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SELECTED ASPECTS AND SPECIFICS OF THE ECONOMIC DEVELOPMENT IN SUB-SAHARAN AFRICA

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Abstract

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The paper examines the development of economies in the sub-Saharan region. It aims to identify particular development trends specific to the region. That means identifying changes which have occurred in the past five decades in following areas: development of the GDP value and structure, growth in the value of foreign trade, demographic growth, and changes in the value of GDP per capita. The results of the analysis show very constrained economic power of sub-Saharan region. Not only weak economy of the region but also a significant population growth is a problem. Increasing production and trade does not contribute effectively to elimination of high level of poverty and malnutrition which remains a long-term problem of the sub-Saharan region. In real terms, the GDP per capita was growing by less than 1% in the period 1961–2010. Sub-Saharan region is highly dependent on cooperation with other world regions in its effort to increase economic growth and to improve the economic situation of own population. The GDP growth is thus very sensitive to GDP development in Europe and North America. Concerning the foreign trade, development of sub-Saharan trade is dependent on regions of the Southern and Eastern Asia, and Europe.

sub-Saharan Africa, economy, GDP, structure, trade, GDP/capita, development, impact, external factors, internal factors, specifics, sensibility

Africa is a continent which consists of 54 states including to Africa belonging island states (UN, 2011). African population exceeds currently 1.07 billion inhabitants and which represents approximately 15% of the world population. Population growth in Africa region is (regarding the time series) very dynamic indicator (Jeníček, 2011). Comparing to the other world regions, African population is growing vertiginous (Jeníček, 2010). From 1961 till 2012, it has grown from about 293 million to (above mentioned) more than 1 billion. That means, an annual growth achieved 2.57% in average; this represents an increase of 15 million a year. A peak of the population growth was achieved in the 70s and 80s, when the annual growth culminated by 2.8% (maximum 2.85% in 1982). In absolute terms, the peak of the population growth has come in current decade, despite of a decline in incremental growth (Jeníček, 2010). An annual increase of population by 2.3% in years 2011/2012 has turned into a decline in the relative growth rate; nevertheless an absolute increment has reached its historical highest value, represented by 24 million people. Such development exceeds essentially population development at other continents. Another African specific is an economic development (Ajakaiye, Ncube, 2010). Regardless of amount of mineral resources and strong population basis, Africa is the poorest region (continent) of the global economy (Ahmed, Suardi, 2009). The total GDP value has been standing at very low level in the long-term; expressed on per capita basis, the figures are remaining deep below a world average (Fosu, 2001). Currently, the value of African GDP reaches about USD 1.9 trillion which is far from results achieved in other regions (the value of world

GDP has achieved USD 69 trillion in 2011). Taking into account the above mentioned share of Africa in the world population and in the value of global product (about 2.75 %), essential abnormalities of economic development will appear. There should be also stressed that backwardness concerns not only the total GDP, but also GDP expressed on a per capita basis. While the average annual world GDP per capita reaches USD 9 to 10 thousand, in the case of Africa, the value stands at around USD 1,750. In this respect, there should be stressed significant differences among African countries in terms of average levels of GDP per capita. While Equatorial Guinea has reached the GDP per capita of USD 14,660 in 2011, Democratic Republic Congo, in contrary, only USD 215 in the same year. Taking into account more than 50 countries of African continent, only three of them exceed an average world GDP per capita. More than forty countries do not touch the level of USD 5,000 per capita, 25 from them even the level of USD 1,000.

From economic, cultural social as well as demographic perspective, Africa is far from being a homogenous continent (Fosu, 2003). Neither distribution of the GDP and population is spread evenly. African continent can be thus divided into several parts. From an economic point of view, it is reasonable to divide it into two main parts: North Africa and sub-Saharan Africa. North Africa which consists of countries adjacent to the Mediterranean See has undergone different evolution. It has had historical ties mainly to Europe contrary to other African regions; its structure of population and related cultural, social and other aspects varies significantly (Kuna, 2010). The population of North Africa is dominated by Arabs, whereas sub-Saharan Africa by black population. About 200 million people live in North Africa, which is about one fifth of the total African population; between 800 and 900 million people are estimated to live in sub-Sahara.

Significant difference between the two parts of Africa lies in their economic performance. While countries of North Africa generate about one third of the total African GDP (approximately USD 610 million), the remaining two thirds (about USD 1.27 trillion) have an origin in the sub-Saharan region. There is evident, there are noticeable differences in the average GDP per capita between the two regions. The average GDP per capita has reached USD 3,000 in 2011; only less than half of this value (less than USD 1,500) fell on sub-Sahara. Sub-Saharan region is thus much poorer and is absolutely the poorest region in the world (Akokpari, 2001). The values of the total GDP as well as of the GDP per capita are the lowest in a global regional comparison.

