



## IQTISODIYOT & TARAQQIYOT

*Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal*

**No6**  
MAXSUS SON



## BAKALAVR TALABALARINIG MAQOLALARI TO'PLAMI



ISSN: 2992-8982

<https://yashil-iqtisodiyot-taraqqiyot.uz/>

**2025**



## IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

### Bosh muharrir:

Sharipov Kongiratbay Avezimbetovich

### Bosh muharrir o'rinbosari:

Karimov Norboy G'aniyevich

### Muharrir:

Qurbonov Sherzod Ismatillayevich

### Tahrir hay'ati:

Salimov Oqil Umrzoqovich, O'zbekiston Fanlar akademiyasi akademigi  
Abduraxmanov Kalandar Xodjayevich, O'zbekiston Fanlar akademiyasi akademigi  
Sharipov Kongiratbay Avezimbetovich, texnika fanlari doktori (DSc), professor  
Rae Kvon Chung, Janubiy Koreya, TDIU faxriy professori, "Nobel" mukofoti laureati  
Osman Mesten, Turkiya parlamenti a'zosi, Turkiya – O'zbekiston do'stlik jamiyati rahbari  
Axmedov Durbek Kudratillayevich, iqtisodiyot fanlari doktori (DSc), professor  
Axmedov Sayfullo Normatovich, iqtisodiyot fanlari doktori (DSc), professor  
Abduraxmanova Gulnora Kalandarovna, iqtisodiyot fanlari doktori (DSc), professor  
Kalonov Muxiddin Baxritdinovich, iqtisodiyot fanlari doktori (DSc), professor  
Siddiqova Sadoqat G'afforovna, pedagogika fanlari bo'yicha falsafa doktori (PhD)  
Xudoyqulov Sadirdin Karimovich, iqtisodiyot fanlari doktori (DSc), professor  
Maxmudov Nosir, iqtisodiyot fanlari doktori (DSc), professor  
Yuldashev Mutallib Ibragimovich, iqtisodiyot fanlari doktori (DSc), professor  
Samadov Asqarjon Nishonovich, iqtisodiyot fanlari nomzodi, professor  
Slizovskiy Dimitriy Yegorovich, texnika fanlari doktori (DSc), professor  
Mustafakulov Sherzod Igamberdiyevich, iqtisodiyot fanlari doktori (DSc), professor  
Axmedov Ikrom Akramovich, iqtisodiyot fanlari doktori (DSc), professor  
Eshtayev Alisher Abdug'aniyevich, iqtisodiyot fanlari doktori (DSc), professor  
Xajiyev Baxtiyor Dushaboyevich, iqtisodiyot fanlari doktori (DSc), professor  
Hakimov Nazar Hakimovich, falsafa fanlari doktori (DSc), professor  
Musayeva Shoira Azimovna, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), professor  
Ali Konak (Ali Ko'nak), iqtisodiyot fanlari doktori (DSc), professor (Turkiya)  
Cham Tat Huei, falsafa fanlari doktori (PhD), professor (Malayziya)  
Foziljonov Ibrohimjon Sotvoldixo'ja o'g'li, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dots.  
Utayev Uktam Choriyevich, O'z.Respub. Bosh prokuraturasi boshqarma boshlig'i o'rinbosari  
Ochilov Farkhod, O'zbekiston Respublikasi Bosh prokuraturasi IJQKD boshlig'i  
Buzrukxonov Sarvarxon Munavvarxonovich, iqtisodiyot fanlari nomzodi, dotsent  
Axmedov Javohir Jamolovich, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD)  
Toxirov Jaloliddin Ochil o'g'li, texnika fanlari bo'yicha falsafa doktori (PhD), katta o'qituvchi  
Bobobekov Ergash Abdumalikovich, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), v.b. dots.  
Djudi Smetana, pedagogika fanlari nomzodi, dotsent (AQSH)  
Krissi Lyuis, pedagogika fanlari nomzodi, dotsent (AQSH)  
Glazova Marina Viktorovna, iqtisodiyot fanlari nomzodi (Moskva)  
Nosirova Nargiza Jamoliddin qizi, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent  
Sevil Piriyeva Karaman, falsafa fanlari doktori (PhD) (Turkiya)  
Mirzaliyev Sanjar Makhmatjon o'g'li, TDIU ITI departamenti rahbari  
Ochilov Bobur Baxtiyor o'g'li, TDIU katta o'qituvchisi

