: https://www.opendemocracy.net/can-europe-make-it/mitja-stefancic/deep-troubles-of-italian-banks.

Tosun, Jale, Anne Wetzel, and Galina Zapryanova. "The EU in crisis: advancing the debate." (2014): 195-211

Véron, N., 2017. ECB finally addressing Italian bank woes [online]. Available at: http://bruegel.org/2017/01/ecb-finally-addressing-italian-bank-woes/.

Vincenti, U., 2013. Di chi è la colpa. Sette possibili cause del dissesto italiano. Roma: Donzelli

Visco, I., 2017. The Governor's Concluding Remarks on 31 May 2017. Rome: Bank of Italy

3 VOLUME | 2 ISSUE

ISSN 1849-9015