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DETERMINANTS OF ECONOMIC GROWTH IN DEVELOPING COUNTRIES

Abstract

The research of the determinants of economic growth in developing countries is focused to assessing the prospects for the development of this group and its convergence with developed countries. **The purpose of research** is to identify the determinants of the economic growth of developing countries for the further development of conclusions on their development and convergence with developed countries. **The object of research** is the economic development of developing countries. The concept of development was investigated in the context of two general approaches, it were estimated its critical remarks and it were established historical links between industrialization and economic growth. It is defined the relationship between the growth rates of the developing countries, their deviations in per capita income and the share in world GDP. It is defined the place of developing countries in world industrial production and export and it is established the influence of industrialization on international trade and investment. It is investigated the degree of attraction of human and physical capital in the production of natural resources and added value. It is analyzed the world level of real wages and It is determined the extent of its promotion in the achievement of high end results of labor. It is estimated the inflation rate and its impact on the profitability of investment projects and it is defined the competitive-

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ness of countries. It is formulated the conclusions on the development of developing countries and the prospects of their convergence with developed countries.

Key words:

Added value, developed countries, developing countries, economic development, economic growth, foreign direct investment, GDP per capita.

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Introduction

Growth and development have significant potential and cumulative character, but there are real limitations in nature. Limitations can be overcome in a sustainable manner only if economic growth translates into real development that will improve the welfare of all people. Today's globalization has not solved but has aggravated the problems that interfere with real integration of poor countries into the system of world economic relations and it has strengthened the problems of poverty and backwardness. From a historical perspective, there is a distinction between the geographic distribution of the world and the economic one. The economic division of the world into developed and developing countries is a modern classification. Issues concerning the prospects of developing countries and the issue of poverty eradication in the world are still relevant. So, there is a scientifically substantiated need of hypothesis verification: developing countries will have difficulties with the convergence process or not; and developing countries will have lag with developed countries or not.

Analysis of the recent research and publications. Theoretical aspects of economic development were the object of research a large number of economists: M. Abramovitz, G. Brundtland, B. Higgins, S. Kuznets, D. Landes, A. Maddison, D. Meadows, H. Myint, A. Szirmai. The economic growth in the world analyzed R. Barro, G. Becker, E. Borensztein, R. Caves, P. Collier, R. Easterlin, A. Ghosh, J. De Gregorio, R. Kavoussi, A. Rappaport, J. Sachs, M. Todaro, A. Warner. However, the problem is not fully investigated and the determinants of economic growth in developing countries need of additional research.

Actuality of this problem, its practical value and the presence of critical remarks caused the main purpose of the article, which consist in establishing the determinants of economic growth in developing countries for further development of conclusions on their development and convergence with developed countries.

As part of this purpose we can identify the following objectives of our research, in particular, to research the concept of economic development; to analyze time series data by country group; to identify the determinants of growth in developing countries; to draw conclusions on the further development and convergence of developing countries with developed countries.

Main Material

Concept of development. In the concept of development H. Myint identified two common approaches: the fight against poverty and the analysis of long-term socio-economic development (Myint, 1980). The first approach focuses on poverty and hunger in developing countries in the context of their short-term solution. The second approach focuses on comparing events in different countries, regions and historical periods in order to better understand the factors, which have a long-term impact on the dynamics of socio-economic development. The peculiarity of the first approach is the active involvement developing countries and their populations in solving problems. This approach is closely linked to development policies and strategies at the international, national, regional and local levels. Proponents of the long-term approach to understanding development, in particular A. Szirmai, tried to understand the emergence in time of significant differences in different regions of the world (Szirmai, 2015). They tried to establish conditions describing different development models, such as the accumulation of production factors, the effectiveness of using these factors in production, technological changes, external political and economic influences, historical factors, institutions and cultural differences. As a result, D. Landes and A. Maddison summed up that economic growth in the modern form is closely linked to the economic development of western countries from the middle of the 18th century (Landes, 1998; Maddison, 2001).