Sub-Saharan Region is also characterized by the highest percentage of the population living below the poverty line. Currently, about 40% of sub-Saharan population lives on less than USD 1.25 per day (World Bank, 2011). This is reflected in a high rate of malnutrition (Wodon, Zaman, 2010). Almost 205 million inhabitants of the region were confronted with malnutrition in the years 2009–2010, which represents about 30% of the total population. There should be underlined, a problem of malnutrition is long-term problem of Africa (Kuna, 2010; FAO, 2010). Unlike other world regions, where a significant reduction of from hunger suffering population has been achieved in the past five decades, sub-Saharan Africa has been able to solve this phenomenon very gradually (Aryeetey, Moyo, 2011). Due to low level of development, limited economic power, poorly developed infrastructure, insufficient education of the population and insufficient democracy, the sub-Saharan region belongs among one of the most deprived regions of the world (Sahn, Stifel, 2003), where the population suffers from the lowest level of own being comfort (Muller, 2005). Human Development Index (HDI) of the region does not reach a value of 0.5, in some countries even 0.4. The average value of Life Expectancy Index (LEI) stood at 54 in 2010 comparing to the world average of 69. In contrast, the LEI in North Africa reaches 72 (World Bank, 2011). There is evident, sub-Saharan region is very specific and its economic situation and development differs significantly from the other world regions (Kuna, 2010; Murinde, 2011; Oya, 2011).

The article aims to analyze selected aspects of the economic development in sub-Saharan region and identify particular trends specific to the economic development of the region. The aim is to identify changes which have occurred in the past five decades in following areas: development of GDP value and structure and foreign trade. The article also aims to analyze not only a simple development of the mentioned indicators, but also their sensitivity to changes in external environment. In this respect, changes in the value of the GDP and trade performance in relation to GDP in the world and in selected world regions (North America, Europe, Middle Asia, South Asia, Middle East and North Africa, Latin America and Caribbean and East Asia and Pacific) are analyzed as well. Further, there is analyzed an influence of foreign trade on sub-Saharan GDP, including export and import flows realized between the sub-Saharan region and its surroundings, and mutual relationship between the economic development of the other regions and sub-Saharan trade.

MATERIALS AND METHODS

The paper analyses economic development of the sub-Saharan region as a whole. There are totally 48 countries belonging to sub-Sahara (World Bank, 2011): Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Republic of the Congo, Democratic Republic of the Congo, Cote d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-

Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

The World Bank Development Indicators database was used to meet above mentioned objectives (unfortunately the above mentioned database is full of empty places therefore data is completed from the following databases FAOSTAT, EUROSTAT, IMF). Data analysing the economic development of the region include the selected time series 1961–2010 (GDP in current prices, GDP in constant prices, GDP per capita in constant prices, GDP per capita in current prices, population development, the composition of GDP in constant and current prices (agriculture, fuels and raw materials, industry, manufacturing and services)). All values related to economic development and trade are expressed in USD – whereas development is analysed in both current and constant prices (2000 prices). Where data for constant prices were not available, a standard deflator of the World Bank was used for the conversion of current prices to constant prices (see World Bank methodology).

The structure of the GDP is analysed at four levels (agricultural performance, fuels and raw materials performance, industry performance (separately manufacturing industry is analyzed to find out the position of manufacturing in relation to raw materials processing industry) and services sector performance. The analysis is focused also on foreign trade which has an indisputable impact on economic structure of sub-Saharan region. To analyse a relationship of economic development to sub-Saharan population, relevant indicators are expressed per capita both in current and constant prices.

Development of the world GDP and trade is analyzed (using regression analysis) in relation to GDP and trade of sub-Saharan Africa, focused on correlation degree (Lind, Marchal, Wathen, 2005), sensitivity of GDP and trade on changes in the environment (Dougherty 2002). Analysis is also focused on selected economies and their impact on development of the sub-Saharan region. From this perspective, impact of GDP and trade development of following regions on sub-Saharan development has been determined: North America, Europe, Middle Asia, South Asia, Middle East and North Africa, Latin America a Caribbean, East Asia a Pacific. The aim is to identify the degree of influence of particular regions on economic development of sub-Saharan Africa and to identify those regions that are of the highest importance for analysed region.

Simple statistical indicators are used – base index, chain index, arithmetic mean, geometric mean, correlation, degree of sensitivity (functional elasticity) and simple linear regression (Gujarati, 1988). Simple regression is chose especially for its simplicity and also because the main ambition of paper is to get information about the sensitivity (elasticity) of GDP value in relation to selected variables. Because of limited data availability simple regression provided the best results in relation to paper's ambitions. In this case it is necessary to take in consideration that results of regression are affected by spurious regression. But because of quality of data and because of several databases are used, the authors made a decision to accept this problem – because there are convenienced that model is able to provide a sufficient data describing the sensitivity of Sub-Saharan countries' GDP in relation to bellow mentioned variables.

Specifically, single equation regression models are used, i.e. functions in the form of:

$$y = f(x) \text{ respectively } y = b_1 + b_2X_i,$$

where
y................. is the explanatory variable,
$x_1, \ldots, x_n$... are the explanatory variables,
$b_1, \ldots, b_n$ .. are the estimated parameters.

The parameters of the models are estimated by way of the standard least squares method. The suppositions of regression models and further methodological associations are set, for example, by Gujarati, 1988.

Four regression relationships are presented, which explain a development of the sub-Saharan region.

- Sub-Saharan GDP = f(export of goods and services)
- Sub-Saharan GDP = f(import of goods and services)
- Sub-Saharan GDP = f(export of goods, export of services, import of goods, import of services

There is expected that foreign trade plays an important role in Sub-Saharan countries GDP development. Both export and import performance should be closely related to GDP growth. Modern economies' economy growth in nowadays is especially based on their trade performance. It is the reason why the impact of trade performance – both export and import – in relation to analysed region GDP performance is analyzed.

