Multiplier of consumer expenditures in the model of economic management of water resources of the Kyrgyz Republic

Khicheza Fynchina[1*], *Firuza* Fynchina[2], *Takhmina* Tadzhibaeva[3], *Baktyyar* Tokoev[3], and *Anarbubu* Sherbekova[4]

[1]Kyrgyz-Russian Slavic University, 720065 Bishkek, Kyrgyz Republic
[2]University of Skovde, 541 28 Skovde, Sweden
[3]Bishkek State University, 720044 Bishkek, Kyrgyz Republic
[4]Kyrgyz State Technical University, 720044 Bishkek, Kyrgyz Republic

Abstract. The expenses of the population are one of the main factors determining aggregate demand, which creates the basis for the reproductive process and economic development of the state. The volume of aggregate demand in the Kyrgyz Republic is largely determined by the development of trade and economic cooperation with China. This justifies the relevance of assessing their impact on economic growth against the background of new challenges of various kinds in the conditions of unstable social and economic development of Kyrgyzstan. The relations of trade indicators with China and GDP, the value of final consumption of Kyrgyz households as part of GDP in comparison with other countries are shown. The calculated indicators of marginal propensities to consumption and saving are analyzed; the multiplier of expenditures for Kyrgyzstan. A noticeable dependence of the indicator of economic development and foreign trade activity with the use of statistical and economic-mathematical methods with an acceptable coefficient of elasticity has been revealed. Conclusions are drawn about the impact of consumer spending on aggregate demand and changes in GDP, about the correspondence of real processes to the Keynesian theory of the investment multiplier and individual deviations from it in a developing economy.

1 Introduction

Chain of connections: a high level of income, an increase in consumer spending, the development of aggregate demand, and the growth of the Kyrgyz economy can be ensured by the implementation of the tasks of the Silk Road Economic Belt (SREB) project. One of its main routes runs from China through Central Asia and beyond [1, 2]. The interaction of the SREB project and the determinants of the population's finances is as follows (Fig. 1).

The participation of the Kyrgyz Republic in the implementation of the goals and objectives of this initiative will increase the pace of socio-economic development of the KR, lost in recent years due to domestic and global epidemiological, socio-economic and

*Corresponding author: fynchina_ha@mail.ru

political events. Analysts of the World Bank in the report "Global Economic Prospects" predict a slowdown in the growth rate of the world economy in 2023 to 1.7%, including in connection with the tightening of monetary policy to combat high inflation. Moreover, they predict the possibility of a recession in the global economy under the influence of negative shocks. Under these conditions, it is proposed to take state measures to ensure support for vulnerable groups of the population, maintain inflation expectations at a stable level, as well as the stability of financial systems [World Bank Report "Global Economic Prospects": https://www.worldbank.org/en/publication/global-economic-prospects].

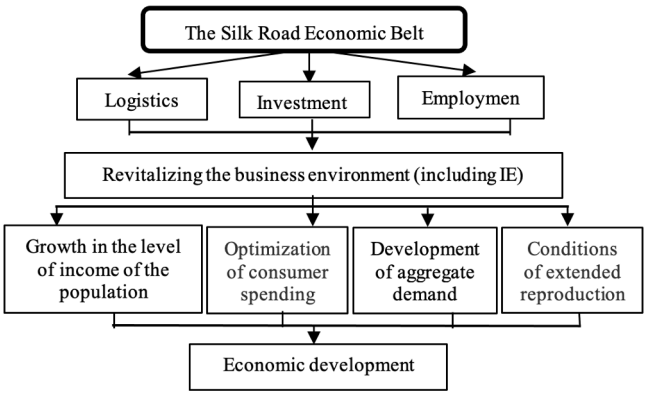

Fig. 1. The impact of the implementation of the SREB Project on economic growth factors.