The history of modern economic growth is associated with industrialization, as well as with the process that B. Higgins ironically called «deprivation from farmers» (Szirmai, 2015). Again, historical links between industrialization and economic growth cannot be applied arbitrarily to developing countries. However, they are an additional reference point. In addition, a comparison of the historical development of developed countries and developing countries can argue the economic role of institutions. Also, the historical study of the processes of economic growth shows the importance of saving and investments in the accumulation of production factors. Such research eliminates illusions about the human

cost of economic growth because in the past economic growth was associated with a large increase in capital investment. Almost in every case, the term «development» means the presence of certain poor countries and regions of the world on the one hand and prosperous countries with a relatively small percentage of the world's population on the other side.

The debate around the concept of «development» always selects the question: why poor countries are poor, why they are lagging behind the rich countries on living standards, how to ensure their prosperity and potential convergence. In this sense, economic growth is an important aspect in the concept of «development», or rather, the growth of national income per capita. Development is a quantitative concept if it is perceived as economic growth. Economic development is more than economic growth, even if it is limited to the economic sphere. So, S. Kuznets noted that economic development means growth, which is accompanied by qualitative changes in the structure of production and employment, which are generally called structural changes (Kuznets, 1966). In this context, it is particularly important for developing countries to increase the share of the dynamic industrial sector in national production and employment and reduce the share of agriculture. This means that economic growth can occur without any economic development.

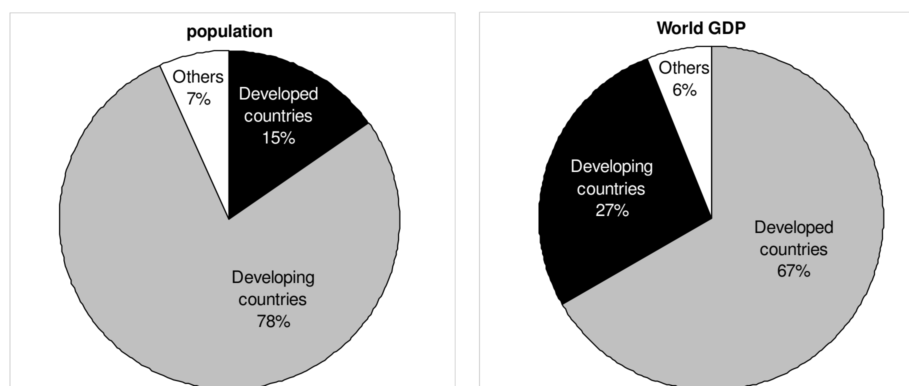
Technological change is another important qualitative change. Thus, M. Abramovitz came to the conclusion that development is a constant process of changing technological processes and products, which leads to fundamentally new types of production and new types of products (Abramovitz, 1989). However, the need for economic growth and socio-economic development is not indisputable. Critics of this concept (G. Brundtland, D. Meadows) pointed to the disadvantages associated with growth, development and modernization, in particular on irreversible violations of the way of life in traditional societies, the spread of a single materialistic mass culture, which can lead to loss of spirituality and increase in human exploitation as a result of the spread of market relations (Szirmai, 2015).

Determinants of growth in developing countries. Growth of the population does not guarantee economic development and convergence of developing countries. According to R. Easterlin high rate of population growth creates pressure on limited natural resources, reduces the formation of private and public capital, and uses additional resources to support rather than increase capital per worker (Easterlin, 1967). M. Todaro pointed to the positive effects of population growth, such as economies of scale and specialization, incentive for favorable motivation and greater ability of the younger population (Todaro, Smith, 2011). It is difficult to establish a link between population growth and per capita income, but there is a need in more thorough research of the economic situation of developing countries compared to developed countries.

