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Alisher Makhmudovich Abdullaev

Fergana Polytechnic Institute
Doctor of Philosophy in Economics,
Associate Professor of Economics, Uzbekistan
SPIN code: 7860-6146
AuthorID: 907907
iqtisodiyot_bosh@mail.ru



Islombek Shukhratjon ugli Tolibov

Ferghana Polytechnic Institute
A fourth-year student at the Faculty of Management in Production
Uzbekistan



Bunyodbek Oybek ugli Bahodirov

Ferghana Polytechnic Institute
A fourth-year student at the Faculty of Management in Production
Uzbekistan

MACROECONOMIC MODELING IN UZBEKISTAN: USING THE GERMANY EXPERIENCE

Abstract: The modern economic and financial system is actively using modelling techniques as a tool to illustrate processes, to predict further developments and, if necessary, to adjust baseline parameters for crisis prevention. The article contains an overview of the main parameters of macroeconomic modelling of economic growth of Uzbekistan, analysis of problems and prospects of their development. Legislation governing economic growth modelling has been identified. The best foreign experience of macroeconomic modelling was analyzed.

Key words: macroeconomic analysis, modeling, economic growth, macroeconomic forecasting, macroeconomic reforms.

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Introduction

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Economic growth is an essential characteristic of public production under all economic systems. Economic growth is the most complete expression of quantitative and qualitative improvement of public production in a certain period of time. Economic growth also means that, in each period under review, it is possible to overcome, in some way or another, existing resource constraints and to ensure increased

production and a wider range of human needs. Because of the difficulties of measuring the whole process of economic development, macroeconomic growth is most often analyzed, although this is only one of the criteria for economic development. Economic growth is an essential component of economic development. But rapid or, on the contrary, zero or even negative economic growth does not always indicate rapid economic development or economic degradation. This requires additional special analysis.[7]

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Modern Uzbekistan is part of the world economic community, so the ongoing integration processes on the international market require the national economy to create new incentives and prospects for sustainable growth of the economy as a solid basis for the stability of the country.[2]

Thanks to the reforms, a regulatory and legislative framework was formed, creating conditions for the formation of a class of entrepreneurs, a competitive environment, a market infrastructure and the creation of a foundation for market relations. In addition to overcoming the consequences of the impact on the economy of the country of the administrative-command system, new economic relations of ownership have been formed, a class of owners-entrepreneurs has been born and has become progressive. Intensive development of small business and private entrepreneurship with the full support of the state was accompanied by processes of privatization and demonopolization.[8]

The Decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev "On the Strategy of Action for the Further Development of the Republic of Uzbekistan" was adopted in order to fundamentally increase the effectiveness of the reforms carried out, create conditions for ensuring the comprehensive and accelerated development of the State and society, implement priority directions for the modernization of the country and liberalize all spheres of life. The Concept of "The strategy of development for the Republic of Uzbekistan till 2035" was developed. On June 29, 2018 the President of the Republic of Uzbekistan approved by Decree No. UP-5468 the Concept of reforming of tax policy of the Republic of Uzbekistan. According to the Presidential Decree from January 1, 2019:

- Lower tax burden on the remuneration fund
- Improved taxation of payers of generally established and simplified taxes with optimization of taxes on turnover (revenues), as well as criteria for transition to simplified taxation regime
- Measures are implemented to reduce the negative impact of improved tax policy on the payers of the simplified tax regime
- The procedure for calculation and payment of value added tax and excise tax is improved
- Reducing the level of tax burden on the economy
- Elimination of imbalances in the level of tax burden between economic entities paying taxes under simplified and established system of taxation
- Optimization of the number of taxes through their unification and consolidation
- Ensuring macroeconomic stability
- Simplification of tax legislation, elimination of contradictions and conflicts
- Ensuring the stability of tax legislation and the direct application of the Tax Code

- Maintaining favorable treatment for foreign investors
- Improvement of tax control forms and mechanisms.