The implementation by the Government of the KR of socio-economic policy to ensure social stability, economic stability and maintaining the incomes of the population includes various directions. One of them is measures to give impetus to the development of trade on the platform of digitalization of customs control within the framework of the SREB. Kyrgyzstan, due to its geographical location, is called upon to occupy a key position in the implementation of the SREB initiatives. Active participation in the implementation of the tasks of the SREB project will contribute to the economic support of socially vulnerable segments of the population, the development of the individual entrepreneurship sector and ensuring the stability of the country's financial system by creating a favorable business environment, improving the mechanisms of administration of fiscal authorities.

Measures to maintain and develop the sphere of consumption and accumulation in general will cause economic growth of the KR. It is through economic growth that an increase in the income level of the population is achieved as one of the goals of the economic policy of a socially oriented state. Among the determinants of the economic growth of the state are, first of all, the development of the sphere of consumption and accumulation (savings), which give a multiplicative effect of development according to Keynes. Currently, the pressing issues of the socio-economic policy of the KR are improving the standard of living of the population, creating conditions for ensuring the growth of incomes of the population, reducing poverty. These are the main tasks for leveling the negative consequences, socio-economic, epidemiological and geopolitical challenges of our time.

Meanwhile, according to the statistical committee, despite the reduction in the level of general poverty from 32.1% in 2015 to 33.3% in 2021, the depth of poverty has increased by 2 times compared to 2019, that is, income inequality has increased. The uneven distribution of expenditures in the KR also remains high. So, if in 2015 the expenses of 20% of the most affluent segments of the population exceeded the expenses of 20% of the least affluent segments of the population by 4 times, in 2021 – 4.2 times, that is, the expenses of the least affluent group increased. The value of the Gini coefficient, which

demonstrates the degree of unevenness of the distribution of the population, in terms of expenditure (consumption) increased from 0.208 in 2015 to 0.345 in 2021, that is, the indicator of unevenness increased [National Statistical Committee of the KR: http://www.stat.kg/en].

The growth of inequality of the population, even with the improvement of the general indicators of the well-being of society, is a negative social factor for economic development through the consumer spending system. The impact is realized through a certain dependence: the higher the differentiation of society, the lower the aggregate consumer demand (while this pattern persists even if the income of the population remains unchanged) [3].

In the year of the tenth anniversary of the announcement of the New Silk Road project, it seems possible and necessary to summarize certain results in order to study economic problems from the standpoint of the multiplicative effect.

2 Materials and methods

The study was conducted according to the data of the National Statistical Committee of the Kyrgyz Republic (NSC KR), as well as statistical data of partner countries on foreign economic activity (General Administration of customs of the people's Republic of China). The choice of consumer spending of the population as a factor influencing economic growth is based on the calculation of GDP by using income as the sum of final consumption expenditures of all sectors of the economy (including households), gross accumulation and net exports of goods and services [4].

The study was conducted using possible scientific methods of research in economics, such as: scientific search (familiarization with the thematic domestic and foreign scientific heritage); statistical and economic with appropriate processing, systematization and analysis of statistical materials, computational and constructive based on the methodology of Keynes and his multiplier [The General Theory of Employment, Interest, and Money: https://www.files.ethz.ch/isn/125515/1366_KeynesTheoryofEmployment.pdf];
interpretation and generalization of the results on the obtained consumption functions in the KR in order to develop the main directions of socio-economic development in the KR. The determination of the relationship between the indicators of foreign trade and economic growth was made using the economic and mathematical method.