- Sub-Saharan GDP = f(GDP of North America, GDP of Europe, GDP of Middle Asia, GDP of South Asia, GDP of Middle East and North Africa, GDP of Latin America and Caribbean, GDP of East Asia and Pacific.)
- Turnover of the sub-Saharan foreign trade = f(GDP of North America, GDP of Europe, GDP of Middle Asia, GDP of South Asia, GDP of Middle East and North Africa, GDP of Latin America and Caribbean, GDP of East Asia and Pacific.)
- Sub-Saharan Africa is dependant on other regions economy performance. African countries are heavily dependant especially on inter-regional trade. According to WTO statistics the share of African countries intra regional trade in their total trade performance is about 10–15 %, it means their trade relations are based especially on trade with the other regions. Sub-Saharan Africa is

dependant not only on trade in other regions, but also on FDI flows coming from other regions and also on official and unofficial development assistance provided by other regions. Therefore it is expected that Economy performance of individual regions should have direct or indirect impact on sub-Saharan countries GDP and trade formation and performance.

The paper is also providing an analysis of sub-Saharan region's GDP sensitivity in relation to changes in selected external variables values. The sensitivity is calculated.

The calculation of elasticity is then based on the following relationship:

$$E = (\partial y/\partial x_i) / (x_i/y).$$

From the equation, it is apparent the elasticity is a ratio of the percentage change of the explained variable to the percentage change of the explaining variable "i".

Based on a synthesis of the results stemming from the above mentioned analysis, the most important development trends of sub-Saharan economy are identified in the later part of the article. Furthermore, the specifics distinguishing economic development of sub-Saharan Africa from economic development in other world regions are outlined. The article offers also some reflections of the future development of the sub-Saharan region.

RESULTS AND DISCUSSION

Gross domestic product of the sub-Saharan countries has increased its value significantly from 1960 to 2011. While at the beginning of the period, the value of GDP stood at about USD 30 billion, the value accounted more than 1,445 billion USD at the end of the reporting period. However, the population has increased also significantly along with the GDP growth. While the population of sub-Saharan countries accounted about 230 million people in 1960, the level reached almost 880 million in 2011. Average annual growth of nominal GDP reached during the observed period 7.6%; average annual growth of population reached 2.65% in the same time. GDP in current prices has thus grown much faster in comparison to the population growth. Converting the GDP into capita (expressed in current prices), there is an increase from USD 129 to USD 1,445. An average GDP per capita growth has achieved a high value of 4.85%. An analysis of time series through basic index can show that all observed indicators (GDP, GDP per capita and population) were growing significantly during the analysed period. (GDP has increased its value 42.5 times, GDP per capita 11.2 times and population 3.8 times). These figures seem to be inspiring. A simplified view could lead to a conclusion that sub-Saharan region (although much weaker comparing to other world regions) is able to generate an essential economic growth and to eliminate step by step a gap between sub-Saharan Africa and rest of the world. However the reality is more complicated. Converting the above mentioned values into constant prices, another reality will appear. Evaluating situation of sub-Saharan Africa using just current prices indicators may lead to incorrect conclusions that the situation of population is improving. In average, a daily income per capita reaches approximately USD 4 in sub-Sahara; that means, the value has increased more than ten times from 1960 (USD 0.35 in 1960). Converting the indicators into constant prices (2000 prices), the economic growth and thus a growth of living standard is not so high. Expressing in constant prices, the GDP has grown from 1960 to 2011 just 5.9 times (from USD 98 billion to USD 574 billion), and the value of GDP per capita has grown 1.5 times (from USD 424 to USD 655). The average annual growth rate of the GDP measured in constant prices (2000) reached during the period only 3.53%. The average annual GDP per capita growth rate reached only 0.86% in the same period. There is thus evident, a high rate of population growth largely eliminates the GDP growth per capita. More detailed insight shows, that growth rate of population even exceeded the GDP growth in some years. This was typical especially in the period of the 80s and 90s last century, when the average GDP growth rate (measured in constant prices 2000) reached 1.86% respectively 2.30%, and the average population growth reached 2.84%, respectively 2.66%. It follows that the value of disposable GDP per capita was showing even decreasing trend during that period. Focusing on other periods, it may be seen, the GDP of sub-Saharan Africa, in particular measured in proportion to the growth of population, reaches very dismal values. During the 60s, the GDP per capita was growing by 2.4% on annual average, in the 70s, it was only 0.9%, whereas the GDP per capita was falling during the 80s and 90s by 1%, respectively 0.3% on annual average. A growth has occurred at the beginning of the 21th century, when the GDP per capita (measured in constant prices) has increased by 2.2% on annual average during the first decade. This growth can be justified by processes of globalization, internationalization and liberalization of the world economy (Svatos, 2007), which has helped to integrate the countries of sub-Saharan region into the world economy (Ndulu, 2006). Gradual stabilization of the region contributed essentially to its recovery; especially during the 90s due to a decrease of the number of armed conflicts, stabilization of governments and increased inflow of foreign investment into particular countries (Zafar, 2007; Radelet, 2010; Mahajan, 2008). The value of net foreign direct investment has grown from USD 1 billion to more than USD 38 billion in the period 1970–2008. Due to the crisis, a subsequent decrease of the annual value of investments to USD 34 billion, respectively USD 26 billion has been noted in 2009 and 2010. Expressed in constant prices 2000, the value of foreign direct investment has increased from USD

2.2 billion to almost USD 20 billion during the above mentioned period.

