

Features of education financing in developing countries

Características de la financiación de la educación en los países en desarrollo

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ABSTRACT:

We get the knowledge and skills necessary to solve daily problems from high-quality education. Education is an important factor in reducing poverty, stimulating economic growth, achieving gender equality and social development of the country. Over the past decades, developing countries have started to actively invest in education. Despite the increase in education expenditure and school enrollment rates, the level of education in developing countries is still low. A feature of education financing in developing countries is the pattern of education expenditure. In developing countries expenditure per student has been reoriented towards higher education. Investment in education is one of the most important types of public investment in the social sphere. The purpose of our research is to conduct a comparative analysis of the status and trends in the education cost structure changes in developing countries. In our research we have proposed a scale that makes it possible to select 4 quadrants with different ratios of GDP growth rates and the growth rate of education contributions. These indicators help to assess current social and economic situation in the educational sector of the country. The most favorable are quadrants 3 and 4. Quadrant 2 requires further study, while Quadrant 1 indicates a low level of social and economic development of the country. Belarus and Azerbaijan are in the first

RESUMEN:

El conocimiento y las habilidades son necesarias para resolver los problemas diarios de la educación de alta calidad. La educación es un factor importante para reducir la pobreza, estimular el crecimiento económico, lograr la igualdad de género y el desarrollo social del país. En las últimas décadas, los países en desarrollo han comenzado a invertir activamente en educación. A pesar del aumento en el gasto en educación y las tasas de matrícula escolar, el nivel de educación en los países en desarrollo sigue siendo bajo. Una característica de la financiación de la educación en los países en desarrollo es el patrón del gasto en educación. En los países en desarrollo, el gasto por estudiante se ha reorientado hacia la educación superior. La inversión en educación es uno de los tipos más importantes de inversión pública en la esfera social. El propósito de nuestra investigación es realizar un análisis comparativo del estado y las tendencias en los cambios en la estructura del costo de la educación en los países en desarrollo. En nuestra investigación, hemos propuesto una escala que permite seleccionar 4 cuadrantes con diferentes índices de tasas de crecimiento del PIB y la tasa de crecimiento de las contribuciones de la educación. Estos indicadores ayudan a evaluar la situación social y económica actual en el sector educativo del país. Los más favorables son los cuadrantes 3 y 4. El

quadrant. These countries are characterized by a negative situation in the field of education. The average growth rates for the period under review are close to zero, while GDP growth is also low. Kenya, Benin and Uganda are in the third quadrant, which is characterized by higher GDP growth rates. This may indicate the positive dynamics of economic development, but their contributions to education are not sufficient either.

Keywords: Education, developing countries, financing, primary education, higher education, expenditure growth rates

cuadrante 2 requiere más estudios, mientras que el cuadrante 1 indica un bajo nivel de desarrollo social y económico del país. Bielorrusia y Azerbaiyán están en el primer cuadrante. Estos países se caracterizan por una situación negativa en el campo de la educación. Las tasas de crecimiento promedio para el período analizado son cercanas a cero, mientras que el crecimiento del PIB también es bajo. Kenia, Benin y Uganda se encuentran en el tercer cuadrante, que se caracteriza por mayores tasas de crecimiento del PIB. Esto puede indicar la dinámica positiva del desarrollo económico, pero sus contribuciones a la educación tampoco son suficientes.

Palabras clave: educación, países en desarrollo, financiamiento, educación primaria, educación superior, tasas de crecimiento del gasto

1. Introduction

Education is a key right of every person. It plays a big part in achieving sustainable development. High-quality basic education provides children and young people with the knowledge and skills they need to solve daily problems. Education, including primary education, is a key factor in reducing poverty, stimulating economic growth, achieving gender equality and social development in the country.

Over the past decades, developing countries have started to actively invest in education. According to the official UNESCO report (Mbiti, 2016), the share of contributions from GDP to education is growing in developing countries. As it is noted in (Mbiti, 2016), the report showed that real education expenditures in the sample of 26 African countries grew by an average of 6 percent annually. Also, the education expenditure growth can be observed in South Asia, Latin America and the Caribbean. In these countries the total budget for education is about 5 percent of GDP, compared to North American and European countries, which spend about 5.3 percent of GDP on education. This increase in education expenditure in developing countries was mainly aimed at improving school education. Despite the increase in education expenditure and school enrollment rates, according to some studies, the level of education in the developing world remains low.

A feature of education financing in developing countries is the pattern of education expenditure. This is explained by the focus shift of education systems from educational outcomes to the needs of privileged groups. The curriculum is often focused on the needs of children from the elite, and not average children. In comparison with developed countries, expenditures per student in developing countries are mainly reoriented towards higher education rather than to primary education. In developing countries not all members of society have the access to higher education.