3 Results

Assessment of the impact of mutual trade of the KR with China on the economic growth indicator. The development and strengthening of trade and economic cooperation is one of the main directions for the implementation of the SREB project. Meanwhile, trade, as one of the incentives for international cooperation between China and Kyrgyzstan, originated long before the announcement of the new Silk Road project, even in the early years of the transition to a market economy in the KR. Individual entrepreneurs (IE) who mastered the "shuttle business" were at the origins of trade relations with China, Turkiye and other countries. IE have played a significant role in the development of the Kyrgyz economy through saturation of the consumer goods market and satisfying the aggregate demand of the population within the country. At the same time, the merit of the IE also consists in the re-export of goods from China to other neighboring countries (Kazakhstan, Uzbekistan, the Russian Federation). In fact, the re-export of IE of Kyrgyzstan is part of a large program for the development of trade and logistics schemes in order to implement tasks within the framework of the SREB. The great importance of IE in the economy of the

KR consists in the largest share of the volume of gross value added of individual entrepreneurs (20-25% of GDP in the last 5 years). The high correlation coefficient of the gross value added of the individual entrepreneur and the GDP of the KR characterizes a strong direct relationship. This suggests that the development of IE is a significant factor in the economic growth of the country [5].

At the same time, China has been a leader in the export and import of IE for almost all years after the CIS member countries and (subsequently) the EAEU.

The share of imports carried out by IE from China (to the total volume of imports of individual entrepreneurs of the KR) decreased from 53.6% in 2006 to 16.2% in 2018 [6]. However, by 2021 IE again took the leading place in imports (31.3% of the total imports of IE of the KR).

In the anniversary year of the initiative put forward by the Government of the People's Republic of China of the SREB in difficult economic and political conditions, it is necessary to recognize not only economic benefits, but also the receipt of political dividends, money is only of applied importance here [7].

It seems that for the KR, which has difficulties of an economic plan with problems of budget deficit, poverty level, social inequality (described above), it is important to solve economic issues within the framework of the SREB. It is estimated that in this context, "trade volumes are an increasing function of the size of the economy and the proximity between trading partners, where the size is measured as GDP" [8].

Based on this, let's consider the dependence of the GDP of the KR on the trade and economic activity of the KR with China for the period from 2008 to 2021 (Fig. 2). of the impact of mutual trade of the KR with China on the growth rate of the Kyrgyz economy.

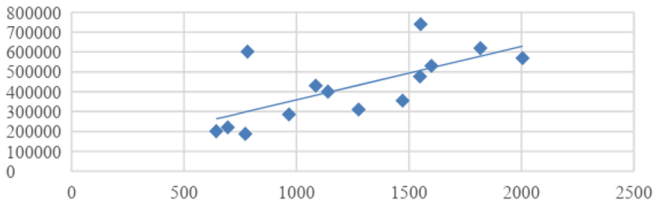

Fig. 2. The impact of the volume of mutual trade of the KR with China on the GDP of the KR for the period from 2008-2021.

The dependence of the two indicators is expressed by the regression equation*: y = 269.01x + 90039*. The multiple correlation coefficient equal to 0.7 shows a high dependence of GDP on the variable of mutual turnover with the PRC. With an increase in the foreign trade turnover of the Kyrgyz Republic with China by $ 1 million, the GDP of the Kyrgyz Republic will increase by 269 million soms. 46% of GDP changes occur due to the total foreign trade turnover, and 54% of variations occur under the influence of other factors.

Fischer's F-test at a 5% significance level is 10.3. This is higher than the norm of 4.75. That is, the regression equation is considered significant. The coefficient of elasticity is 0.79., which means that if the foreign trade turnover of the KR and the PRC changes by 1% of its average value, GDP will change by an average of 0.79%.

At the same time, the impact of foreign trade activity in the KR as a whole on GDP growth is somewhat less. Thus, the regression equation of these two indicators (*y = 68,552x – 21257*) with a correlation coefficient of 0.45 shows an average dependence, with an increase in the foreign trade turnover of the Kyrgyz Republic by $ 1 million. GDP will increase by 69 million soms. Only 20% of GDP changes are due to the total foreign trade turnover.

Estimation of the values of the multiplier of public spending in the KR. The possibility of considering the impact of consumer spending on economic development as a criterion for assessing economic growth is based on one of the methods of calculating GDP. It should also be mentioned here that, as usual, the share of household personal consumption expenditures in the total amount of final consumption is the main part. According to statistical data of the KR, on average over the past 5 years, it is equal to 81.4%, and in the total amount of individual consumption in the country (without collective consumption) was 89%.