The change in the population, especially in the second half of the twentieth century, shows some positive changes in the less developed regions of the world. So, the population in Asia, Africa and Latin America has increased from 1.7 billion in 1950 to 5.95 billion in 2015. This was mainly due to demographic factors, since the mortality rate decreased and the fertility rate remained unchanged. The share of developing countries in the world increased from 2/3 in 1950 to more than in 2015, due to the rapid growth of their population and relatively stable population growth in developed countries (see Fig. 1). The share of the population of developing countries in 1980 returned to the level of 1500–1820 years, and by 2015 it reached the level of 1000. Growth was concentrated mainly in Asia and Africa. China and India constituted the dominant part of the world's population – about 36% (compared with their share in 1000 – 50%, in 1820 – 57%) (Nayyar, 2013). Some other countries in Asia and Africa from the group of developing countries showed also high rates of population growth.

Fig. 1

Distribution of population and GDP by groups of countries, (2015)



Source: author's development based on: (World Population Data Sheet (Rep.) 2014).

The share of developing countries in world GDP at current prices and at market exchange rates increased from 17.5% in 1970 to 27.2% in 2015 (see Table 1). The difference in the rate of inflation and exchange rate changes affected significantly this trend. R. Barro was engaged in the search for factors in 1996 that influence the country's economic growth by researching a panel of 100 countries from 1960 to 1990. The results of the research showed that the growth rates

of real GDP per capita were related to the maintenance of the rule of law, lower state consumption, longer life expectancy, more number of men with secondary and higher education, lower fertility rate, higher level of investment and democracy, lower level of inflation and openness of the economy (Barro,1996). In addition, R. Barro proposed a remark to the theory of convergence, which predicts a decline in growth with the growth of real GDP. The share of GDP per capita in developed countries almost did not change and remained in the range of 5% in the period 1970-2000. It increased to 5.9% in 2005 and to 9.1% in 2015 (Nayyar, 2013; National Accounts Data, 2017). Deviation in per capita income led to a slowdown in the growth of the indicator in the last quarter of the twentieth century, as a result the convergence between groups of countries was not observed until the beginning of the XXI century, except for certain countries of Asia.

Table 1

GDP and GDP per capita ($ 2000)

Year	GDP of developing countries $ billion	World GDP $ billion	GDP of developing countries as % of world GDP	GDP per capita in developing countries $	GDP per capita in developed countries, $	GDP per capita of developing countries as % of GDP per capita in developed countries
1960	1134	7279	15,6	484	9144	5,3
1965	1424	9420	15,1	550	11190	4,9
1970	1792	12153	14,7	628	11660	5,4
1975	2355	14598	16,1	739	13028	5,7
1980	2991	17652	16,9	849	14887	5,7
1985	3435	20275	16,9	883	16468	5,4
1990	4048	24284	16,7	943	18937	5,0
1995	4756	27247	17,5	1019	20088	5,1
2000	5872	32213	18,2	1167	22708	5,1
2005	7646	36926	20,7	1423	24282	5,9
2010	10516	41365	25,4	1840	24635	7,5
2015	13556	49840	27,2	2276	25015	9,1

Source: author's development based on: (National Accounts Data, 2017).

According to P. Collier, developing countries have not received proper development through economic traps despite international assistance and support. To the traps he classified wars, conflicts, rent seeking for natural resources, dependence on one neighboring country and lack of rule of law (Collier, 2007). As a result, developing countries had a real GDP growth per capita higher than the average world, and they had a low level of socio-economic conditions. This was partly due to weak institutions, low human and physical capital, conflicts, poverty, low productivity, lack of international trade and a significant dependence on foreign aid. Since they had a low level of real GDP per capita, the convergence theory in this case should work, because despite all the problems, developing countries had higher rates of growth compared to developed countries.

Participation of developing countries should have a positive impact on their share in world industrial production and industrial exports in the context of industrialization in the global economy through channels such as international trade and investment. International trade enhances the economy of both importing countries and exporting countries, as there is a positive link between international trade and economic growth. R. Kavoussi has established that higher rates of economic growth are closely correlated with higher export growth rates. He proved that the positive correlation between exports and growth concerns both middle and low income countries (Kavoussi, 1985). In addition, J. Sachs and A. Warner found that open developing economies exceed each year the closed developing economies by the rate of real GDP growth (Achs, Warner,1995).

