Identifying factors that influence sustainable development: the case of Macedonia

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Abstract

Development theory has come a long way over the last century. It began with the notions of economic growth and development, and finally has reached a stage where governments and academics are demanding more sacred models of living than simply growth. The concept of sustainable development has become one of the most contested concepts and indispensable of our time, which consists of three main components: economic, environmental and social. The basic premise of this paper is that in order for the development to be sustainable, it must be inclusive, which is an obvious need for successful balancing of economic goals. A special emphasis will be the analysis of the economic growth of Macedonia as a developing country that is generally characterized by poor infrastructure, high number of unemployment, low GDP, lack of investment and unstable government. To have a sustainable development requires economic growth, which leads to increased productivity, increased employment, reduced poverty, inflation stability, boost of education, environmental cultivation and rapid technological progress. From the empirical investigation done by linear regression (OLS), we have come to conclusion of statistically significant variables such as inflation, poverty, education, direct export. The only unexpected finding is the impact of unemployment, which is positive and statistically significant.

Key words: sustainable development, economic growth, education, unemployment

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I. INTRODUCTION

Development theory began with the notions of economic growth and development, and lately has reached a stage where governments and academics are demanding more sacred models of living than simply growth. It wasn't until the late 1980s that governments, businesses, economist and others have started to investigate the issue of sustainable development.

In general terms, "development" means an "event that constitutes a new phase in a changing situation". Development is desirable since it refers to a society or a socio-economic system, which means improvement, whether in the overall system situation, or in some of its constituent elements (Bellù, 2010). Development is a term of positive connotation, ie it is linked to a better future. Development is not just about economic growth. Likewise, sustainability is not just about protecting the environment; both concepts such as development and sustainability are primarily for people who live in peace with one another and in balance with the planet. Their right, opportunity, choice, dignity and value are and will be at the heart of everything (UNDP, 2012).

Figure 1: Sustainable Development

Based on Figure 1, "What should be developed" three categories are identified: people, economy and society. Much of the early literature is focused on economic development in the manufacturing sectors that provide employment, desirable consumption and wealth. Recently, attention has shifted to human development, including an emphasis on values and goals, such as increasing life expectancy, education, equalization, and opportunity.

Sustainable development is a dynamic concept with many dimensions and many interpretations. Some argue that there is no need for an accepted definition of sustainable development, instead, sustainable development is seen as a process of change that is highly dependent on local contexts, needs and priorities (UNESCO, 2005-2014). According to the classical definition given by the United Nations World Commission on Environment and Development in 1987, development is sustainable if it “meets the needs of the present without compromising the ability of future generations to meet their own needs.” The concept of sustainable development has become one of the most contested concepts and indispensable of our time, which consists of three main components: economic, environmental and social.

- **Economic**: An economically viable system should be able to produce goods and services on a continuous basis to maintain manageable levels of government and external debt and to avoid extreme sectoral imbalances that cause damage.
- **Environmental**: A sustainable environmental system should maintain a sustainable resource base, avoiding over-exploitation of renewable resources and nonrenewable resources in a way that the investment becomes a suitable substitute.
- **Social**: A sustainable social system should achieve equality of distribution, provision of social services including health and education, gender equality, and political and participation responsibilities (Harris, 2000).

All three factors are interconnected, overlapping and interdependent. The world is facing challenges in all three dimensions of sustainable development: economic, social and environmental (DESA, 2013). Taking them together, the observations show new directions to the development process. They also require changes in the goal of economic growth (Harris, 2003).

The basic premise of this paper is to consider inclusively the economic, social and environmental components so that the development is sustainable, which is an obvious need for
successful balancing of economic goals. The structure of this paper is as follows: it first provides some background analysis. It then continues with data and methodology, followed by regression analysis. Finally, conclusions and recommendations are provided.

II. BACKGROUND ANALYSIS: ECONOMIC GROWTH AND THE CASE OF MACEDONIA

Sustainable development includes a large number of indicators that perform many functions and help monitor progress. They can give an early warning to prevent economic, social and environmental barriers, as well as useful tools for communicating ideas, thoughts, and values.