Given the current financial climate in many developing countries, it is important to use new methods of financing education in order to ensure efficiency and greater social justice. In many cases the current financing mechanisms lead to insufficient investment in education and the inappropriate distribution of government expenditure in this sector. In our research, we analyze the contributions to education in the context of GDP growth. Investment in education is one of the most important types of public investment in the social sphere. High-quality knowledge does not only promote personal growth, but also increases the competitiveness of the country. The purpose of our research is to develop an approach to assess the emergent socio-economic status of the education sphere and to compare rates of education spending growth with GDP growth rates in developing countries.

2. Literature review

The analysis of the publications on education financing shows that the researchers are mainly focused on higher education. There are several reasons for which higher education is important for the country. It contributes to country's economic welfare and global competitiveness. High-quality and effective education is important for achieving a high level of human capital. Although higher education is a driving force of economic growth, there is

no consensus on how it should be financed (Long, 2018). Every country has its own financing model which it implements with a different degree of success. While some countries mainly finance private sector, others use higher education systems that are funded by the public sector. The public sector contribution to higher education financing varies greatly depending on the country.

Higher education is mostly free in most European countries. In some advanced economies, such as the United States, the United Kingdom, Australia and New Zealand, students have to pay substantial fees to go to universities (Long, 2018). Many young people have to get a loan to finance their education while others have to refuse the idea of entering a higher educational institution. The government of some countries uses conditional loans (ICL), according to the amount to be paid for a certain period depends on the current income. The problem of many developing countries is that governments do not have either the financial resources or the political will to meet the education needs of the population.

As it is noted in (Erina & Erins, 2015), higher educational institutions of Central and Eastern Europe should improve their financial management systems in order to reach the level of the leading European and world universities (Erina & Erins, 2015). Despite the differences in the sources of direct and indirect financing that are used in Central and Eastern Europe, their common tasks are the following: 1) increase government financing of higher education; 2) provide more autonomy in the management of financial resources; 3) ensure a direct correlation between the results and the allocated funding; 4) promote different sources of funding, as well as establish cooperation between research institutes, enterprises and municipal administrations.

Recently, there have been important changes in higher education systems of many countries. As a result, the balance between private and public sector contributions to higher education financing has changed. The study (Goksu & Goksu, 2015) deals with various applications of higher education financing systems and analyzes the contributions of various entities involved in higher education financing.

In Ukraine, it is proposed to shift to a diversification financing model in order to improve the quality of education without reducing its accessibility (Erfort et al., 2016). In Russia, over the past twenty years, the higher education system has been transformed in order to achieve a high level of competitiveness [8]. As for funding, there are both public and private higher education institutions. They use different financial resources to invest in the improvement of their own competitiveness. Most Russian public universities use intergovernmental agreements to develop cooperation with foreign universities within the budget allocated by the state. Private universities have a different way of financing their global integration. It is characterized by an influx of money received from local householders for additional international training programs and long-term financing of founders and charity organizations.

According to (Kim & Park, 2018), the key tasks for solving the problem of financial structure in Korean higher education are the following: high dependence on private institutions, high dependence on education and minimal government investment rules. Higher education financing in Korea is hampered by the following: instability, small total allocation, investment overlap by the central government, inconsistency in promoting programs, links to university structural reform, imbalanced financial support goals, non-transparent and unpredictable financial support.

Southeast Asia and Oceania have enormous geographic barriers to the provision of higher education and include some of the most remote and rural areas in the world. As it is noted in (Jacob et al., 2018), these factors create unique access, equity and financial problems for the region.

The studies comparing income by country and alternative investment in order to determine financing priorities show the following results. The priority direction for low-income countries is to expand education at the primary level. For middle-income countries, there are grounds for further expansion at the primary level. In upper-middle-income countries, the expansion of secondary education is justified by their income (Psacharopoulos et al., 2017).

The assessments in many developing countries have shown that children cannot develop basic counting and literary skills (Mbiti, 2016). This is the result of a number of interrelated factors, many of which reflect a low responsibility at different education system levels. As it is noted in (Languille, 2019), young people can't finish school and they are not ready to enter the labour market due to insufficient education financing (Ssewamala, 2014).

Although many governments of poor countries are already demonstrating a strong commitment to education financing, there are some problems related to the lack of resources to adequately finance public educational systems. In (Ron Balsera et al., 2018), potential solutions based on increased domestic recourse mobilization through progressive taxation are considered in order to eliminate the growing financing gap and achieve sustainable development.

Some researchers study the problem of education financing in the context of one particular country. Thus, in (Languille, 2019) the budget aspect of fast secondary education expansion since 2014 in Tanzania is being regarded. Based on the results of the study, it has been concluded that any ambitious education financing program should be defined by the tax system at the global and national level.

Thus, the analysis of publications shows that the researchers are interested in the problem of education financing. Some authors criticize the education cost structure in developing countries while others study the dynamics of changes in education financing. At the same time, the relationship between education sector financing and the economy growth rate of the country are still insufficiently studied.