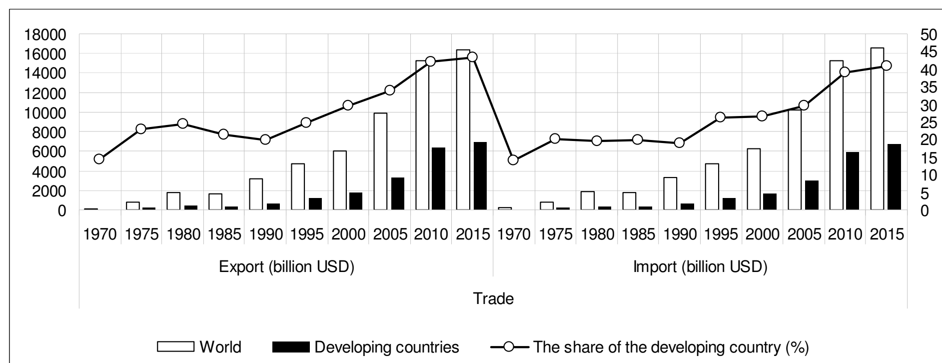
In general, the share of developing countries in world exports has increased from 14.4% in 1970 to 43% in 2015 (see Fig. 2). Their share in world imports also increased from 14.1% in 1970 to 41% in 2015 (Nayyar, 2013; World Trade Statistical Review (Rep.), 2016). The share of developing countries has more than doubled between 1990 and 2015 as a source of imports and export markets. In 1970, their share in exports and imports was almost proportional to their share in world GDP, and by 2015 it significantly exceeded this indicator (see Fig. 2). The share of developing countries in world exports of goods at current prices increased from 14.4% in 1870 to 19.6% in 1913, and as a result their share in world trade in 1970 was approximately the same as in 1870, and in 2015 it twice exceeded the value of 1913.

Foreign direct investment is a significant source of external financing for developing and developed countries. The impact of foreign direct investment on economic growth has both a positive and a negative vector. On the one hand, FDI stimulate the development of investment in technology, increases capital and increases employment, while on the other they push out domestic investment and reduce competition in local markets. R. Caves has found a positive correlation between the productivity of a transnational enterprise and labor productivity at domestic firms in the same industry. In his view, this was the result of competition and continued development, which provided foreign investment in the domestic market (Caves, 1971). A. Rappaport proved that foreign direct investment

can benefit not only the receiving industry but also other domestic industries through increased human capital and technological improvement (Rappaport, Mauboussin, Bernstein, 2003). E. Borensztein, J. De Gregorio and J. Lee summed up that FDI are interesting and profitable the host country by increasing employment, attracting new technologies, transferring knowledge and increasing the volume of domestic investment (Borensztein, Gregorio, Lee,1998).

Fig. 2

The share of developing countries in the world trade

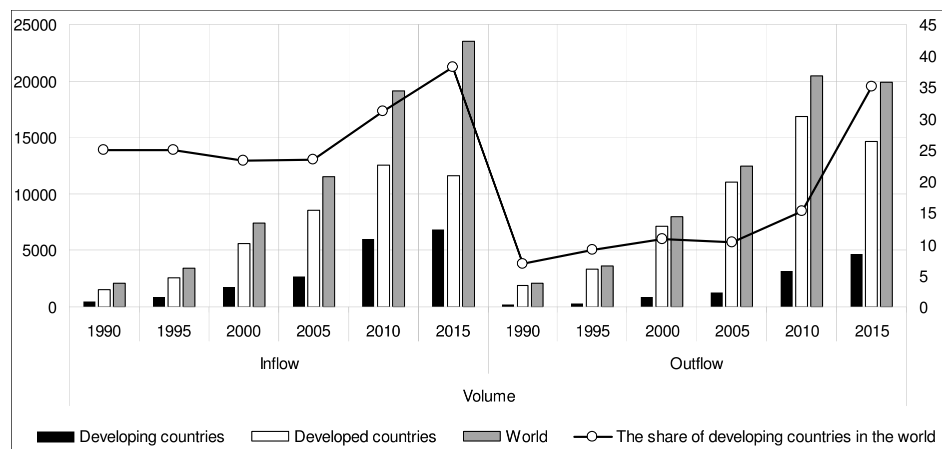


Source: author's development based on: (World Trade Statistical Review (Rep.), 2016).