The average annual growth of foreign direct investment (measured in current prices) reached 8.7% in the years 1970–2010, respectively 4.5% (measured in constant prices). However, the situation in sub-Saharan Africa is improving only very slowly, measured by socio-economic indicators. The average final household consumption per capita has been below USD 800 in the observed region (2010). Total consumption expenditure per capita does not reach USD 1000 USD even with respect to public consumption. The value of HDI does not exceed 0.6; the LEI value is also very low (54 years). Another problem of the region is an unfavourable value of the Gini coefficient, which stands at average 0.42 (the lowest value reaches Ethiopia 0.298; Seychelles report the highest value 0.658).

Structure of sub-Saharan economy belongs to the most significant problems of the region. Unlike other world regions, sub-Sahara is characterized by a high share of primary and secondary sectors in the overall performance of the economy. The share of services in GDP is very low, comparing to OECD countries. Currently (2010), the agricultural sector contributes around 14% to the GDP, fuels and raw materials represent about 25% of GDP, the share of manufacturing has reached 9% and services less than 46%. In particular, the share of the primary sector in the total sub-Saharan GDP is extreme high and does not enable to improve significantly the economic situation of the region due to limited value added, which is generated by the primary sector. However, when focusing on the progress of the share of particular sectors in the total GDP, there is evident that sub-Saharan Africa has made certain progress during the last fifty years. At the beginning of the analysed period (1960), the share of

I: *Selected indicators of economic development in sub-Saharan Africa*

Indicator	1960	1970	1980	1990	2000	2005	2007	2008	2009	2010	2011
GDP in mld. (constant 2 000 USD)	97.7	158.2	227.1	273.1	343	431.5	488.9	513.7	524.8	550.8	573.6
GDP per capita (constant 2 000 USD)	424	537	586	533	515	572	616	632	630	645	655
GDP in mld. (current USD)	29.8	64	271.6	300.4	343	651.8	881.8	1009.2	953.4	1117.5	1265.1
GDP per capita (current USD)	129	217	701	586	515	863	1 112	1 242	1 144	1 309	1 445
Population in mil.	230	295	387	513	667	755	793	813	833	854	876
GDP value development in relation to 2 000 (constant 2 000 USD)	0.226	0.461	0.662	0.796	1.000	1.258	1.425	1.498	1.530	1.606	1.672
GDP per capita value development in relation to 2 000 (constant 2 000 USD)	0.741	1.043	1.138	1.035	1.000	1.111	1.196	1.227	1.223	1.252	1.272

Source: WB, 2012 own calculations

II: *Analysis of indicators from Tab. I, based on basic indexes*

Indicator	1960/ 1970	1970/ 1980	1980/ 1990	1990/ 2000	2000/ 2005	2005/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2000/ 2011	1960/ 2011
GDP in mld. (constant 2 000 USD)	1.62	1.44	1.20	1.26	1.26	1.13	1.05	1.02	1.05	1.04	1.67	5.87
GDP per capita (constant 2 000 USD)	1.26	1.09	0.91	0.97	1.11	1.08	1.03	1.00	1.02	1.02	1.27	1.54
GDP in mld. (current USD)	2.15	4.24	1.11	1.14	1.90	1.35	1.14	0.94	1.17	1.13	3.69	42.51
GDP per capita (current USD)	1.68	3.23	0.84	0.88	1.68	1.29	1.12	0.92	1.14	1.10	2.81	11.18
Population in mil.	1.28	1.31	1.32	1.30	1.13	1.05	1.02	1.02	1.02	1.03	1.31	3.80

Source: WB, 2012 own calculations

III: *Analysis of indicators from Tab. I, based on chain indexes (chain indices summarized according the geomean calculation)*

Indicator	1960–70	1971–80	1981–90	1991–00	2001–11	2007–11	1960–2011
GDP (constant 2 000 USD)	1.0494	1.0368	1.0186	1.0231	1.0479	1.0457	1.0353
GDP per capita (constant 2 000 USD)	1.0238	1.0089	0.9904	0.9966	1.0222	1.0202	1.0086
GDP (current USD)	1.0796	1.1555	1.0102	1.0134	1.1260	1.1071	1.0763
GDP per capita (current USD)	1.0532	1.1244	0.9822	0.9871	1.0984	1.0801	1.0485
Population	1.0250	1.0277	1.0284	1.0266	1.0251	1.0250	1.0265

Source: WB, 2012 own calculations

the primary sector in GDP exceeded 55%, the share of manufacturing amounted about 9% and the share of services around 36%. The share of agricultural sector in GDP has been significantly reduced in the period from the 60s to the 80s. In the contrary, an increase in the share of services has occurred mainly during the 80s and 90s. In recent years, there has been a significant increase in the proportion of fuels and raw materials in the GDP, mainly due to rising demand and growth in prices.

An analysis of particular GDP segments provides following findings:

Between 1960–2010, the value of agricultural production has increased from around USD 11 billion to more than USD 150 billion; the value of fuels and raw materials production from USD 5 billion to nearly USD 280 billion; the value industrial production from less than USD 2.6 billion to nearly USD 98 billion and the value of services has jumped up from less than USD 11 billion to more than USD 511 billion. However, it should be mentioned, the GDP growth is expressed in current prices. Taking into account constant prices (2000 prices), the growth is no more as significant as in the above comparison (see Tab. V and Tab. VI).