3. Methods and materials

If primary education were available to all social groups in all countries and were financed by the state, and all children could go to school despite their parents' ability or desire to pay for their education, the level of global economic development would be much higher and there would not be any boundaries between developed and developing countries. The reason for this is simple: if a child does not learn the basic skills necessary to become a productive and responsible member of society, the whole society is affected. It is better to educate children as the education expenditure is lower than the expenditure associated with the lack of education. The cost of educating children is much less than the cost of lack of education. Adults who do not have basic skills find it harder to find a well-paid job and get out of poverty. As a result, this fact affects the country's economy and its competitiveness in the global market.

Developing countries are the countries that have lower per capita GDP compared to other countries. Developing countries are characterized by poorly developed industry and high economic dependence on developed countries. But there is no strict definition. In practice all non-OECD countries are usually referred to as developing countries (LDC, 2011). The International Monetary Fund classifies countries into advanced and developing countries. The criterion for such classification is income per capita, export diversification, degree of integration into the global financial system. For example, according to the IMF the following countries are developing: Albania, Bulgaria, Croatia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan, Romania, Serbia, Turkey, Ukraine, Bangladesh, Brunei, Cambodia, Fiji, India, Indonesia, Laos, Malaysia, Mongolia, Nepal, Palau, the Philippines, Samoa, Sri Lanka, Thailand, Tonga, Vietnam, Afghanistan, Algeria, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Argentina, the Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Angola, Benin, Botswana, Kenya, Uganda, Zimbabwe and others. As a rule, developing countries have low standards of democratic governments, free market economy, industrialization, social programs and guarantees of human rights for their citizens.

Per capita GDP is the main criterion for determining the level of economic development of the country. For many economic indicators GDP is used as a basis for comparison. In our research we deal with public statistical data on different countries. The following indicators were used to perform the analysis.

Government expenditure on education as a percentage of GDP is the total government expenditure (current and capital) on education, expressed as a percentage of GDP in a given year.

Expenditure on the education system in primary school as a percentage of the total expenditures on the education system is the proportion of government expenditure on primary education.

Expenditure on higher education as a percentage of total expenditure on the education system is the share of government expenditure on higher education.

Government expenditure per student as a percentage of GDP per capita. Primary school is the total government expenditure per student of primary education as a percentage of GDP per capita.

Government expenditures (current and capital) include government expenditures on educational institutions (public and private) and education administration, as well as subsidies for individuals (students / households and other ordinary individuals). In some cases, the data on government expenditure on education refers only to the Ministry of Education, excluding other ministries that spend part of their budget on educational activities at a given education level.

To achieve the goals set, it is necessary to calculate the growth rates of these indicators, compare the values obtained in the group of developing countries and assess the relationship between education expenditure and GDP growth. Countries in the sample are representatives of different regions, since each specific region has a different absolute value of GDP per capita that underlines the conventionality of division into developed and developing countries. From a variety of developing countries, the sample includes five countries from different regions and their GDP growth rates are below 0.06. These countries are Azerbaijan, Belarus, Uganda, Benin and Kenya.

4. Results

Based on the available public data, the growth rates of government expenditure by year have been calculated for the selected countries (Fig. 1). The analysis shows that the countries tend to maintain the level of public expenditure and the deviations do not exceed 0.8%.

Let us have a look at the education cost structure. Considering the above-mentioned features of education financing, the analysis of the dynamics of the education system expenditures in primary school as a percentage of the total expenditure on the education system can be interesting. Figure 1 shows the growth rate of expenditures on primary education system as a percentage of the total education system expenditure.