Consequently, in the period from 1990 to 2015, the share of developing countries in FDI increased from 1/4 to almost 1/3, while the share of foreign direct investment inflows was about 1/3 (see Fig. 3). Their share in exports of foreign direct investment has increased from less than one fourteenth to more than 1/8; FDI outflow was in the range from 1/3 to 1/6. Foreign direct and portfolio investment in developing countries totaled about 1/3 of their GDP in 1900; in 2000 – less than 30%. In 1914, foreign direct and portfolio investments in developing countries totaled $ 179 billion at prices in 1980, and in 1980 – $ 96 billion (Nayyar, 2013; National Accounts Data, 2017; World Investment Report 2016 (Rep.), 2017). In real terms, they reached the level of 1914 only in the mid-1990s. For developing countries, the value of foreign investment was at the end of the twentieth century approximately the same as in the late nineteenth century. However, there is one important difference, in the 2000s, developing countries have become a more significant source of FDI in the world economy that was entirely new phenomenon.

Fig. 3

FDI in the global economy



Source: author's development based on: World Investment Report 2016 (Rep.), 2017).

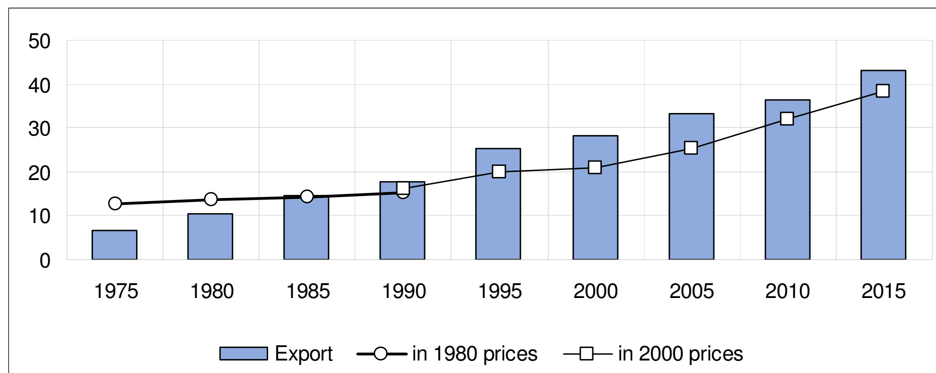
The developing countries are rich in natural resources in most and therefore they can take benefit from production and exports. However, African countries have not experienced significant GDP growth even with a large amount of natural resources such as oil and diamonds. J. Sachs and A. Warner found that poor countries often get trapped of their own natural resources (Achs, Warner, 1995). On the one hand, the export of natural resources leads to an increase in the exchange rate makes exports of these countries more expensive and less competitive. This phenomenon is known as «Dutch disease». Also, as P. Collier observed, removal of human and physical capital from other industries in the production of natural resources reduces other sectors (Collier, 2007). In addition, the sale of natural resources, corruption and the unfair distribution of rent have led to the fact that some rich natural resources countries in sub-Saharan Africa have very low per capita GDP.

There is a problem associated with the comparison of time series data in the context of the analysis of the state of industrial production in developing countries since 1950. Figure 4 illustrates the share of developing countries in creating added value in two time series, the coincidences between which simplify the interpretation of the indicator trend. In 1830, the share of developing countries was 60.5% in world industrial production, but with the beginning of industrialization in Western Europe and the United States, their share fell sharply from 36.6% in 1860 to 11% in 1900 and 7,5% in 1913. In general, the share of devel-

oping countries in world industrial production was at the level of 7-8% during the period 1913-1970 years. However, from 1975 to 1990, the percentage of developing countries rose from 12.6% to 15.3% in the world added value, at prices in 1980. From 1990 to 2015, this indicator increased more than twice at 2000 prices, from 16% to more than 38% with some acceleration in the mid-1990s (Nayyar, 2013; National Accounts Data, 2017). Overcoming the industrial gap has affected the positioning of developing countries. In particular, their share in the export of industrial goods increased more than 2.5 times from 1975 to 1990, from 6.8% in 1975 to 17.8% in 1990, and from 1990 to 2015 their share increased more than twice from 17.8% to 43%. In general, the share of developing countries in the world added value exceeded their share of world exports of industrial goods until 1980 (Nayyar, 2013). These two indicators were almost the same during the 1980s, but since 1990 the second indicator has gradually exceeded the value of the first.