Table 1: Sustainable development indicators – CSD

<table>
<thead>
<tr>
<th>Poverty</th>
<th>Natural Hazards</th>
<th>Economic Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Atmosphere</td>
<td>Global economic partnership</td>
</tr>
<tr>
<td>Health</td>
<td>Land</td>
<td>Consumption and production patterns</td>
</tr>
<tr>
<td>Education</td>
<td>Oceans, Seas and Coasts</td>
<td>Biodiversity</td>
</tr>
<tr>
<td>Demography</td>
<td>Freshwater</td>
<td>Employment</td>
</tr>
</tbody>
</table>

Source: Desa, 2007

In Table 1 we see that there are a number of indicators for sustainable development. This study will focus mainly on economic development, education and poverty, as highlighted in the box above. Economic growth is described in the subsection below as one of the main drivers of sustainable development, whereas poverty, education and unemployment are depicted as key factors that drive economic growth in the case of Macedonia.

ECONOMIC DEVELOPMENT

Economic growth is an extremely complex phenomenon. The main purpose of economic growth is to increase economic benefits that improve people's lives by creating a stable and favorable socio-political situation in the country to increase international prestige. Economic growth is important to the whole society because it increases the societal output, which in turn is the only source of product development, consumer improvement, science, culture and education development. Economic growth creates conditions for solving the problem of limited resources, has the ability to meet the new needs of society and implement programs to combat
environmental pollution without loss of current consumption. Generally, economic growth is an indicator of a country's economic strength and is defined as an increase in the value of national income. The most common measures of economic growth are: (i) real GDP growth; (ii) Real GDP growth per capita; and (iii) real GDP growth per person employment.

GDP growth rates are fairly accurate indicators of the national economy. To show the efficiency of the economic and living standards, GDP per capita (as well as GDP per person employed) is used, reflecting the efficiency of the national economy, a kind of social productivity indicator. In recent years, there have been serious doubts about the desire for economic growth for countries that have already achieved prosperity. The basis for these doubts is a series of anti-growth arguments, such as the following:

- **Pollution** - Opponents of growth are mostly concerned about the degradation of the environment. All economic growth costs arise because the production process only converts natural resources, does not fully exploit them.
- **No warranties** - Workers at every level are frightened for their skills and accumulated experience might not be enough to keep up with the technology.
- **Economic growth and human values** - Critics of economic growth possess a large number of arguments that economic growth can not bring us "a good life".

Given the above-mentioned facts and ecological situations in the world, it can be said that securing the economic growth of each country should be based on the principles of sustainable development. A modern and national competitive information drives the problem of development for long-term economic growth in terms of ecological and economic equilibrium (Vinnychuk et al., 2013).

To face the challenges of sustainable development and strategic planning practices to make it more efficient, reliable and sustainable then there is a need to restructure the existing processes, rules and institutional procedures according to their needs. Therefore, a sustainable development strategy should include: a coordinated participatory group and continuously improving analysis, debate, strengthening capacity, planning and investment, which seeks to integrate the short, long-term, economic, social and environmental objectives of society (OECD, 2001).
Since sustainable development is a challenge, Macedonia is taken as an example to try to find the factors that affect the same. Because a special emphasis in this study is the analysis of the economic growth of Macedonia as a developing country, some background information is provided in the section below.

**THE CASE OF MACEDONIA**

To achieve sustainable development, Macedonia must contribute to creation of a good pool of professionals for employment, improvement of living conditions, social conditions and quality of life. The Republic of Macedonia has identified several key priorities for its future development, where achieving EU membership can be considered as the essential objective of strategic policies (Kjosev and Eftimov, 2013). The challenges of the country can be addressed as: (i) **Small size and landlocked**; (ii) **The unstable global economy**; (iii) **Needs for investment and new technologies**; (iii) **Low visibility, regional perceptions and pillars of strategy**; (iv) **Macroeconomic stability**; (v) **Creating an excellent climate for investors**; (vi) **Investment in the energy sector**; (vii) **Use of existing natural resources**; and (viii) **FDI**. Table 2 presents some of the country's macroeconomic indicators where we can identify their volatility from 2005-2013 and to interpret them through charts.