Fig. 1

Growth rates of government expenditure
on education in a percentage of GDP

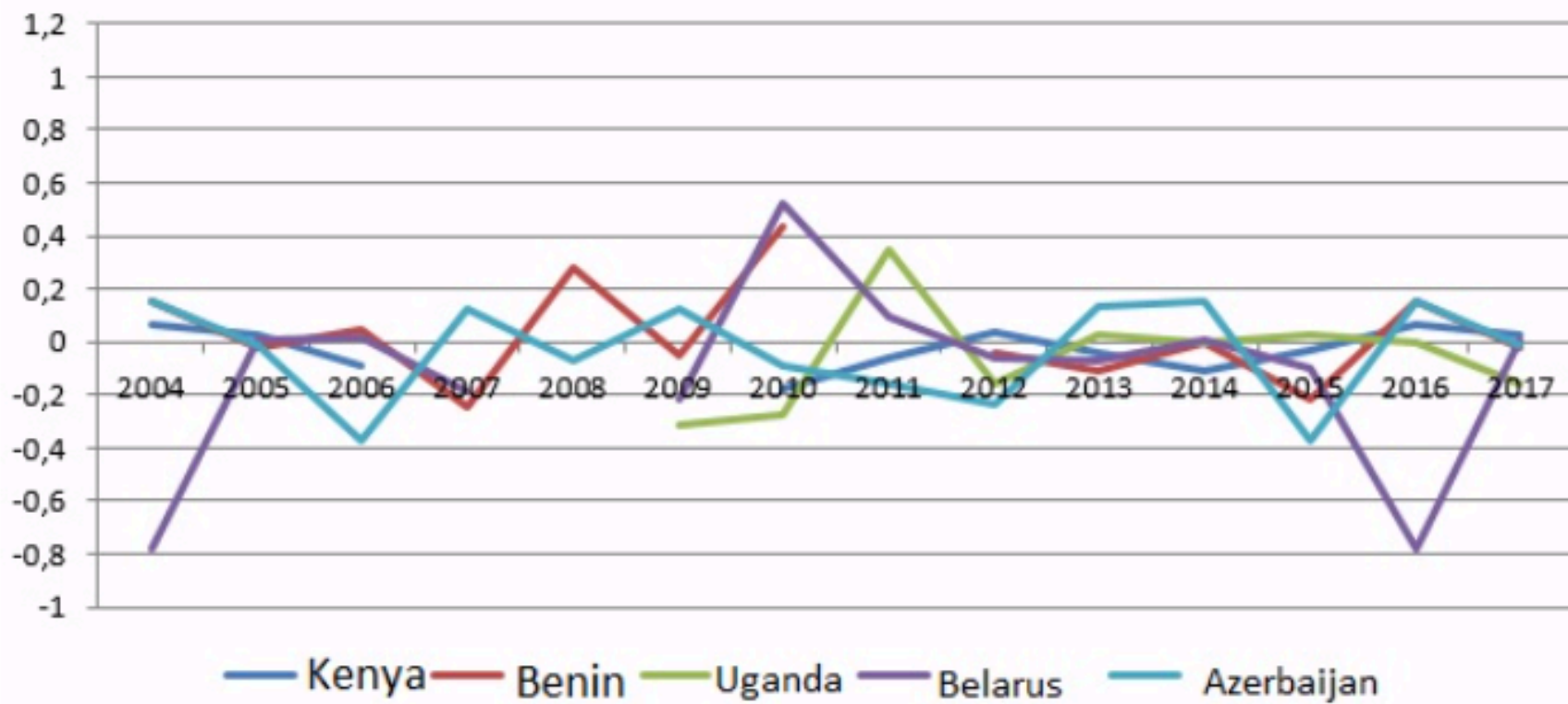
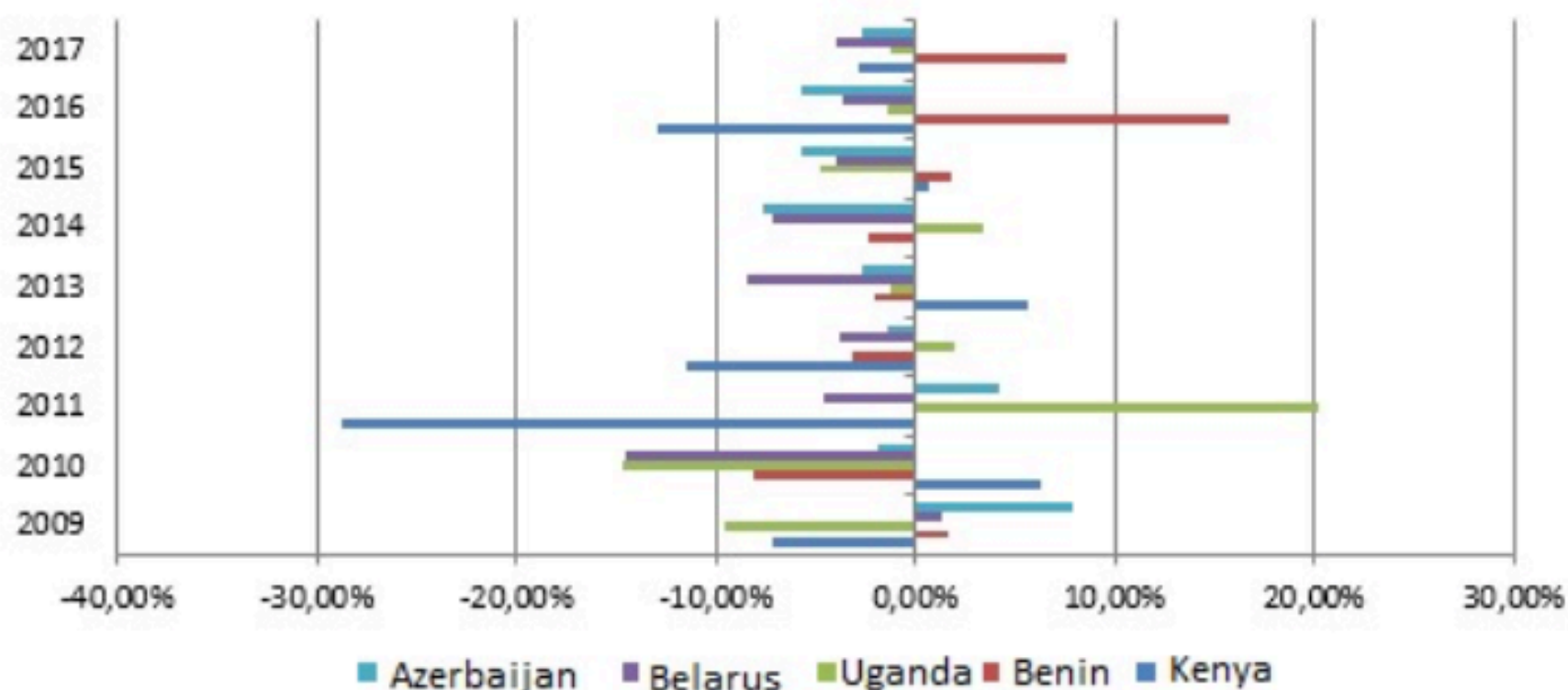