However, it is more appropriate for comparative purposes to consider the share of population consumption as part of GDP. In Russian studies [9], the structure of the GDP of the Russian Federation and some developed countries is compared. The predominance of the share of consumer spending in GDP was noted in all countries except China, where it is inferior to the share of gross accumulation. If these indicators are compared with household consumption expenditures in the structure of GDP in the KR (Table 1), then we note the following.

Table 1. Share of final consumption of households in GDP by KR and individual countries, percentage [9]

	2011	2014	2017	2020
Kyrgyz Republic: share of final consumption of households (FCh/h)	82.1	95.0	81.0	74.1
share of non-profit organizations serving households (NPOSH)	1.3	1.0	1.1	1.1
Total share of FCh/h and NPOSH	*83.4*	*96.0*	*82.1*	*75.2*
Russia	*50.4*	*53.7*	*52.9*	*49.5*
USA	*68.8*	*67.6*	*67.7*	*67.1*
European Union	*55.3*	*54.7*	*53.7*	*52.1*
China	*34.9*	*36.7*	*38.5*	...

The share of final consumption of households in the GDP of the Kyrgyz Republic significantly exceeds the same indicator in the countries shown in the table. Moreover, in the last years of the period under review, the dynamics in the KR has a somewhat reverse downward trend than in countries with developed economies. Mainly due to a decrease in the share of gross accumulation in fixed assets (from 35% in 2012 to 25.4% in 2021, mainly due to a decrease in funds allocated for investments).

To analyze the multiplicative effect in the KR, the following indicators were calculated:

- marginal propensity to consume (MPC) how is the ratio of consumption growth to income growth;
- marginal propensity to save (MPS) how is the ratio of the increase in savings to the increase in income;
- the multiplier of consumer spending (k) as the ratio of 1 to the marginal propensity to consume, based on the assumption that income growth is divided into consumption and savings (investment) ("how the next increase of output will have to be divided between consumption and investment" [4]). And together, the marginal propensity to consume and the marginal propensity to save is equal to 1.

The analysis of the indicators in Table 2 allows us to deduce the following. For the entire analyzed period, there is no stable trend in the nature of the dynamics of population consumption in the KR. The values of the marginal propensity to consume are very different from the minimum (-1.12 and -1.13 in 2015 and in 2021) to the maximum values (3.67 in 2009). The decrease in consumption in 2015 and in 2020 (and the corresponding increase in savings) is caused by a deterrent factor. The Kyrgyz Republic's accession to the

EAEU in 2015. and restrictions in connection with the pandemic were accompanied by losses of income of individual entrepreneurs and deferred demand (growth of savings for consumption in the future).

In the pre-crisis and crisis period of socio-economic development of the KR (2008-2009, 2012-2013 and 2018), an increase in consumption was noted, accompanied by a decrease in savings. The marginal propensity to consume took a value above 1 (1.3 and 3.7) or as close as possible to 1, respectively, the indicators of the marginal propensity to save took negative or the lowest values.

Table 2. Coefficients of marginal propensities to consumption and saving, investment multiplier for Kyrgyzstan

	Marginal propensity to consume (MPC)	Marginal propensity to save (MPS)	Consumer spending multiplier (k)	Of GDP, percentage of the previous year
2005	1.280	-0.280	-3.570	99.8
2006	0.747	0.253	3.951	103.1
2007	0.583	0.417	2.396	108.5
2008	1.354	-0.354	-2.828	108.4
2009	3.674	-2.674	-0.374	102.9
2010	0.881	0.119	8.410	99.5
2011	0.933	0.067	14.873	106.0
2012	1.583	-0.583	-1.715	99.9
2013	1.350	-0,350	-2.858	110.9
2014	0.978	0.022	44.733	104.0
2015	-1.122	2.122	0.471	103.9
2016	0.108	0.892	1.121	104.3
2017	0.848	0.152	6.576	104.7
2018	1.351	-0.351	-2.845	103.8
2019	0.296	0.704	1.421	104.6
2020	-1.127	2.127	0.470	91.6
2021	1.740	-0.740	-1.351	106.2

Such a development of consumer behavior without adequate income growth of the population leads to a decrease in savings and living at the expense of loans. Accordingly, the marginal propensity to accumulate often develops with a negative sign. As a result, the expense multipliers also assumed negative values.