**Table 2: Main macroeconomic indicators in the Republic of Macedonia (2005-2013)**

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP %</td>
<td>4,4</td>
<td>5,0</td>
<td>6,1</td>
<td>5,0</td>
<td>-0,9</td>
<td>2,9</td>
<td>2,8</td>
<td>-0,4</td>
<td>2,9</td>
</tr>
<tr>
<td>Inflation USD mil.</td>
<td>0,5</td>
<td>3,2</td>
<td>2,3</td>
<td>8,3</td>
<td>-0,8</td>
<td>1,6</td>
<td>3,9</td>
<td>3,3</td>
<td>2,8</td>
</tr>
<tr>
<td>GDP deflator %</td>
<td>3,8</td>
<td>3,3</td>
<td>7,4</td>
<td>7,5</td>
<td>0,7</td>
<td>2,7</td>
<td>3,1</td>
<td>0,1</td>
<td>0,2</td>
</tr>
<tr>
<td>Budget balance %</td>
<td>0,2</td>
<td>-0,5</td>
<td>0,6</td>
<td>-0,9</td>
<td>-2,7</td>
<td>-2,4</td>
<td>-2,5</td>
<td>-3,9</td>
<td>-4,1</td>
</tr>
<tr>
<td>Foreign Den/</td>
<td>1</td>
<td>49,2</td>
<td>48,7</td>
<td>44,7</td>
<td>41,8</td>
<td>44,0</td>
<td>46,4</td>
<td>44,2</td>
<td>47,8</td>
</tr>
</tbody>
</table>
One can conclude that GDP, export and import from 2005 to 2008 have been on a steady growth, while since 2008 they have declined due to the impact of the global economic crisis, while from 2010 to 2013 again there was an increase except for the GDP, which in 2012 has declined to -0.4%.

Other indicators also vary from year to year, but it is noticed that the global economic crisis has had an impact on Macedonia's economy as well. Perhaps the most serious problem is the unemployment, and it can be said that in our country it is one of the most basic problems to be solved. According to the data from 2005-2013 it can be said that in 2005 and 2006 the rate of unemployment was higher than the employment rate, since 2007 occurs the opposite where the employment rate is higher than the unemployment rate. From the data we could to note that the rate of employment is higher in 2013 being 40.6%. Moreover, as can be interpreted from the
data, about one third of the population in the country live in poverty. The National Strategy for "Poverty Reduction and Social Exclusion in the Republic of Macedonia" adopted in 2010 is one of the key strategic documents referring to the creation of policies that contribute to reducing poverty and social exclusion.

Poverty in Macedonia is measured by the state statistics office and determines relative poverty and subjective poverty. The latest data on poverty refer from 2005 to 2012, where the poverty rate is 26.2%, which is lower than all other years. In 2010 and 2011 poverty has decreased by 30.9% and 30.4%, according to the State Statistics Office the poverty rate is higher in 2009 - 31.1% in 2008 there was a decrease of 28.7% , in 2007- 29.4% in 2006- 29.8 and in 2005- 30% as seen in Figure 2.

**Figure 2: Poverty rate in Macedonia (2005-2012)**

There have been some recent improvement in education, free textbooks are provided for students in primary and secondary schools (both are mandatory), English language is taught since the first grade, there are international schools, two universities have been opened new, over 50 R&D labs, textbooks from top 100 world universities were translated into local languages, and the number of scholarships has increased. As for information technology, every school possesses computers for each student and is equipped with the Internet, there is migration of online government services (taxes, health, customs, employment, etc.) (Temelkovski and Cecev, 2012).

FDIs during the last decades were characterized by some cyclical movements as in Table 2 where one can observe HDI fluctuations from the period (2005-2013). FDI dropped in 2005 for 1.6% this year, they continued to grow by 2007, increasing inflows to 8.5% of GDP in terms of:

- The global FDI growth activity,
- A stable macroeconomic environment,
- Improvement of working conditions,
Global Crisis Presentation, (Customs, 2014)
This increase was mainly due to investment in energy and telecommunications projects. During 2008 and 2009, the global financial crisis has declined steeply in global foreign direct investments in 2008 to 6.1% and 2009 - 2%, down by 32%. The slight increase in investments was observed in 2011, where investments were 2.2%, while the most significant increase was in 2011 - 4.6%, in 2012 there was a decrease to 1.6% and in 2013 there has been an increase of 3.4%. A study conducted by the European Western Balkans, came to the following conclusions:

**Figure 3: Main macroeconomic indicators (%)**


They highlight a worrying fact that a mixture of doubled public debt since 2008 and high unemployment rate among women and youth is difficult to recover and bring economic growth in the country.

