EXPLORING FACTORS THAT INFLUENCE ON GDP GROWTH RATE OF EUROPEAN UNION COUNTRIES

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Abstract

- The main purpose of this study is to investigate the impact of different variables on GDP growth rate of 28 countries member of European Union by using annual data over the two year period 2011-2012.

- From the regression analyses, the coefficients of FDI, gross savings, inflation, business entry density and times required to start a business resulted positive and statistically significant in determine the GDP growth rate of EU countries. The results of the study also demonstrate that the increase of remittances and the reduction of unemployment rate have not direct impact on GDP growth rate during the period of the study.

Introduction

This study is focused on providing empirical evidence on the relationship between the GDP growth rate of 28 countries member of European Union and seven independent variables:

- FDI,
- Remittances,
- Gross savings,
- Inflation,
- Unemployment rate,
- Business entry density,
- Times required to start a business.

Literature Review

Several other studies have provided empirical evidence on the determinants of a country GDP growth rate:

Mehmood (2012) study investigates the affect of thirteen selected factors (independent variables) on Gross Domestic Product (GDP) in Pakistan and Bangladesh.

Agalega and Antwi (2013) study was focused on the effects that changes in the inflation and interest rates have on the GDP in Ghana over a period of thirty one years from 1980 to 2010.

Antwi et al. (2013) study suggests that real GDP per capita is a function of physical capital, labor force, foreign direct investment, foreign aid, inflation and government expenditure.

Kbria et al. (2014) study in Pakistan investigates the impact of macroeconomic variables (interest rate, exchange rate, inflation and FDI) on GDP growth by using annual data during the period 1980-2013.

Data and Methodology

The sample used is of 28 countries (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia Republic, Slovenia, Spain, Sweden, United Kingdom) covering the period 2011-2012.

Hypotheses and variables

- In order to identify the effect of the selected determinants on GDP growth rate the study used seven hypotheses :
- H 1: FDI is positively related to GDP growth rate of the EU countries.
- H 2: Remittances are positively related to GDP growth rate of the EU countries.
- H 3: Gross savings are positively related to GDP growth rate of the EU countries.
- H 4: Inflation rate is negatively related to GDP growth rate of the EU countries.
- H 5: Unemployment rate is negatively related to GDP growth rate of the EU countries.
- H 6: Business entry density is positively related to GDP growth rate of the EU countries.
- H 7: Times required to start a business is positively related to GDP growth rate of the EU countries.

- The independent variables used in the analysis are:
- FDI= Foreign direct investment of the country
- REM= Remittances of the country
- G.SAVE= Gross saves of the country as percentage of GDP
- CPI= Consumer price index of the country
- UNEM=Unemployment rate of the country
- B.ENTRY= Business entry density per 1000 people of ages 15-64
- TIME= Times required to start a business
- And the dependent variable is:
- GDP= GDP growth rate of the country

Statistics

Summary statistics, using the observations 1:1 - 5:8

Variable	Mean	Median	Minimum	Maximum	Std. Dev.	C.V.
GDP	0.9196	0.8000	-7.1000	8.3000	2.7754	3.0179
FDI	1.27991 e+010	4.23800 e+009	-1.91700 e+009	1.02000 e+011	1.84291 e+010	1.4399
REM	5.16989 e+009	1.64900 e+009	3.30000 e+007	1.01230 e+011	1.38894 e+010	2.6866
G.SAVE	19.2536	20.1000	5.4000	26.2000	5.2508	0.2727
CPI	3.0518	2.9000	0.9000	5.8000	0.9643	0.3160
UNEM	10.3821	9.1500	4.0000	25.0000	4.7268	0.4553
B.ENTRY	5.56911	4.2400	0.5000	24.7300	5.1767	0.9295
TIME	14.0357	12.5000	4.0000	40.0000	8.9584	0.6383
GDP	0.9196	0.8000	-7.1000	8.3000	2.7754	3.0179

Multicollinearity Analysis

Multicollinearity analysis of the variables selected

Variable	VIF
FDI	1.050
REM	1.085
G.SAVE	1.354
CPI	1.042
UNEM	1.215
B.ENTRY	1.247
TIME	1.064

The results show that VIF for all the variables are less than 10 and the problem
of multicollinearity is not present into the regression model.

Results

Results from the regression analyses

Variable	Coefficient	Std. Error	t-ratio	p-value	
CONST	-9.42464	1.38931	-6.7837	<0.00001	***
FDI	1.60666e-011	9.14217e-012	1.7574	0.08522	*
REM	1.15311e-011	1.86985e-011	0.6167	0.54036	
G.SAVE	0.336437	0.042416	7.9318	<0.00001	***
CPI	0.669918	0.226926	2.9521	0.00487	***
UNEM	-0.046251	0.050277	-0.9199	0.36221	
B.ENTRY	0.126403	0.038912	3.2484	0.00212	***
TIME	0.099695	0.019292	5.1677	<0.00001	***
R-squared	0.7132	*Adjusted R-squared*	0.6717		
F(7, 48)	17.0512	*P-value (F)*	4.34e-11		

Conclusions

- The results indicate that there is empirical evidence to show that:

- Each factor except the unemployment rate influence positively on the economic growth of EU countries.

- All the coefficients of the selected variables resulted statistically significant except the coefficients of remittances and of unemployment rate.

- The relation between GDP of the EU countries and FDI, gross save, CPI, business entry and number of days to start a business is positive and statistically significant.

- Remittances and unemployment rate are not significant determinants of GDP growth rate of the EU countries. The sight of the coefficients of these variables is as predicted but they have a weak relation with the economic growth of the sample.

- According to the regression results hypotheses H1, H3, H4 H6 and H7 are accepted and the hypotheses H2 and H5 are rejected.
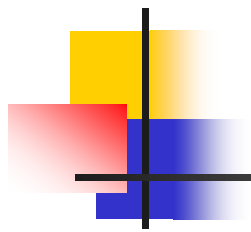
Limitation

Some of the limitations of this study are:

- The period of the study is limited into only two years.
- It would be interesting to include a dummy variable for the countries which aspire to become members of EU countries in order to verify if the independent variables influence in the same way on their economic growth. On the road to EU membership candidate countries are Albania, Iceland, Montenegro, Serbia, The Former Yugoslav Republic of Macedonia and Turkey.
- Further research should examine other factors which may influence on economic growth.
- This study has used as a sample 28 countries. Because the problematic of each country are not the same, it would bring other results if we divide the 28 countries into groups according to their economical development or period of becoming membership of EU for example before the year 2000 (15 countries) and after the year 2000 (13 countries).

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Thank You!