*Elektron nashr. 74 sahifa.*

*E'lon qilishga 2025-yil mayda ruxsat etildi.*



## IQTISODIYOT & TARAQQIYOT

*Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal*

### Editorial board:

**Salimov Okil Umrzokovich**, Academician of the Academy of Sciences of Uzbekistan

**Abdurakhmanov Kalandar Khodjavevich**, Academician of the Academy of Sciences of Uzbekistan

**Sharipov Kongiratbay Avezimbetovich**, Doctor of Technical Sciences (DSc), Professor

**Rae Kwon Chung**, South Korea, Honorary Professor at TSUE, Nobel Prize Laureate

**Osman Mesten**, Member of the Turkish Parliament, Head of the Turkey–Uzbekistan Friendship Society

**Akhmedov Durbek Kudratillayevich**, Doctor of Economic Sciences (DSc), Professor

**Akhmedov Sayfullo Normatovich**, Doctor of Economic Sciences (DSc), Professor

**Abdurakhmanova Gulnora Kalandarovna**, Doctor of Economic Sciences (DSc), Professor

**Kalonov Mukhiddin Bakhridinovich**, Doctor of Economic Sciences (DSc), Professor

**Siddikova Sadokat Gafforovna**, Doctor of Philosophy (PhD) in Pedagogical Sciences

**Khudoykulov Sadirdin Karimovich**, Doctor of Economic Sciences (DSc), Professor

**Makhmudov Nosir**, Doctor of Economic Sciences (DSc), Professor

**Yuldashev Mutallib Ibragimovich**, Doctor of Economic Sciences (DSc), Professor

**Samadov Askarjon Nishonovich**, Candidate of Economic Sciences, Professor

**Slizovskiy Dmitriy Yegorovich**, Doctor of Technical Sciences (DSc), Professor

**Mustafakulov Sherzod Igamberdiyevich**, Doctor of Economic Sciences (DSc), Professor

**Akhmedov Ikrom Akramovich**, Doctor of Economic Sciences (DSc), Professor

**Eshtayev Alisher Abduganiyevich**, Doctor of Economic Sciences (DSc), Professor

**Khajiyev Bakhtiyor Dushaboyevich**, Doctor of Economic Sciences (DSc), Professor

**Khakimov Nazar Khakimovich**, Doctor of Philosophy (DSc), Professor

**Musayeva Shoira Azimovna**, Doctor of Philosophy (PhD) in Economic Sciences, Professor

**Ali Konak**, Doctor of Economic Sciences (DSc), Professor (Turkey)

**Cham Tat Huei**, Doctor of Philosophy (PhD), Professor (Malaysia)

**Foziljonov Ibrokhimjon Sotvoldikhoja ugli**, Doctor of Philosophy (PhD) in Economic Sciences, Associate Professor

**Utayev Uktam Choriyevich**, Deputy Head of Department, Prosecutor General's Office of Uzbekistan

**Ochilov Farkhod**, Head of DCEC, Prosecutor General's Office of Uzbekistan

**Buzrukxonov Sarvarkhon Munavvarkhonovich**, Candidate of Economic Sciences, Associate Professor

**Akhmedov Javokhir Jamolovich**, Doctor of Philosophy (PhD) in Economic Sciences

**Tokhirov Jaloliddin Ochil ugli**, Doctor of Philosophy (PhD) in Technical Sciences, Senior Lecturer

**Bobobekov Ergash Abdumalikovich**, Doctor of Philosophy (PhD) in Economic Sciences, Acting Associate Professor

**Judi Smetana**, Candidate of Pedagogical Sciences, Associate Professor (USA)

**Chrissy Lewis**, Candidate of Pedagogical Sciences, Associate Professor (USA)

**Glazova Marina Viktorovna**, Candidate of Economic Sciences (Moscow)

**Nosirova Nargiza Jamoliddin kizi**, Doctor of Philosophy (PhD) in Economic Sciences, Associate Professor

**Sevil Piriyeva Karaman**, Doctor of Philosophy (PhD) (Turkey)

**Mirzaliyev Sanjar Makhamatjon ugli**, Head of the Department of Scientific Research and Innovations, TSUE

**Ochilov Bobur Bakhtiyor ugli**, Senior lecturer at TSUI

## Ekspertlar kengashi:

**Berkinov Bazarbay**, iqtisodiyot fanlari doktori (DSc), professor  
**Po'latov Baxtiyor Alimovich**, texnika fanlari doktori (DSc), professor  
**Aliyev Bekdavlal Aliyevich**, falsafa fanlari doktori (DSc), professor  
**Isakov Janabay Yakubbayevich**, iqtisodiyot fanlari doktori (DSc), professor  
**Xalikov Suyun Ravshanovich**, iqtisodiyot fanlari nomzodi, dotsent  
**Rustamov Ilhomiddin**, iqtisodiyot fanlari nomzodi, dotsent  
**Hakimov Ziyodulla Ahmadovich**, iqtisodiyot fanlari doktori, dotsent  
**Kamilova Iroda Xusniddinovna**, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD)  
**G'afurov Doniyor Orifovich**, pedagogika fanlari bo'yicha falsafa doktori (PhD)  
**Fayziyev Oybek Raximovich**, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent  
**Tuxtabayev Jamshid Sharafetdinovich**, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent  
**Xamidova Faridaxon Abdulkarim qizi**, iqtisodiyot fanlari doktori, dotsent  
**Yaxshiboyeva Laylo Abdisattorovna**, katta o'qituvchi  
**Babayeva Zuhra Yuldashevna**, mustaqil tadqiqotchi