Possible reasons for this situation are related: 1) with a maximum increase in expenses in order to protect funds from depreciation and 2) with a decrease in income growth, including due to an outstripping increase in the price level; 3) with an increase in borrowed funds (consumer loans) when the population lives in debt.

Such dynamics of consumer behavior of the population indicates unstable socio-economic and political development of society.

From the position of the theory of J. It follows from Keynes that a large amount of marginal propensity to consume causes more intensive economic growth. However, if we analyze the multiplier of public spending in the Kyrgyz Republic, it is not difficult to notice deviations. The provisions of the multiplier work if the values of the marginal propensity to consume do not exceed 1 (based on the condition stipulated by Keynes on equating the amount of income growth and savings growth to 1). For example, in 2009, the MPC value was the maximum (3.67), but the multiplier value took a negative value of -0.37. However, in general, the correlation of the two indicators is noticeable (Fig. 3) with some delay in the dynamics of GDP.

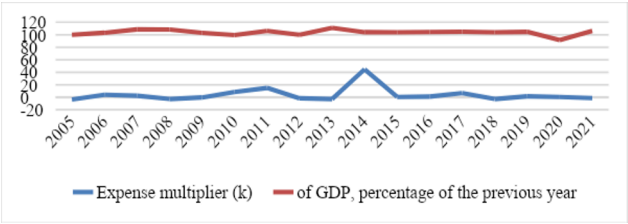

Fig. 3. The curves of the multiplier of household spending and GDP. Source: compiled by the author.

The delay in the operation of this provision of the Keynesian theory can be explained as follows. With a high level of marginal propensity to consume in 2009, a relatively high value of the expenditure multiplier is observed in subsequent years (at the level of 8.4 and 14.9 in 2010 and 2011). Stable growth of marginal propensity to consume in 2012-2014 led to a maximum increase in the coefficient of the expenditure multiplier at the level of 44.7 in 2014. It can be noted that in these years, the increase in the values of the consumer spending multiplier could have been caused as a result of fiscal regulation of the economy as a temporary measure necessary to neutralize the negative consequences of the political events of 2009-2010.

4 Discussion

The available publications on the topic of the multiplicative impact of spending on GDP growth mainly consider government spending. So, for example, the multipliers of government spending, including military spending, in different periods of society development (periods of recession and expansion) were studied in order to choose directions in fiscal policy for economic recovery [10]. Or in another work: according to panel data from Spain, which has long been distinguished by "regional inequality in terms of economic indicators and development" [11], the nature of the correlation between the implementation of a policy of fiscal expansion or austerity from the value of the multiplier of public spending is also determined. The research results of the World Bank specialists show the multipliers of public investment with the highest value, "about 1.5 (on average for all states of the economy), which means that a dollar of public investment leads to 1.5 dollars of economic activity" [11]. The evaluation of the multiplier of public spending in the euro area countries using the econometric method was carried out by Vicente Ferreira and others. One of the results of the analysis is the conclusion about the large positive

impact of public investment on GDP growth with a multiplier value close to 1.8. The implementation of such an expansionary investment policy, as determined by the authors of the study, "can reduce the debt ratio" [12].

The traditional approach in economics considers the propensity to save as a basis for development, savings as an opportunity for investment. The Keynes concept of the macroeconomic multiplier proves that an increase in any of the components of autonomous expenditures leads to an increase in the national income of society by an amount exceeding the initial growth of expenditures.