It can be argued that Macedonia that is generally characterized by poor infrastructure, high number of unemployment, low GDP, lack of investment and unstable government. To have a sustainable development requires economic growth, which leads to increased productivity, increased employment, reduced poverty, inflation stability, boost of education, environmental cultivation and rapid technological progress. Thus an OLS model is examined to determine the factors that influence sustainable development in Macedonia.
III. **Methodology and Data Analysis**

The data used in this study research are secondary data. The main source of data is the National Bank of the Republic of Macedonia (NBRM), the State Statistical Office (SSO) and the World Bank (WB). For the empirical investigation of the sustainable development - GDP, education, foreign direct investment, poverty unemployment and export - are considered for the time period of 2005-2013 in Macedonia's case.

For the empirical investigation of the study we have used linear regression (OLS). The equation of the regression model is:

\[
GDP = \beta_0 + \beta_1 Inf + \beta_2 Pap + \beta_3 Var + \beta_4 Ars + \beta_5 Ex + \epsilon
\]

The table below shows the description of the variables employed in the model.

**Table 3: data Description**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abbreviation</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>GDP</td>
<td>The economic growth rate (real or nominal)</td>
<td>NBRM</td>
</tr>
<tr>
<td>Inflation</td>
<td>Inf</td>
<td>Increase in overall price level in %</td>
<td>NBRM</td>
</tr>
<tr>
<td>Foreign Investment</td>
<td>Direct IHD</td>
<td>Flow of Foreign Direct Investment %</td>
<td>NBRM</td>
</tr>
<tr>
<td>Unemployment</td>
<td>Pap</td>
<td>The unemployment rate in the country %</td>
<td>NBRM</td>
</tr>
<tr>
<td>Education</td>
<td>Ars</td>
<td>SSE</td>
<td>SSO</td>
</tr>
<tr>
<td>Poverty</td>
<td>Var</td>
<td>Poverty rate in the country %</td>
<td>SSO</td>
</tr>
<tr>
<td>Export</td>
<td>Ex</td>
<td>Transport of goods to other countries (sale, exchange)</td>
<td>NBRM</td>
</tr>
</tbody>
</table>

**Regression Results**
SPSS is used as statistical software to estimate the empirical model. From the empirical investigation done by linear regression (OLS), we have come to conclusion of statistically significant variables such as inflation, poverty, education, and direct export.

**Table 4: The model summary output**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.986</td>
<td>.972</td>
<td>.901</td>
<td>.8348</td>
</tr>
</tbody>
</table>

a. Dependent variable: GDP  
b. Independent variables: inflation, unemployment, poverty, education and exports

**Table 5: ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>R square</th>
<th>Df</th>
<th>R square mean</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>48.021</td>
<td>5</td>
<td>9.604</td>
<td>13.783</td>
<td>.069</td>
</tr>
<tr>
<td>Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>1.394</td>
<td>2</td>
<td>.697</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49.415</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the model, we notice that $R^2$ susceptibility coefficient is 0.972, meaning that independent variables explain the dependent variable for 97%. As a result, the model we have taken in the study is important, and we will also see this when studying the equation and the corresponding variables. For the evaluation of this model, the level of importance or significance is 10%. We build hypotheses to evaluate the importance of the model:

i. $H_0$: The model is not significant (all the coefficients are equal to zero)  
ii. $H_a$: The model is significant (there is at least one coefficient other than zero)

As can be seen in Table 5, we can see that observed F is 13.783 and critical F with alfa is 0.1. If observed F $>$ critical F, then $H_0$ is rejected and the alternative hypothesis $H_a$ is accepted, thus
the model is significant. From the estimated model in SPSS based on our data, we can derive the following equation:

\[ \text{Economic growth (GDP)} = -362.764 - 0.173\text{Inf} + 3.014\text{Pap} + 0.024\text{Var} + 4.453\text{Ars} + 0.377\text{Ex} \]