IV: *Share of individual sectors of the regional economy in GDP (in %)*

sector	1960	1970	1980	1990	2000	2005	2006	2007	2008	2009	2010
Agriculture (current USD)	37.4	22.7	18.8	21.8	16.8	13.3	13.7	13.8	14.0	16.1	13.6
Fuels and raw materials (current USD)	17.4	17.3	20.1	18.0	17.8	22.4	24.0	24.5	27.0	23.6	25.0
Industry (current USD)	26.1	28.5	31.1	32.6	29.8	33.1	33.8	34.0	35.7	32.5	33.8
Manufacturing (current USD)	8.7	11.2	11.0	14.6	12.1	10.7	9.8	9.5	8.7	8.9	8.8
Services, etc., (current USD)	36.4	36.5	33.4	44.0	45.9	43.9	43.2	42.8	39.9	44.1	45.7

Source: WB, 2012 own calculations

V: *GDP of sub-Saharan Africa by individual sectors*

In mil. USD	1960	1970	1980	1990	2000	2005	2010
Agriculture (constant 2000 USD)	36 583	35 957	35 555	43 976	57 614	66 932	80 547
Fuels and raw materials(constant 2000 USD)	17 018	38 226	45 273	53 442	61 013	82 255	105 433
Industry (constant 2000 USD)	25 549	55 299	73 321	87 780	102 359	130 790	161 141
Manufacturing (constant 2000 USD)	8 531	17 073	28 048	34 338	41 346	48 535	55 708
Services (constant 2000 USD)	35 588	67 654	99 810	122 883	157 471	199 294	309 074
Agriculture (current USD)	11 140	14 540	51 134	65 501	57 614	86 517	151 516
Fuels and raw materials (current USD)	5 182	11 098	54 663	54 224	61 013	146 005	279 693
Industry (current USD)	7 780	18 242	84 473	97 937	102 359	216 021	377 617
Manufacturing (current USD)	2 598	7 144	29 810	43 713	41 346	70 015	97 924
Services (current USD)	10 837	23 365	90 702	132 120	157 471	285 907	511 031

Source: WB, 2012 own calculations

VI: *GDP growth of sub-Saharan Africa by individual sectors*

	Chain index						Basic index
	1961/70	1971/80	1981/90	1991/00	2001/10	1961/2010	2010/1961
Agriculture (current USD)	1.027	1.134	1.025	0.987	1.102	1.054	2.202
Fuels and raw materials(current USD)	1.079	1.173	0.999	1.012	1.164	1.083	6.195
Industry (current USD)	1.089	1.166	1.015	1.004	1.139	1.081	6.307
Manufacturing (current USD)	1.106	1.154	1.039	0.994	1.090	1.075	6.530
Service (current USD)	1.080	1.145	1.038	1.018	1.125	1.080	8.685
	1961/70	1971/80	1981/90	1991/00	2001/10	1961/2010	2010/1961
Agriculture (constant 2 000 USD)	0.998	0.999	1.021	1.027	1.034	1.016	10.130
Fuels and raw materials(constant 2 000 USD)	1.084	1.017	1.017	1.013	1.056	1.037	13.601
Industry (constant 2 000 USD)	1.080	1.029	1.018	1.015	1.046	1.038	53.970
Manufacturing (constant 2 000 USD)	1.072	1.051	1.020	1.019	1.030	1.038	48.537
Service (constant 2 000 USD)	1.066	1.040	1.021	1.025	1.070	1.044	37.696

Source: WB, 2012 own calculations

Comparing the average annual growth of the agricultural production in current and constant prices, two completely different values will appear. While the average annual growth reached 5.4% at current prices, it was only 1.6% in constant prices. Similar findings will be achieved when comparing the growth rate of fuels and raw materials (8.3%, respectively 3.7 %), industrial production (7.5%, respectively 3.8%) and services (8%, respectively 4.4 %). It can be deduced, the growth of the real value of the production is considerably lower than the nominal one (see Tab. VI). Analysed figures also inform that a higher GDP growth of sub-Saharan Africa was concerning mainly services. The GDP growth of fuels and raw materials, manufacturing and industry was almost balanced but lower than services. The lowest values may be found in the case of agrarian sector. This finding corresponds with a fact that the share of agrarian sector is declining at expense of services. Nevertheless, a positive development of services in sub-Saharan economy has still been keeping under the world average (notably in the period 1960–1990).

An improper structure of the sub-Saharan GDP hinders economic development and living standard of population. This problem consists in lack of capital and also in a low purchasing power (Akyuz, Gore, 2001; Mwabu, Thorbecke, 2004). In addition, there are other problems like obsolete equipment, insufficient infrastructure, low level of education etc. Not least, a security situation should be mentioned as well as an inability of countries to participate actively in the process of globalisation and economic liberalisation (Ezeh, Bongaarts, 2012; Moore, 2011). There is no sufficient developed market which doesn't enable to start a growth by own internal sources (Fosu, Kimenyi, Ndungu, 2003). Sub-Saharan Africa is distinctly depending on other regions of the world. There is just low specialisation of countries within an internal African market. They dispose of similar products, factors of production and become rather competitors (Mengistae, Pettillo, 2004). There is very narrow space to cooperate and benefit from such based economic growth. It can be illustrated on an example of integration processes which are not well performing across the whole African region (Pokorna, Smutka, 2009). There are about ten integration blocks which interconnect the whole Africa, but no one has fulfilled its original expectations (in some cases, a decline of economic cooperation has occurred after formal establishing a block). More effective cooperation has been starting in last 20 years.