According to Keynes' theory, consumer spending is the main component of aggregate demand. An increase in the propensity to save reduces the propensity to consume, and as a result, aggregate demand decreases, production decreases, and GDP growth decreases. Based on this, the policy is preferable not to stimulate savings, but to support aggregate demand. An increase in any expenditure element leads to an increase in GDP by a larger amount than the initial costs. This phenomenon is called the multiplier effect. Thus, the multiplier is inversely dependent on saving: the stronger the propensity to save, the weaker the multiplier [4].

Personal consumption of households in the KR is increasingly influencing economic growth due to the growing importance of its share in the formation of GDP. This has become especially noticeable as a result of the crisis phenomena in the economy of almost all countries in connection with the measures taken during the pandemic. Studies using econometric methods of data analysis have shown that domestic demand, supported by low interest rates and strong employment growth, was the basis of economic growth [13]). There are other conclusions: the growth caused by consumption is of less importance than the growth caused by government regulation of the investment process (the growth of government spending for certain purposes). According to the researchers, economic growth from personal consumption is significantly weaker than growth due to other components of aggregate demand, often due to the accumulation of imbalances.

A. Alper, based on the results of a study on a number of developing countries, generalizes about the assumption of the Keynesian macroeconomic model that personal spending and other uses of household income "have a significant impact on economic growth, affecting overall spending" [14].

As a result of the empirical evaluation of the results of the research on the topic identified:

1) the high interdependence of the indicators of economic growth of the KR and the mutual trade turnover of the KR with the PRC against the background of average indicators of the impact of foreign trade activity in general.

2) provisions in accordance with Keynes' theory, when an increase in the propensity to consume causes an increase in the spending multiplier and, as a result, the efficiency of investments increases.

The connection of these two provisions is obvious from two aspects. On the one hand, from the Keynesian theory about the nature of the impact of consumer spending on aggregate demand and the creation of conditions for the reproduction process in the economy on this basis. On the other hand, based on income growth as a result of the revival of trade relations between the countries participating in the Silk Road Initiative.

An important conclusion was made as a result of the study of the multiplier of expenditures in the Russian Federation: "The multiplier effect is manifested more significantly in economies focused on the domestic market, for export. In import-oriented economies, the multiplier effect goes to other countries" [15]. For comparison, if the share of imports in foreign trade turnover in the Russian economy in 2021 amounted to 37.5%, then in the KR – 67% and the balance of foreign trade turnover is negative (within 2-3 billion dollars). Therefore, the calculated indicators of the expenditure multiplier for the

KR (table. 2) do not allow unambiguous interpretation. As a result of meeting aggregate demand in the KR, expenses for the production of goods in other countries are reimbursed.

However, it should be noted that countries with developed economies also have a negative trade balance. For example, USA: monthly trade balance -64 million dollars as of 03/31/2023; Turkey: monthly trade balance -8850 million dollars as of April 2023.

This circumstance indicates that in modern conditions of multifactorial development of the economy, the provisions of classical theories require the introduction of new variables, the impact of which on economic growth should be the subject of new research.

It should be emphasized here that consumer spending has an impact on the development of the Kyrgyz economy through the growth of the fiscal multiplier in the meaning of the ratio of changes in the volume of foreign trade transactions to changes in tax revenues (including income from foreign economic activity).

However, in the issue of replenishing budget revenues due to the intensive development of foreign trade relations, especially with the PRC, corruption risks are noted in the KR. Studies on this issue have revealed the facts of significant discrepancies in data on the volume of mutual turnover between the KR and China. In particular, "the official figures for imports of the KR from China in the period 2007-2012 were radically different from the mirror ones: from 4.2 to 12.6 times. The discrepancies gradually decreased in the period 2013-2018, ranging from 1.9 to 3.7 times. The volume of discrepancies is significant – from 3.2 (2015) to 8.5 billion som. (2008)" [16]. Moreover, similar mirror comparisons of China's supplies in other countries (Türkiye, Georgia) did not reveal such large discrepancies.