The Institute for Forecasting and Macroeconomic Research was established in accordance with Presidential Decision No. IIII-3752 of 29 May 2018 in order to carry out in-depth macroeconomic research, create a sound scientific and methodological basis for forecasting macroeconomic indicators and develop proposals that serve as a basis for justifying the prospects for socio-economic development, modernization and structural transformation of the country's economy and achieving long-term macroeconomic stability. The main tasks and activities of the Institute are:

- Formation of the scientific and methodological bases of the system of strategic planning and development of concepts, integrated, targeted, sectoral and territorial programs aimed at ensuring the socio-economic development of the country for short, medium and long periods under conditions of economic liberalization, enhancement of the intellectual, technological and innovative potential of the country in order to improve the well-being of the population;
- Development, on the basis of best foreign practice, of modern tools for predictive modeling, assessment of the impact of macroeconomic policy measures on the development of the national economy, its separate spheres and territories;
- Participation in the development of a strategy of structural transformation in the economy aimed at increasing the competitiveness of domestic products in domestic and foreign markets, efficiency of foreign economic activity, preparation of proposals in the most important areas of modernization and diversification of the economy of the country;
- Preparation of scientifically sound proposals for further deepening the reform and liberalization of the economy, ensuring the priority role of private property, wide introduction of market methods and mechanisms of economic management;
- Participation in the development of strategies and programmes for the integrated and balanced socio-economic development of the regions, which provide for the reduction of interregional imbalances in the economy through the effective use of investment and resource potential of the Territories, further stimulation of small business development, innovative entrepreneurship and improvement of the investment climate;
- Preparation of proposals on strategic directions of implementation of advanced resource-saving and innovative technologies, improvement of energy efficiency of the economy, introduction and development of renewable energy sources;

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- Assistance in the development of methodological bases for the formation of the state reserve and the country's food security strategy;
- Development of medium- and long-term projections of demographic development, followed by the development of forecast balances of labour resources, as well as innovative measures and mechanisms aimed at expanding the range of social services provided to the population;
- Carrying out a systematic analysis of various components of the standard and quality of life, the dynamics of well-being of the population, including the size and sources of its income, the structure of consumer expenditures;
- Carrying out calculations of the minimum consumer basket and subsistence minimum with subsequent elaboration of proposals to ensure further growth of purchasing power of the population;
- Wide discussion of the results of economic reforms in mass media and scientific publications,

during conferences, round tables and seminars with the participation of domestic and foreign experts, representatives of business circles.

In fact, the Concept of the Development Strategy of the Republic of Uzbekistan up to 2035. Uzbekistan needs to reduce the tax burden on business in order to stimulate the growth of the private sector, at the same time it is necessary to increase state transfers to improve the standard of living of society.[15]

The purpose of the forecast model is to determine the values of the target macroeconomic development indicators of the Republic of Uzbekistan by 2035. The calculation is based on both quantitative data obtained from open sources in Uzbekistan and the databases of international organizations, and also qualitative assessments and scenarios formed as a result of the interviews of the working group with industry experts.[16]



Figure 1 - Purpose of the forecast model

Indicators were calculated for the period from 2017 to 2035 with a step of 1 year. The US dollar was chosen as the calculation currency to level out any volatility. The horizon for calculations is 18 years (2017–2035) and includes the vision to 2035. Minimum calculation step is equal to one year.

Payment currency: US dollars. Calculations were made using Microsoft Excel.

The main block of the forecasting model is the calculation of macroeconomic indicators on the basis of the benchmarks of the fastest growing countries in Asia.[14]

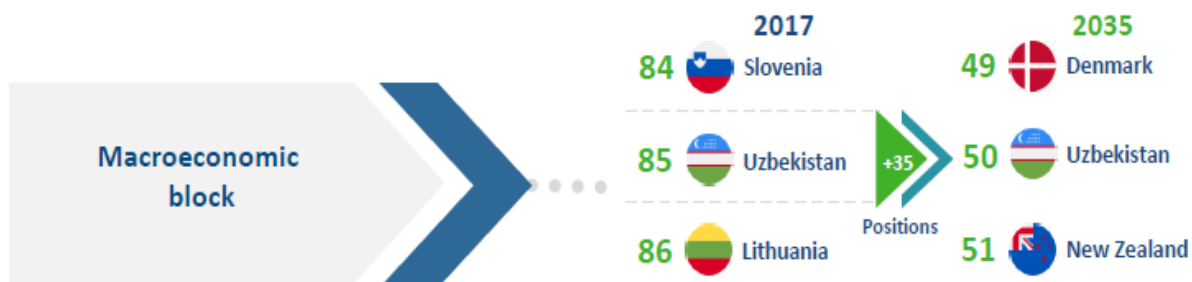


Figure 2 - Main blocks of the forecasting model

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Starting point of the calculation: the values of the key macroeconomic indicators of the Republic of Uzbekistan for 2017. Key prerequisites:

- The growth dynamics of gross indicators correspond with GDP growth.[12,13]
- The structure of the economy—the ratio of AIC, industry, and services—is gradually changing as

it approaches the values of benchmark countries: Malaysia, Turkey, South Korea.

- The dynamics of certain industry indicators are based on the historical dynamics of the countries serving as development role models set out in the Framework Development Strategy of Uzbekistan.

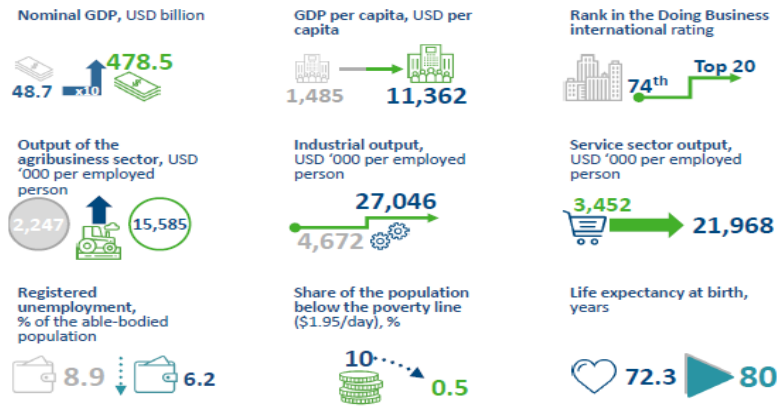


Figure 3 - Key prerequisites

Results of the calculation. Macroeconomic block: scenarios of key indicators. Evolutionary scenario:

- Continuation of the current course of development of the country with minimal institutional changes.
- The initial period of interest from global public and transnational investors (2019–2025) is followed by a gradual decline in investments, as interest in the Eastern region and emerging markets declines.
- Target GDP level will not be reached by 2035 due to the lack of sufficient investments.

Dynamic scenario:

- Gradual transition to the market system. Private funds are the main source of investment, including public-private partnership programs in infrastructure projects, private investments in the fuel and energy complex, as well as the projects of international corporations in Uzbekistan, which will result in investments in industry and agriculture.
- The target GDP level will be reached by 2035 thanks to the faster growth of investments, both public and private, in the amount of USD 993 billion–USD 1,213 billion.

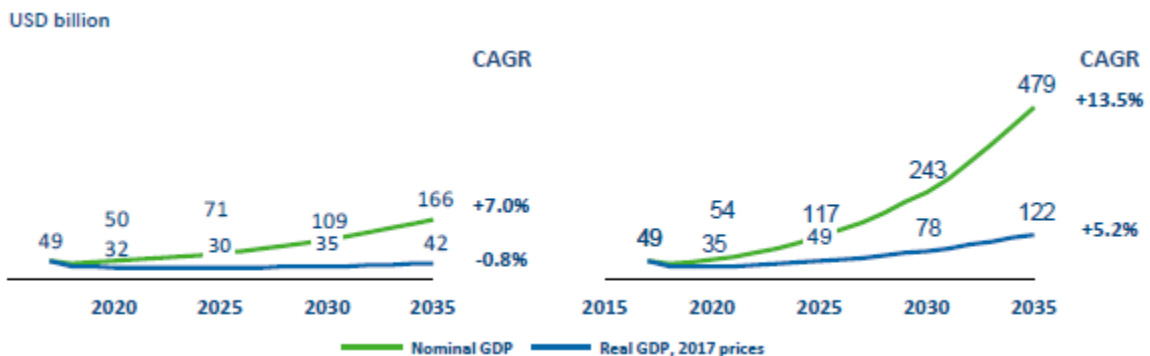


Figure 4 - Dynamics of nominal and real GDP

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Figure 5 - Global ranking

The forecast under the evolutionary scenario is based on the consensus:

- Forecast of the Ministry of the Economy of the Republic of Uzbekistan
- Euromonitor forecast
- IMF forecast
- Forecast of the historical growth rates of countries of the "Earlydemographic dividend" category according to the World Bank, including India, Mexico, Argentina, Turkey, etc.