Following description illustrates the situation in foreign trade. There should be stressed, foreign trade is generally an important component of national economies. Not always it is a component of a high proportion in the final GDP, nevertheless it is always a component which encourages economic development, more efficient use of sources and enables consumption of goods which are not produced (or produced just at a limited level) in given country.

The value of sub-Saharan foreign trade has grown essentially from 1961 to 2010. Exports have increased from about USD 6.7 billion to almost USD 375 billion during given period. Imports have grown from about USD 6.9 billion to more than USD 378 billion in the same time. The value of exports has increased more than 56 times and value of imports more than 55 times. Foreign trade of sub-Saharan countries is characteristic by a high share of goods transactions compared to transactions of services. Services contribute by about 20% to the total value of imports and by 10 till 20% to the total value of exports. Whereas a balance of goods trade is positive in the long-term horizon, services trade remains negative in the long term (see Tab. VII). The growth has been more or less balanced both at imports and exports during the observed period. Generally, it can be stated that the growth rate of exports and imports is higher than the GDP growth rate of the region. Analysing the trade of goods, the growth rate of export is higher in average comparing to imports, contrary to growth rate of services, where opposite situation has been monitored. Openness to trade transactions of sub-Saharan region may be perceived as a positive feature. The share of both export and import is growing continuously in the long-term. Unfortunately the export growth concerns mainly products of low value added. Exported goods are often of an ownership of foreign investors and profits achieved are thus rarely keeping in the region. Another situation may be seen at imports. Also here, the value is growing in the long-term; however this growth is mainly generated by products of higher value added which gives rise to outflow of foreign currencies from the region.

Not only an insufficient development of export structure, but also specific territorial structure of trade (mainly of export), belong to serious problems of sub-Saharan Africa. Countries export mostly out of the region, just low share of the total trade is realized within sub-Sahara. Intra-regional trade shares from 10 to 20% to the total trade in the long term. This may be evaluated as an improvement, because only 3% of the total trade were realized within the region at early stage of the observed period. Sub-Saharan counties are dependent on trade with developed countries in the long term. Trade with developed countries exceeds 50% of the total sub-Saharan trade. However a positive shift to trade with other developing countries can be also observed. The share has increased from 13% in 1960 to 46% in 2010 at exports and from 16.5% to 50% at imports. A direct relation of trade value to the GDP can be evaluated positively (see Tab. IX).

Tab. IX presents relatively high elasticity of the GDP to both exports and imports. The elasticity of GDP relating to 1% change in exports is 0.83%, relating to imports then 0.85%. The correlation analysis proves strong mutual relation between

VII: *Selected characteristics of foreign trade in sub-Saharan Africa*

(current USD$)	1960	1980	1990	2000	2010
Merchandise exports	5 730 367 546	77 794 488 348	68 367 950 912	94 488 761 336	341 975 303 535
Merchandise imports	5 577 858 148	66 703 202 583	57 641 045 643	81 807 655 585	307 837 322 667
Services exports	949 376 535	4 477 389 648	11 199 272 966	21 529 444 564	32 676 672 240
Services imports	1 284 768 570	8 791 600 835	16 593 288 791	23 923 060 172	70 850 448 164
Exports of goods and services	6 679 744 080	82 271 877 995	79 567 223 878	116 018 205 900	374 651 975 775
Imports of goods and services	6 862 626 717	75 494 803 418	74 234 334 434	105 730 715 756	378 687 770 830
Balance of the total trade	–182 882 637	6 777 074 578	5 332 889 444	10 287 490 144	–4 035 795 056
Balance of the trade of goods	152 509 398	11 091 285 764	10 726 905 270	12 681 105 752	34 137 980 869
Balance of trade of services	–335 392 035	–4 314 211 187	–5 394 015 825	–2 393 615 608	–38 173 775 924
Share in the GDP	1960	1980	1990	2000	2010
Merchandise exports	19.26%	28.65%	22.76%	27.54%	30.60%
Merchandise imports	18.74%	24.56%	19.19%	23.85%	27.55%
Services exports	3.19%	1.65%	3.73%	6.28%	2.92%
Services imports	4.32%	3.24%	5.52%	6.97%	6.34%
Exports of goods and services	22.45%	30.30%	26.49%	33.82%	33.53%
Imports of goods and services	23.06%	27.80%	24.71%	30.82%	33.89%
Share of services in total export	14.21%	5.44%	14.08%	18.56%	8.72%
Share of services in total import	18.72%	11.65%	22.35%	22.63%	18.71%

Source: WB, 2012 own calculations

VIII: *Analysis of sub-Saharan foreign trade development*

	chain index						basic index
	1961/70	1971/80	1981/90	1991/00	2001/10	1961/2010	2010/1960
Merchandise exports (current USD)	1.072	1.211	0.987	1.033	1.137	1.085	59.678
Merchandise imports (current USD)	1.071	1.196	0.986	1.036	1.142	1.084	55.189
Services exports (current USD)	1.051	1.111	1.096	1.068	1.043	1.073	34.419
Services imports (current USD)	1.096	1.106	1.066	1.037	1.115	1.084	55.146
Exports of goods and services (current USD)	1.069	1.203	0.997	1.038	1.124	1.084	56.088
Imports of goods and services (current USD)	1.076	1.181	0.998	1.036	1.136	1.084	55.181