From this equation we can explain the importance of each variable and the constant, through the magnitudes given to us. The regression results can be interpreted as follows:

- The coefficients of inflation, poverty, is statistically insignificant, thus we do not interpret the coefficient.
- The coefficient of unemployment is positive and statistically significant at 5% level of significance. This means that, 1% increase in unemployment, ceteris paribus, will increase GDP, for 3.01%.
- The coefficient of education is positive and statistically significant at 10% level of significance. This means that, 1% increase in the level of attainment of the secondary school education, ceteris paribus, will increase GDP, for 4.45%.
- The coefficient of export is positive and statistically significant at 10% level of significance. This means that, 1% increase in export, ceteris paribus, will increase GDP, for 3.7%.

IV. CONCLUSION AND RECOMMENDATIONS

In this study, we evaluated the econometric model by linear regression (OLS), where we determined GDP through inflation, unemployment, poverty, education and exports. Out of the results we found that inflation and poverty are statistically insignificant. Considering education and exports, these two variables are foreseeable and came out with the predicted mark.

The most unusual finding is the coefficient of unemployment, which according to our model shows to have positive and statistically significant impact on economic growth. This deviation from the theory comes as a result of the way how unemployment rate in Macedonia is reduced, i.e. it is attributed to employments in public administration, thus the effect they have created in the unemployment rate has been higher than the results achieved in the economy. This is why the unemployment rate has resulted as a determinant that positively impacts GDP.
In order to have greater economic growth and to achieve sustainable development in the near future, concrete steps should be taken in the following areas: (i) Economy (to increase investment in the country and to have economic development); (ii) Education (the Government to invest more in education and greater inclusion of the poor in the educational process); (iii) Social care (creation of social investment funds); (iv) Infrastructure (better quality and availability of social services, road improvement and maintenance for a better environment); (v) Labor market (rural and regional development). It is acknowledged that poverty reduction is possible with economic restructuring driven by the principles of a market economy based on sustainable development, as well as the harmonization of legal regulation with international standards.

Accordingly, so that Macedonia has economic growth and achieve sustainable development must adhere to the abovementioned strategies. The society must face some economic, environmental and social challenges at the same time. Future generations should have at least a favorable opportunity for a good life among generations and to ensure balanced socio-economic development.

Based on the results of this paper and reviewing the literature, the following recommendations are suggested:

1. It is recommended that the Government and economic bodies maintain adequate inflation in the country, as high levels of inflation affect the devaluation of currency, with negative consequences on economic growth. This phenomenon affects the country's lack of sustainable development.

2. One of the recommendations deriving from this study is that the higher the level of education in a country, the easier the achievement of sustainable development.

3. As far as foreign direct investments are concerned, they are to a large extent stimulating economic growth. With economic growth at an appropriate level, the Government can automatically bring the country closer to sustainable economic development.

4. Similar to FDI, the country can also contribute through unemployment rate. Countries with a stable economic development also have low unemployment rates, meaning that to have
sustainable economic development, Macedonia must reduce or mitigate the rate or level of unemployment. However this should be done by increasing the employment in productive labour market, rather than in public administration.

5. Considering the poverty, high levels of poverty negatively affect economic growth, which impedes the country's sustainable economic development.

The general conclusion of the study is that Macedonia should undergo through some serious economic reforms that should be accompanied with social component. So that the achieved economic growth is also sustainable, i.e. in order to achieve a sustainable development, Macedonia should also undertake some environmental activities.

Even though, there are some obstacles to social inclusion and equality, due to high rates of poverty and material deprivation in Macedonia, there are some measures already undertaken. Taking into consideration that Macedonia took some steps on energy, transport and telecom markets, which aim upon building transport infrastructure capacity which expected to bring benefits for the sustainable economic development of the country.

V. References


Kjosev and Eftimov, 2013 Kjosev, S., & Eftimov, L., „*Sustainable development planning – the case of macedonia – planiranje održivog razvoja – slučaj makedonije“*


Temelkovski, S., & Cecev, B., October, (2012) „The sustainable development strategy of macedonia: cooperation opportunities for german partners”.