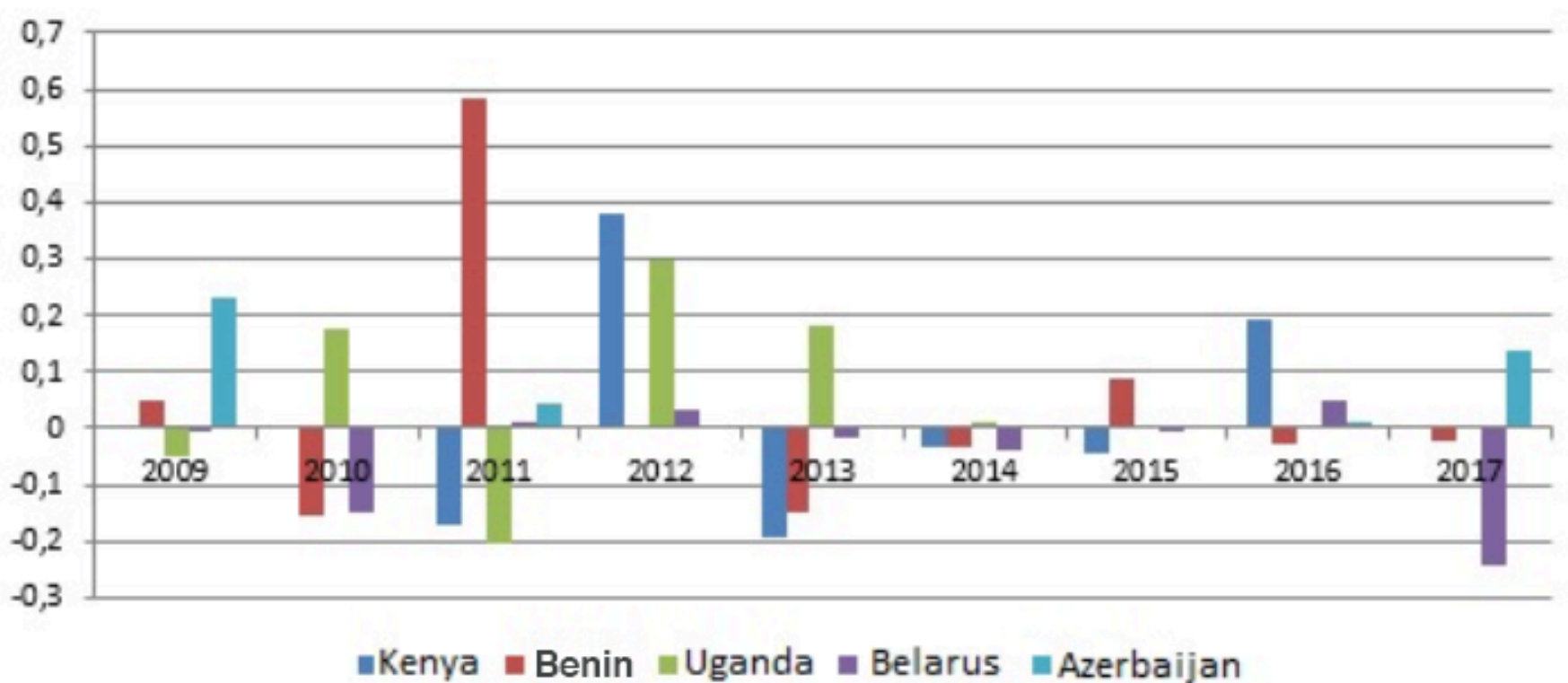
Fig. 2
Growth rates of government expenditure on primary education as a percentage of the total education expenditure



The diagram shows that negative growth rates prevail in the selected countries. This indicates cuts in primary education expenditures as a percentage of the total expenditure on the education system. The most favorable situation is observed in Benin. There has been positive increase in recent years.

By analogy, let us consider the growth rates of higher education expenditures as a percentage of the total expenditure on the education system (Fig. 3). It should be noted that in recent years all the selected countries tend to reduce the expenditure on higher education in the structure of their total expenditure. This negatively affects the overall economic situation and the country's position in the global market.