Source: WB, 2012 own calculations[1]

IX: *Analysis of export and import related to GDP*

N = 51	Regression with dependent variable: GDP, R = .99000719 R^2 = .98011423 Adjust R^2 = .97970840, F(1.49) = 2415.1 p < 0,0000 Standard error: 37.144					
	b*	St.error from b*	B	St.error from b	t (49)	p-¨value
Constant term			51.99701	7.117985	7.30502	0.0000
Export of goods and services	0.990007	0.020145	2.70592	0.055062	49.1434	0.0000
N = 51	Regression with dependent variable: GDP, R = .99367608 R^2 = .98739215 Adjust R^2 = .98713484, F(1.49) =3837.5 p < 0,0000 Standard error: 29.576					
	b*	St.error from b*	B	St.error from b	t (49)	p-value
Constant term			45.97838	5.72459	8.03173	0.0000
Import of goods and services	0.993676	0.016041	2.75982	0.044551	61.94728	0.0000

Source: WB, 2012 own calculations

value of foreign trade and GDP. It is stronger rather in relation to GDP – trade of goods than GDP – trade of services.

The results show that sub-Saharan region depends essentially on trade with other world regions. An inflow of foreign direct investments plays here

X: *Analysis of sub-Saharan GDP and GDP particular regions*

N = 52	Regression with dependent variable: GDP, $R = .99967716$ $R^2 = .99935441$ Adjust $R^2 = .99926834$ $F(6.45) = 11610$, $p < 0,0000$ Standard error: 3.3242					
	b*	**St.error from b***	**b**	**St.error from b**	**t (49)**	**p-value**
Constant term			–9.81451	7.817629	–1.2554	0.215802
South Asia	0.769808	0.028702	0.29773	0.011101	26.8208	0.000000
North America	–0.629167	0.047351	–0.02433	0.001831	–13.2873	0.000000
Middle East and North Africa	0.116367	0.070011	0.03618	0.021765	1.6621	0.103440
Latin America	0.221142	0.075221	0.03802	0.012933	2.9399	0.005167
Europe and Central Asia	1.024184	0.066319	0.04872	0.003155	15.4433	0.000000
East Asia and Pacific	–0.482511	0.055514	–0.01866	0.002147	–8.6917	0.000000

Source: WB, 2012 own calculations

XI: *Relation of foreign trade turnover in sub-Sahara and GDP in particular regions of the world economy*

N = 52	Regression with dependent variable: Foreign trade turnover $R = .99451797$ $R^2 = ,98906599$ Adjust $R^2 = .98757499$ $F(6.44) = 663,36$ $p < 0,0000$ Standard error: 10.275					
	b*	**St.error from b***	**b**	**St.error from b**	**t (49)**	**p-value.**
Constant term			–43.8914	24.19229	–1.81427	0.076458
South Asia	1.01566	0.111686	0.3172	0.03488	9.09395	0.000000
North America	0.14723	0.196611	0.0044	0.00582	0.74882	0.457950
Middle East and North Africa	0.19145	0.277278	0.0466	0.06746	0.69047	0.493523
Latin America	0.35227	0.301884	0.0473	0.04053	1.16690	0.249536
Europe and Central Asia	0.48799	0.268086	0.0178	0.00976	1.82027	0.075523
East Asia and Pacific	–1.18799	0.221093	–0.0357	0.00665	–5.37324	0.000003

Source: WB, 2012 own calculations

an important role (currently, it is about USD 26 billion per year) as well as development aid which reaches annually USD 5–10 billion. This leads to conclusion that the sub-Saharan development is strongly dependent on economic development in other parts of the world. The relation of the sub-Saharan economy to economies of selected regions is illustrated in the Tab. X and Tab. XI (data are translated into constant prices 2000 for the period 1960–2010). The tables present relation of GDP and export of the region on one hand, and GDP of particular partner regions on the other hand.

Elasticities resulting from the Tab. X give an overview about correlation and its importance between the sub-Saharan GDP related to other world regions. The strongest correlation relates to Europe and North America. The elasticity reaches 1.27%, respectively 0.63%. The sensitivity is much lower at East Asia and Pacific (0.36%), South Asia (0.46%) and Latin America (0.21 %). Very low sensitivity of the GDP relates to Middle East and North Africa (0.08 %). Regression analysis has stressed also an unimportance of the last mentioned region on generating GDP in sub-Saharan Africa.

Foreign trade, which is an important component of the GDP, is determined by development of economies in other countries. Foreign trade turnover (rather turnover of export) is given by development of other regional economic as illustrates the Tab. XI.

The table shows an important correlation of sub-Saharan foreign trade to South Asia, Europe and East Asia. Taking into account the sensitivity to GDP changes in particular regions, there is evident, sub-Saharan foreign trade is very sensitive to East Asia (1.04 %), South Asia, Europe and Middle Asia (0.71 %). Low sensitivity of foreign trade to GDP changes has been found at North America, Middle East and North Africa (0.17% and 0.15 %). The sensitivity to Latin America is ranging around 0.4%.

Sensitivity analyses give a general overview that economic and trade development of sub-Saharan Africa is close related to economic development in Europe and Asia, partly also North America.