Fig. 4

The share of developing countries in the world added value, (%)



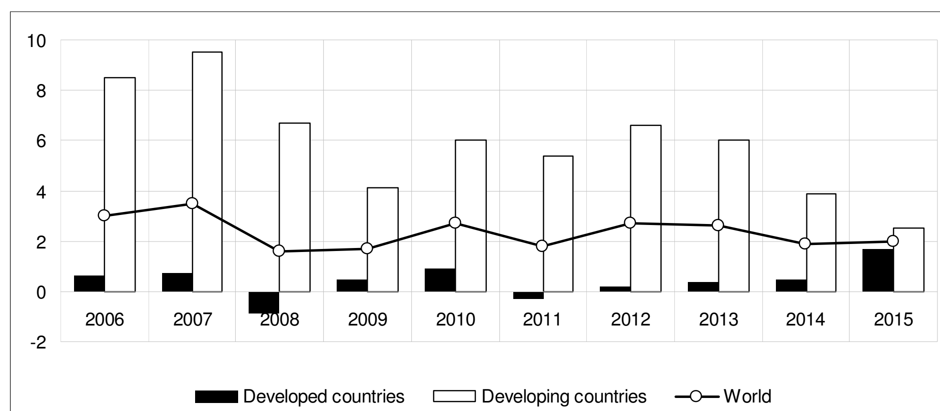
Source: author's development based on: Nayyar, 2013; National Accounts Data, 2017.

An important task for developing countries is to reform the wage organization in order to ensure its gradual improvement and to create an effective motivational mechanism based on a combination of economic incentives and social guarantees. G. Becker investigated that wage growth is tied to the general and specific accumulation of human capital (Becker, 1964). Low wages do not contribute to the interest of employees in achieving high final results of work. At the

same time, entrepreneurs are not interested in raising labor productivity by investing in the upgrading of productive assets and the development of personnel in developing countries because they use cheap labor. As a result, cheap labor is determined not only by the low level of labor productivity, but also by the low quality of products, and, consequently, its uncompetitiveness. That is, the low level of wages in developing countries can be the cause of hidden unemployment and the fall in the population's solvent demand. Consequently, low wages are the consequence and reason for the long-term stay of the country's economy in crisis conditions. In general, the growth rate of real wages has slowed down since 2012 in the world, declining from 2.5% to 1.7% in 2015, that is, to its 4-year minimum (Nayyar, 2013; Global Wage Report 2016-2017 (Rep.), 2017). China is ahead of other countries in terms of growth in real wages, excluding China rate decreased from 1.6% in 2012 to 0.9% in 2015 (see. Fig. 5). This slowdown occurred in combination with weak demand in the world, a decline in oil and commodity prices, and a decline in exchange rate of national currency in some major economies in transition. Interestingly, there is a decline in the growth of real wages of developing countries with their growth in developed countries. As a result, developing countries should implement an effective mechanism for wage regulation, since economic processes that are associated with the permanent depreciation of the national currency do not contribute to the development of their economies.