Unfortunately, there have been no changes in the state management to ensure proper accounting and transparency in the customs affairs of the KR in recent years. Here is information about a significant discrepancy in data only for 2022 (Table 3). As can be seen, significant discrepancies in the supply of goods for the import of goods to the KR by the sources of the two countries remain.

According to GAC RCh, the mutual trade turnover with the KR alone amounted to $ 15.5 billion. At the same time, NSC KR informs about the value of mutual turnover with all countries of the world in the amount of 11.816 billion dollars (including CIS states). The source links such discrepancies with the presence of smuggling and corruption in the customs department.

Table 3. Supplies of goods to the Kyrgyz Republic (thousand dollars) for 2022
[General Administration of customs of the People's Republic of China: http://www.customs.gov.cn/customs/302249/zfxxgk/2799825/302274/302277/302276/4807727/index.html]

National Statistical Committee of the KR (NSC KR), thousands of dollars (including Hong Kong)		General Administration of customs of the People's Republic of China (GAC RCh), thousands of dollars		Data on the supply of goods GAC RCh to the supply of NSC KR	
import	export	export	import	import	export
4071550.5	77078	15421271	81661	3.8	1.1

It should be assumed that such noticeable discrepancies correspond to large losses of the state budget, if Chinese foreign trade statistics reflect the real situation.

It is believed that the emergence of "digital customs" was predetermined by an objectively existing, rapidly developing international economic phenomenon under the general name digital economy [17]. It seems that the coordinated joint work of the EAEU and the SREB within the framework of the Digital Silk Road project will allow the introduction of the digital customs paradigm, one of the main aspects of which is the use of digital systems to ensure and guarantee the payment of customs duties.

5 Conclusion

One of the main goals of the SREB project is to strengthen trade and economic relations between the participating countries. Participation in the grandiose project of the Chinese initiative for international economic cooperation is mutually beneficial for the participating countries. At the same time, it is aimed at developing the economic situation of developing countries. As the assessment of the effectiveness of the development of trade relations between China and China has shown, the implementation of the SREB measures undoubtedly meets the interests of the KR and will increase its economic potential.

The high value of the influence of mutual trade turnover between the PRC and the KR on economic growth, established as a result of linear regression, is realized under certain conditions through a fiscal multiplier. The multiplier effect, however, is leveled due to the existing corruption component in the customs administration of the KR.

The study of modern phenomena and problems of macroeconomics and socio-economic development with reference to the provisions of classical theory is a process that requires taking into account the influence of many new factors or even some deviations from the paradigm []. At the same time, when studying the dynamics of macroeconomic indicators in conditions of uncertainty of the development of certain events, it seems impossible to take into account all factors [].

In conditions of uncertainty and lack of stability in the socio-economic development of the country against the background of modern geopolitical challenges that require structural changes in the economy, conclusions can be drawn:

- The computational and analytical results presented in the article are obtained on the basis of theoretical approaches of Keynes' propositions with their confirmation or some deviation from the Keynesian model of the multiplicative effect. In this regard, we note that the researchers in their conclusions admit the validity of the assumption that it is impossible for forecasters, including the IMF, to predict economic growth due to "anti-Keynesian prejudices" [20], meaning, probably, the denial of the effectiveness of state regulation by aggregate demand.
- The study of the multiplier theory, numerous works of foreign authors, the application of the theoretical provisions of the multiplicative effect to practical calculations does not allow us to deduce an unambiguous interpretation of the result (as in the case of the existing negative trade balance, when the multiplicative effect of consumer spending is not fully realized). As noted by Marie et al., the use of a simple model gives an imperfect estimate of the multiplicative effect, complex models require the introduction of more variables, and this will lead to a decrease in the reliability of the final result [15].
- During the analysis of the multiplier of the multiplier of household spending in the KR, it was noticed that not always a large amount of marginal propensity to consume causes more intensive economic growth. This situation takes place in some years of the period under review, when the values of the marginal propensity to consume did not exceed 1.
- Low or atypical connection relationship between the marginal propensity to accumulate and income may be a consequence of the fiscal stimulus carried out in the KR to increase the income of the population both in individual regions and in the republic as a whole in a developing market economy and the often unstable socio-economic and political situation.
- A graphical comparison of the curves showed a noticeable relationship between the two indicators, but with a certain delay in the dynamics of GDP.
- Results of the study of the relationship of household expenditures (final consumption of households), savings of the population (savings) The KR with the