Fig. 3
Growth rates of higher education expenditure as a percentage of the total education expenditure



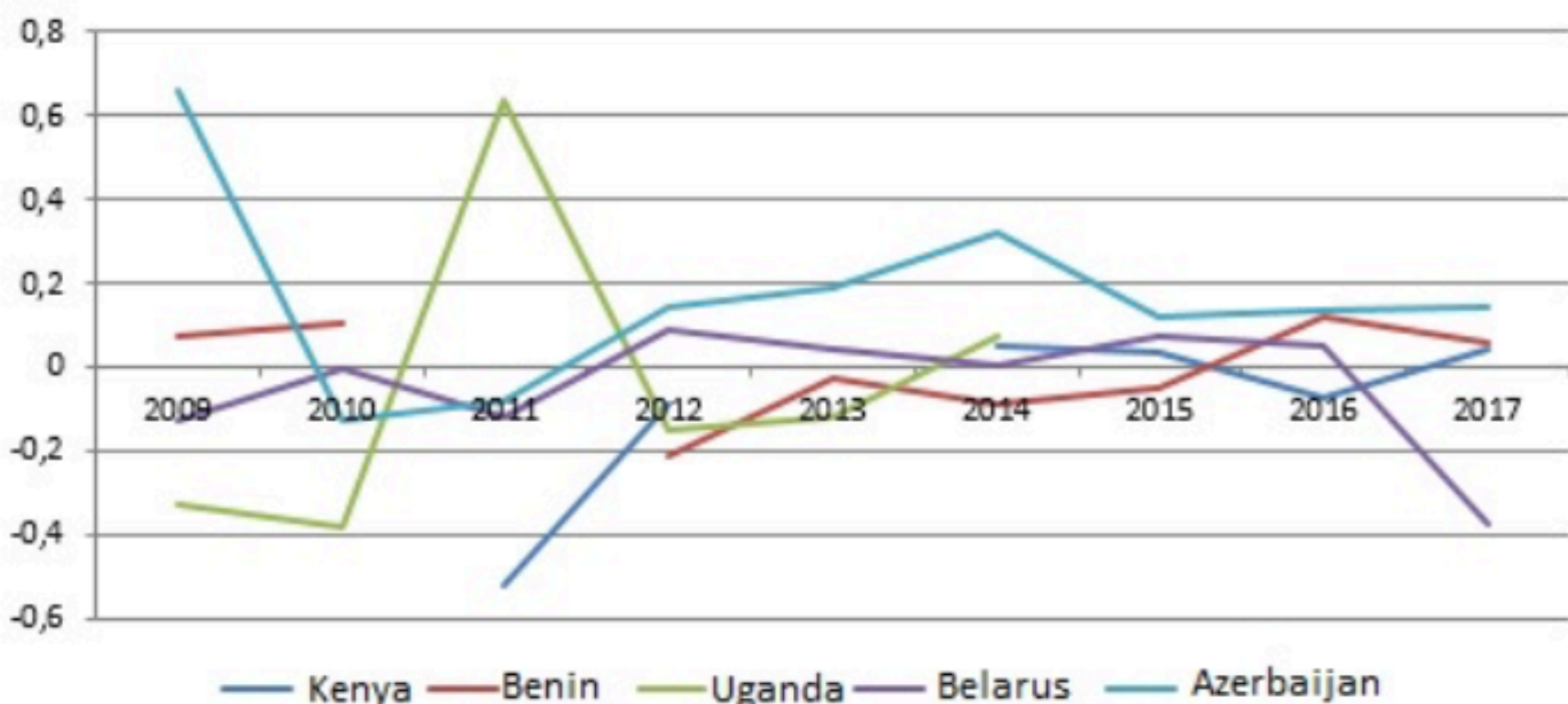
Over the past two decades, there has been a small increase in the share of income that the countries allocate to education. Unfortunately, the data are not always accurate due to the lack of observations for many countries, yet there is an upward trend for most countries. As the analysis of the available data shows, the average education expenditures as a percentage of GDP range from 3 to 6%. In high-income countries, households bear a substantial share of higher education expenditure while in low-income countries this is not the case. Education financing in developing countries largely depends on the development support. This significant tendency change is important for many low-income countries, where the development support makes a significant contribution to education financing.

This situation can be explained by the lack of supply: the government may not have enough resources to provide educational services or it may not have the administrative capacity to direct resources to schools which need them. Public schools may exist in cities, but not in rural areas or the quality of education may vary considerably. In addition, government financing of schools can become a secondary issue if the children of the political or economic elite of the country attend private schools. The budget can be reallocated from basic education to higher education, which serves the ruling elite. It can also be transferred to other programs. Developing countries can solve this problem by attracting external donors.

Developing countries are generally defined as lower per capita income countries. In most countries, an increase in per capita income is positively correlated with an increase in expenditure per student. Government expenditure per student as a percentage of GDP per capita generally expresses the state's share of expenditure per student. This is the total government expenditure per student in the education system (primary, secondary, higher) as a percentage of GDP per capita. Government expenditure (current and capital) includes government expenditure on educational institutions (public and private), administration, as well as subsidies for individuals (students / households and other ordinary individuals).