CONCLUSION

Provided analyses give an overview over very limited economic power of the sub-Saharan region. The share of the region on the world production (1.8%) and trade (2%) does not correspond to its share of the world population (12–13 %). This disproportion is becoming stronger due to a population growth. The population is growing annually by more than 20 million, in the period 1960–2011 it was by 12.5 million in average. However the population growth does not stimulate economic growth and leads contrary to increasing socio-economic problems. The population is growing too fast comparing to growth of industrial production and development of services. New labour is not equally distributed among particular sectors of national economies. People working in the primary sector still exceed the share of 50% in sub-Sahara. Secondary and tertiary sectors are not developed sufficiently from the perspective of labour layout. These sectors are not able to generate enough of new working positions to transfer labour from the primary sector. Most of the sub-Saharan labour is thus active in such branches that generate very low added value (agriculture, mining and basic processing of raw materials).

The share of primary sector in total GDP is extremely high in comparison with other regions of the world, especially in comparison with Europe and North America. Likewise, significant problems appear in the secondary sector, because it is not able to produce finalized products with higher added value and products with comparative advantages in the global market. Growth of production and trade is not able to eliminate high levels of poverty and malnutrition with which the sub-Saharan region faces in the long-term. Although the production and trade growth was reaching significant values from 1960 till 2010 which oscillated annually between 3% and 4%, the growth rate of the population avoided full transformation of the GDP into income. In real terms, the GDP per capita has risen very slowly in the given period – on average less than 1% per year. The real value of the GDP per capita has increased just from USD 424 to USD 655 at constant prices 2000 during the period. The low level of GDP is logically related to the low level of household consumption (USD 764 per capita) and government consumption (USD 197 per capita). It can be concluded that the sub-Saharan region is failing in fight against poverty of own population and phenomena associated with poverty.

Sub-Saharan region is highly dependent on cooperation with other world regions, when it strives to economic growth and improvement of the economic situation of its own population. In this respect, an important role plays especially Europe, South Asia and North America. GDP growth in the Sub-Saharan region is sensitive mainly to GDP growth in Europe and North America. Taking into account trading activities, the trade of sub-Saharan Africa (especially export) is dependent on South and East Asia and Europe. There is low level of an intra-regional trade in the region. Sub-Saharan countries collaborate only to a limited extent with each other in terms of economic cooperation. The share of intra-trade in the total sub-Saharan trade does not exceed 20%, which makes this region extremely dependent on its outer surroundings. Downturn in the world economy (especially in Europe and Asia) was thus directly reflected in the economy of this poorest region of the world.

Sub-Saharan region currently represents a specific of the global economy. Its consolidation and starting own economic growth will undoubtedly take several decades. The main problem of this most economically undeveloped world region is the structure of its economy, which does not meet the needs of economies of the 21st century. Another problem concerns the extreme poverty of the population which does not enable to use efficiently the potential of the workforce. Low purchasing power is another significant disturbing element for development of the internal market in the region. Generally, it can be stated, the improvement of the current situation will require a long-term horizon and solution will be laying not only in an aid coming from outside, but the process of a mutual cooperation among sub-Saharan countries will be necessary as well.

SUMMARY

The paper examines the development of economies in the sub-Saharan region. It aims to identify particular development trends specific to the region. That means to identify changes which have occurred in the past five decades in following areas: development of value and structure of GDP, growth in the value of foreign trade, demographic growth, and changes in the value of GDP per capita. The paper analyses economic development of the sub-Saharan region as a whole consisting totally of 48 countries. The World Bank Development Indicators database and the FAOSTAT database were used to meet the objectives. Data analysing the economic development of the region include the selected time series 1961–2010. The structure of the GDP is analysed at four levels (agriculture, mining and mineral processing, industrial production and services). The analysis is focused also on foreign trade which has an indisputable impact on the economic structure of sub-Saharan region. To analyse a relationship of economic development to sub-Saharan population, relevant indicators are expressed per capita both in current and constant prices.

Development of the world GDP and trade is analysed (using regression analysis) in relation to GDP and trade of sub-Saharan Africa, focused on correlation degree, sensitivity of GDP and trade on changes in the environment. Analysis is also focused on selected economies and their impact on development of the sub-Saharan region. The results of the analysis show very limited economic power of sub-Saharan region. Not only weak economy of the region but also a significant population growth remains a problem. Increase of production and trade does not contribute effectively to elimination of high level of poverty and malnutrition which remains a long-term problem of the sub-

Saharan region. In real terms, the GDP per capita was growing by less than 1% in the period 1961 – 2010. Sub-Saharan region is highly dependent on cooperation with other regions of the world in its effort to increase economic growth and to improve the economic situation of own population. The GDP growth is thus very sensitive to GDP development in Europe and North America. Concerning the foreign trade, development of sub-Saharan trade is dependent on regions of the Southern and Eastern Asia, and Europe. At the end, it has to be emphasized, that the sub-Saharan region represents currently specifics of the global economy. Its consolidation and starting own economic growth will undoubtedly take several decades. The main problem of this most economically undeveloped world region is the structure of its economy, which does not meet the needs of economies of the 21st century. Another problem concerns the extreme poverty of the population which does not enable to use efficiently the potential of the workforce. Low purchasing power is another significant disturbing element for development of the internal market in the region. Generally, it can be stated, the improvement of the current situation will require a long-term horizon and solution will be laying not only in aid coming from outside, but the process of a mutual cooperation among sub-Saharan countries will be necessary as well.

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