definition of the investment multiplier for the KR will be useful in developing directions of socio-economic policy in the country in order to give impetus to the developing economy of the Kyrgyz Republic, and may also be of interest in further research on the topic.

References

1. M. Logachev, P. Limarev, BIO Web Conf., **83**, 05005 (2024) https://doi.org/10.1051/bioconf/20248305005
2. A. Krasnikov, I. Nikishina, O. Mudrakova, I. Krasilnikov, BIO Web Conf., **83**, 05003 (2024) https://doi.org/10.1051/bioconf/20248305003
3. E.A. Kucherenko, Vector of Science TSU, **2(28)**, 108-110 (2014)
4. M. Logachev, G. Zhukova, BIO Web Conf., **83**, 05002 (2024) https://doi.org/10.1051/bioconf/20248305002
5. Kh.A. Fynchina, Bulletin of the KRSU, **16(2)**, 152-156 (2016)
6. Kh.A. Fynchina, Bulletin of the KRSU, **20(7)**, 55-62 (2020)
7. Yu. Zhuochao, The post-Soviet continent, **4(12)/2016**, 30 (2016)
8. Yu. Li, H.-J. Schmerer, Journal of Chinese Economic and Business Studies, **15(3)**, 205-213 (2017) https://doi.org/10.1080/14765284.2017.1347473
9. L.V. Kusurgasheva, S.N. Chernovol, Bulletin of the Altai Academy of Economics and Law, **12(3)**, 481-487 (2021) https://doi.org/10.17513/vaael.2025
10. A.J. Auerbach, Yu. Gorodnichenko, American economic journal: economic policy, **4(2)**, 1-27 (2012) https://doi.org/10.1257/pol.4.2.1
11. J. Perez-Montiel, C. Manera, Applied Economic Analysis, **30(90)**, 229-247 (2022) https://doi.org/10.1108/AEA-03-2021-0077
12. V. Ferreira, Journal of Post Keynesian Economics, **45(3)**, 359-385 (2022) https://doi.org/10.1080/01603477.2022.2077764
13. B. Ziberi, D. Rexha, R. Gashi, Journal of Governance & Regulation, **10(2)**, 20–33 (2021) https://doi.org/10.22495/jgrv10i2art2
14. A.E. Alper, Gaziantep University Journal of Social Sciences, **17(3)**, 980-987 (2018) https://doi.org/10.21547/jss.342917
15. N. Mari, I. Okhotnikov, I. Sibirko, Moscow Economic Journal, **3/2021**, 217 (2021)
16. Kh.A. Fynchina, Bulletin of Dagestan State University, **2/2021**, 20-30 (2021) https://doi.org/10.21779/2500-1930-2021-36-2-20-30.
17. T.V. Lobas, V.V. Makrusev, Economics: Yesterday, Today and Tomorrow, **9(9A)**, 65-79 (2019) https://doi.org/10.34670/AR.2019.91.9.008
18. I. Kulibaba, G. Hudayberdiyeva, BIO Web Conf., **83**, 03003 (2024) https://doi.org/10.1051/bioconf/20248303003
19. M. Logachev, V. Simonov, BIO Web Conf., **83**, 03002 (2024) https://doi.org/10.1051/bioconf/20248303002
20. E. Brancaccio, F. De Cristofaro, PSL Quarterly Review, **73(294)**, 225-239 (2020) https://doi.org/10.13133/2037-3643_73.294_2.