Fig. 5

Average annual growth in real wages

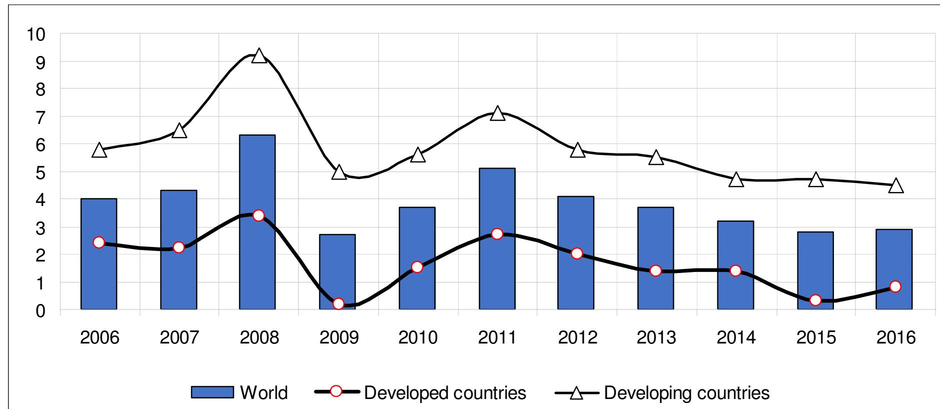


Source: author's development based on: Nayyar, 2013; Global Wage Report 2016–2017 (Rep.), 2017.

Permanently rising inflation is another obstacle to the economic development of developing countries. J. De Gregorio proved that inflation leads to uncertainty about the future profitability of investment projects, which leads to more conservative investment strategies and to lower investment and economic growth (Gregorio, 1991). In addition, according to A. Ghosh, inflation may reduce international competitiveness of the country, making exports more expensive, affecting the balance of payments, borrowing and lending (Ghosh, 2000). Inflation of developing countries has been declining since 2011 from 7.1% to 4.5% in 2015 (see Fig. 6). This was the minimum value in the post-crisis period and it correlated with the level of developed countries. Low inflation can be explained by a combination of low oil and other commodity prices, as well as weak aggregate demand. This situation has led to the fact that the inflation rate in many developed countries was significantly lower than the corresponding levels determined by the central banks. The deflationary pressures in the global economy do not weaken despite the low level of interest rates, which can be preserved longer than expected. At first glance, deflation is a beneficial factor for real wages, but in reality its impact on developing countries is not unequivocal.

Fig. 6

The inflation rate in the world



Source: author's development based on: Nayyar, 2013; Global Wage Report 2016–2017 (Rep.), 2017.

In general, the slowdown in the growth rate of the world economy has increased unemployment in the world, which in 2015 was 5.8%, or almost 199.4 million unemployed people. This is 30 million more than in 2007 – on the eve of the global financial and economic crisis. In developed countries, the unemployment rate has dropped from 8.1% in 2010 to 6.7% in 2015, in the developing world it is expected Its decline, as well as poverty reduction and a rise in living standards. So, since 1990, the population living on less than $ 3.10 a day has been halved and is about 36%. However, progress is not being made everywhere: if there has been significant improvement in China and in most Latin American countries, the vast majority of countries in Africa and Asia still have a high level of poverty.

Conclusions

Economic determinants of potential growth are promising sources of development in developing countries. In principle, developing countries can achieve and maintain high growth over time for the following reasons. First, their populations are large and their incomes are low, which means greater opportunities for growth. Secondly, their demographic characteristics will contribute to growth if a high proportion of young people will increase the labor, and education will be widely available and will have appropriate resources. Thirdly, wages are significantly lower in most developing countries than in other countries, which is an important source of competitiveness. In manufacturing, a large accumulation of surplus, in the face of relatively low wages, may for some time be a source of competitiveness. Fourthly, the potential for increasing productivity is more weighty at earlier stages of development with extensive margins – from almost zero productivity in agriculture to positive performance indicators in production or services, with the subsequent displacement of such labor from low-productive labor to employment with higher productivity on an intensive margin.

In practice, developing countries may not use their growth potential. There are certain difficulties in different countries, both in leaders and outsiders. Common difficulties for most developing countries include poor infrastructure, inefficient institutions, inadequate education, unstable politics and poor governance. There are potential difficulties that were invisible but that may arise as a result of economic growth. Such potential difficulties include economic isolation, social conflict, environmental stress and climate change. Also, exogenous difficulties hinder the development of developing countries: the deterioration of trade conditions, limited access to export markets, lack of external financing or the crisis in the world economy.

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