Nominal GDP:

- The forecast under the dynamic scenario takes into account the goal of being ranked in the Top 50 countries.
- The EIU and Euromonitor forecasts serve as the basis.
- Growth rates are correlated with similar historical cases (including Brazil, China, Indonesia, South Korea, Malaysia, Singapore, Thailand, China, Kazakhstan).[11]

Real GDP:

- Calculated using the same assumptions as the evolutionary scenario: decrease in inflation from 14% to 5%, a slight strengthening in the Uzbek som.

Results of the calculation. Macroeconomic block: scenarios of key indicators:

- Target inflation will equal 4.5% by 2035. This indicator was calculated based on international benchmarks, including Singapore and Brazil
- Over the longer term, target inflation may be 2%–3%, which is the optimal value if the economy is stable.
- The period required to attain the target inflation rate in the Republic of Uzbekistan will equal about

seven years after the start of the targeting policy. A similar period of inflation decline was observed in the Czech Republic and in Brazil.

- The proposed scenario for the attainment of target inflation is more conservative compared to Mexico where target inflation was attained within three years.

• The interest rate of the Central Bank of Uzbekistan on short-term loans remains the main inflation targeting tool. An increase in this rate would reduce lending to the real sector of the economy. As a result, the population and business reduce their expenses, and demand for goods and services declines, which contributes to the slowdown of price growth.

• The maintenance of a high interest rate could have an adverse effect on the national economy. Based on the example of Brazil, inflation targeting based on high key rate instruments caused a decline in economic growth and the deterioration of a number of macroeconomic indicators, including state debt.

• Additional inflation targeting tools facilitating a reduction in lending to the real sector may include an increase in the required reserves and the withdrawal of funds from the financial market through the sale of government securities.

• Successful inflation targeting is contingent on consideration of several external factors that affect inflation:

- Rising prices of key imports.
- Rising prices of agricultural goods caused by a bad harvest.
- State price controls on certain goods.
- Increase in government expenditure.
- Existence of monopolies in some industries.

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Target inflation levels in Uzbekistan

per calendar year, %

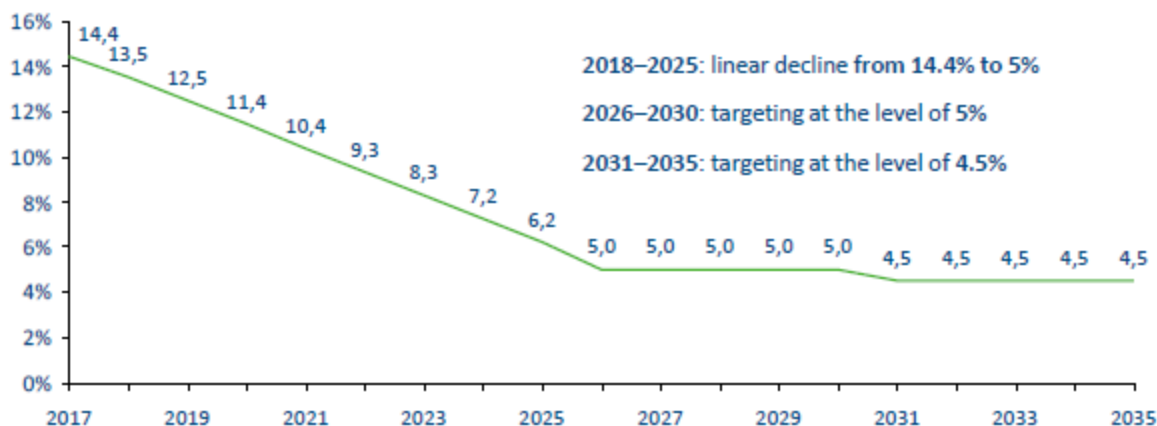


Figure 6 - Target inflation levels under the targeting policy (dynamic scenario)

But despite the macroeconomic reforms under way in Uzbekistan, there are a number of problems:

1. In the coming decade, our main problem will be that the share of able-bodied citizens in the total population will remain extremely high - more than 60%. In this regard, all the measures taken within the framework of the strategy of action of the Republic are primarily aimed at ensuring the advising growth rate not only of the economy, but also job creation

2. Large share of the state in many sectors of the economy (more than 80%).

3. Small export of finished products.

4. Outdated regulatory legislation.

5. Small number of highly qualified personnel in the field of innovation.

In order to solve these problems, the authors offer experience in the macroeconomic model of Germany.