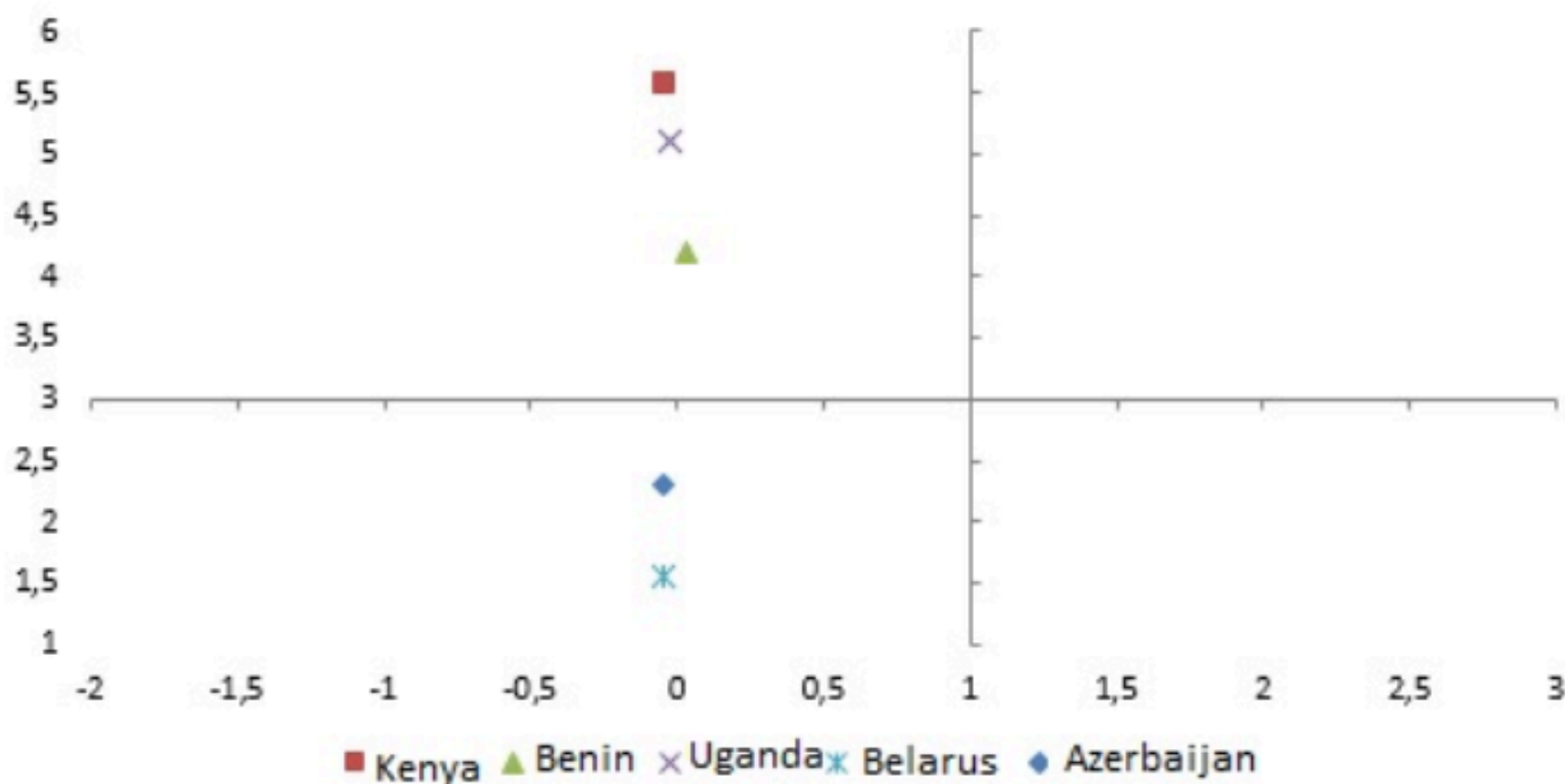
Let us calculate the growth rate of government expenditure per student as a percentage of GDP per capita for the selected countries (Fig. 4).

Fig. 4
Growth rates of government expenditure
per student as a percentage of GDP per capita



It should be noted that the growth rates are not high and often negative. The most favorable situation is observed in Azerbaijan. Thus, the assessment of the growth rates of education expenditures showed that for the selected countries there wasn't any increase in this sphere. Therefore, let us consider how the growth rates of education expenditure correlate with the GDP growth rates in the countries under consideration. We have defined a scale that allows us to distinguish 4 quadrants: low growth rates of GDP and low contributions to education characterize the low development level of the economic, political, and social system in the country; low GDP growth rates and high education expenditure indicate the socialization of the cost structure, which in the long term may lead to positive changes in economic development; high GDP growth rates and low contributions to education show an increase in the economic development and the need for investment in education; high GDP growth rates and high contributions to education reflect a favorable situation that needs to be maintained and developed. Thus, the calculation of these indicators makes it possible to assess the current social and economic situation in education. Fig. 5 shows the results of the calculation for the selected countries.