Thanks to its robust state budgets, the German government contributes to positive economic trends and stability in Europe. Economic growth in Germany has continued for eight consecutive years. In particular, national economy is steady: the number of the jobs demanding contributions to social insurance increases since 2010 every year, unemployment rate is at the lowest level as reunion German, and there was a substantial increase of the salary, salaries and pensions. Fiscal policies aimed at growth-friendly consolidation have long increased confidence and laid the foundation for stable macroeconomic conditions, future investment and jobs.

Germany's economy is characterized by excellent infrastructure and a highly skilled workforce. In Germany's economic system, several specific features are highlighted.

Germany's economy is organized on the principle of a socio-market economy characterized by a combination of social balance and market freedom. This economic model involves largely free market forces, but the focus is on social security. The concept

of a social market economy was first developed and implemented by Ludwig Erhard and Alfred Müller-Armak between 1947 and 1949 for the purpose of post-war reconstruction of Germany.[10,9]

This model is represented by economic growth and an even distribution of wealth. The center of the system is the entrepreneurial activity of the State, which ensures the equal distribution of social benefits in society. Social partnership between international unions and employers provides a fairly lasting social peace. Reforms in social insurance systems and structural reforms in the labor market are aimed at reducing labor side costs and stimulating economic growth.[5,6]

Germany has recently experienced some difficulties in implementing a model of socio-market management. The high level of social guarantees has led to the fact that 40% of the net profit of German companies goes to remuneration and contributions to social funds. Out of 100 euros of net wages, on average, employers' contributions to social funds account for 81 euros. A powerful fiscal press on the population and companies is used to maintain social benefits at the proper level. The level of taxation in the country reached significant levels by the late 1990s. Thus, while in the United States about 32% of retained earnings were allocated to taxes, in the United Kingdom - 45%, in Germany this figure reached 65%. To date, the tax rate on retained earnings in Germany is 50%.

The high rate of ageing of the population also causes considerable expenditure on social security for pensioners. During economic growth in 2010 and 2011, the unemployment rate fell to 6.9%.

The second feature of Germany's economic path is the so-called "Rhine capitalism," characterized by the significant role of banks in the country's economy. Banks are large shareholders of industrial and service companies in Germany, so they actively interfere in business decision-making. Thus, banks' position in

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Germany 's economy, given their real impact on business, is stronger than in other countries of the world.[17,19]

Germany 's economy is also characterized by a high degree of industrialization. Compared to many developed countries of the world, industry is a very large share in GDP production - the main direction of Germany 's specialization in the world economy.[20,18]

In Germany, for historical reasons, there is uneven economic development within the country. The integration and modernization of the economy of eastern Germany remains a time-consuming and costly problem. The annual contributions of the federal government here amount to about \$100 billion.[3,4]

Another feature of the German economy is its export orientation. The state is interested in the open market and significant expansion of the presence in the world market has been achieved over the last decade. According to the International Monetary

Fund, exports of goods and services have grown stronger than world trade since 1997. Even in 2001, when world trade declined by 0.2%, Germany 's exports grew by 6.7%. The most important trading partners are the countries of the European Union, especially France (in 2004 goods and services worth 75 billion euros were exported) and the United Kingdom (61 billion euros), as well as the United States, India, China and Eastern Europe due to the EU 's expansion to the East [1].

In conclusion, despite reforms in macroeconomic forecasting and planning, there are still some problems in macroeconomic modelling. In order to address these problems, it is advisable to analyze best foreign practices and to carry out appropriate reforms. As this solution, the authors propose to use the experience of Germany. All these problems can be solved if there is a clear plan to implement reforms of the macroeconomic model of development of Uzbekistan.

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