Fig. 5
The relation between the average growth rate of education expenditure and GDP



As a result, we can conclude that the countries under consideration can be divided into two categories. The first category is represented by Belarus and Azerbaijan. These countries are characterized by a negative situation in education. The average growth rate of education expenditure is close to zero while GDP growth is also low. The second group of countries, which includes Kenya, Benin and Uganda, is characterized by higher GDP growth rates. This may reflect positive economic development, but their allocations for education are also not sufficient.

Thus, the obtained results confirmed that the countries that are not sufficiently developed from the economic point of view pay little attention to education. This fact indirectly affects the pace of their development.

5. Discussion

The increasing importance of education contributes both to the improvement of economic and socio-cultural structure, as well as the quality of government services. The higher the quality of education means higher economic development. Thus, higher education is an important stage. It plays a significant role in the development of a new generation.

According to the authors (Goksu & Goksu, 2015), one of the positive effects of higher education is its significant contribution to the improvement of the country's human capital. The number of college students increases along with the quality of education. As a result, it can be assumed that higher education improves people's welfare.

One of the main problems of higher education is financing, which varies over time. It is known that mainly a state or private sector finances higher education. Over the past two decades, the public sector involvement has decreased in the countries where liberalization is dominating.

The studies have shown (Simanaviciene et al., 2015) that the results of investments in higher education can be positive and negative. The positive effect of investments in higher education occurs mainly at the individual level, that is an increase in wages and personal qualities is expected. The negative effect is mainly observed at the state level. There is a flow of talent and the investments do not pay off. The estimated short-term return on public investment in higher education shows that it is more profitable for the state to subsidize a university education than college education. Every year, there are fewer budgetary allocations for higher education. This means that the student must look for the ways to pay for the education.

A review of Japanese mechanisms of higher education financing (Huang, 2018) confirmed that developed countries tend to reduce government investment in all higher education institutions, especially in public and local government sectors. They are focused on increasing the share of competitive financing at the national level. Thus, individual institutions are forced to diversify their income generating schemes, as well as stimulate cooperation and partnership of government, industry and universities. However, despite the fact that in Japan the same changes as in many other OECD countries can be observed, Japanese central government still has a powerful influence and strict regulatory control over all higher education institutions. Japan can be a good example for other Asian countries and societies that are making efforts to provide mass or universal access to higher education, as well as to improve its quality.

When studying Latvian model of higher education financing, the existing model, which includes a number of baseline costs, was analyzed (Erins & Erina, 2015). It was concluded that the model of financing higher education in Latvia should be based mainly on public financing. It is also necessary to develop a system for proportionate allocation of funds within higher education institutions.

It seems that privatization as a broad strategy for the improvement of access to education is disqualified by the discrepancy in educational opportunities arising from market approaches. The financial gap makes public education insufficient in terms of quality, as well as in terms of fulfilling the obligation of free and compulsory primary education. Therefore, as it is shown in (RonBalsera et al., 2018), it is necessary to improve public education financing by

increasing the size, share and sensitivity of the education budget in order provide inclusive and quality education for all.

Thus, it is clear that there are significant investments into higher education rather than primary education. The drawback of our research is that there is no information on literacy level in developing countries. This can be explained by the lack of free access to statistical data. In addition, financing and the level of education development in fast growing economies have not been studied. The level of education financing in relation to the development of medicine and progressive technologies in developing countries has not been considered. However, the proposed approach makes it possible to evaluate the status of education financing.

6. Conclusion

The article proposes an approach for classifying developing countries by the GDP growth rate and education expenditures. The suggested scale distinguishes 4 quadrants with different characteristics: 1) low GDP growth rates and low growth rates of education expenditures; 2) low rates of GDP growth and high rates of growth in education expenditures; 3) high GDP growth rates and low rates of growth in education expenditures; 4) high GDP growth rates and high rates of growth in education expenditures. This allows correlating the level of economic development and the government policy in the field of education financing, with the conclusion that education is one of the key factors in sustainable development. The distinguished quadrants allow drawing general conclusions and recommendations regarding the current situation in the field with regard to changes in the GDP growth rate and to education spending.

One of the reasons justifying government intervention in the education market is that education generates positive externalities. This means that investment in education brings both private and social profit. Private profit includes higher wages and better employment prospects. Social profit includes pro-social behavior (e.g. volunteering, participation in political life) and interpersonal trust. It can be concluded that more qualified adults are more likely to bring about desired social outcomes, including good or excellent health, volunteering, interpersonal trust and political effectiveness.

In our research we have proposed a scale of 4 quadrants with different characteristics: 1) low growth rates of GDP and low contributions to education; 2) low GDP growth rates and high education expenditure; 3) high GDP growth rates and low contributions to education; 4) high GDP growth rates and high contributions to education. The most favorable are quadrants 3 and 4. Quadrant 2 requires further study, while Quadrant 1 indicates a low level of social and economic development of the country.

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