## Board of Experts:

**Berkinov Bazarbay**, Doctor of Economic Sciences (DSc), Professor  
**Pulatov Bakhtiyor Alimovich**, Doctor of Technical Sciences (DSc), Professor  
**Aliyev Bekdavlal Aliyevich**, Doctor of Philosophy (DSc), Professor  
**Isakov Janabay Yakubbayevich**, Doctor of Economic Sciences (DSc), Professor  
**Khalikov Suyun Ravshanovich**, Candidate of Economic Sciences, Associate Professor  
**Rustamov Ilkhomiddin**, Candidate of Economic Sciences, Associate Professor  
**Khakimov Ziyodulla Akhmadovich**, Doctor of Economic Sciences, Associate Professor  
**Kamilova Iroda Khusniddinovna**, Doctor of Philosophy (PhD) in Economics  
**Gafurov Doniyor Orifovich**, Doctor of Philosophy (PhD) in Pedagogy  
**Fayziyev Oybek Rakhimovich**, Doctor of Philosophy (PhD) in Economics, Associate Professor  
**Tukhtabayev Jamshid Sharafetdinovich**, Doctor of Philosophy (PhD) in Economics, Associate Professor  
**Khamidova Faridaxon Abdulkarimovna**, Doctor of Economic Sciences, Associate Professor  
**Yakhshiboyeva Laylo Abdisattorovna**, Senior Lecturer  
**Babayeva Zuhra Yuldashevna**, Independent Researcher

- 08.00.01 Iqtisodiyot nazariyasi
- 08.00.02 Makroiqtisodiyot
- 08.00.03 Sanoat iqtisodiyoti
- 08.00.04 Qishloq xo'jaligi iqtisodiyoti
- 08.00.05 Xizmat ko'rsatish tarmoqlari iqtisodiyoti
- 08.00.06 Ekonometrika va statistika
- 08.00.07 Moliya, pul muomalasi va kredit
- 08.00.08 Buxgalteriya hisobi, iqtisodiy tahlil va audit
- 08.00.09 Jahon iqtisodiyoti
- 08.00.10 Demografiya. Mehnat iqtisodiyoti
- 08.00.11 Marketing
- 08.00.12 Mintaqaviy iqtisodiyot
- 08.00.13 Menejment
- 08.00.14 Iqtisodiyotda axborot tizimlari va texnologiyalari
- 08.00.15 Tadbirkorlik va kichik biznes iqtisodiyoti
- 08.00.16 Raqamli iqtisodiyot va xalqaro raqamli integratsiya
- 08.00.17 Turizm va mehmonxona faoliyati

**Muassis:** "Ma'rifat-print-media" MChJ

**Hamkorlarimiz:** Toshkent davlat iqtisodiyot universiteti, O'zR Tabiat resurslari vazirligi, O'zR Bosh prokuraturasi huzuridagi IJQK departamenti.

## Jurnalning ilmiyligi:

“Yashil” iqtisodiyot va taraqqiyot” jurnali

O'zbekiston Respublikasi Oliy ta'lim, fan va innovatsiyalar vazirligi huzuridagi Oliy attestatsiya komissiyasi rayosatining 2023-yil 28-fevraldagi 333/5-sonli qarori bilan ro'yxatdan o'tkazilgan.



# MUNDARIJA

Strategies for achieving sustainable growth through green economy transition.....	14
Umida Kakhramonova Gayratovna, Tillayev Khurshidjon Sulaymon oglu	
Current state and development prospects of tourism: comparative analysis and Uzbekistan's experience.....	20
Risolatbonu Shakhzodova, Laziza Khalilova, Nabijonov Biloliddin, Aziza Usmanova	
Инновационные подходы к повышению эффективности корпоративного управления.....	26
Тлеумуратова Мадинабону Дилмурат кизи, Уринов Бабур Насиллоевич	
Startup проекты и их реализация .....	30
Ёдгорова Мухайе Шухратовна, Иминова Наргиза Акрамовна	
Methodology of Teaching English: Traditional and Modern Approaches .....	34
Ravshanova Ziyoda Qahramon Qizi, Xoliqova Dilafruz Shuhratovna	
Государственный кредит и государственный долг.....	37
Срождиддинова З.Х., Тухтасинова Д.Н.	
Сравнительный анализ реформ государственных финансов в Китае и Грузии: уроки для Узбекистана .....	42
Срождиддинова Зарина Хайриддиновна, Шарифзода Мубина Дилмуроджон кизи	
Korxonalarda asosiy vositalar hisobini yuritishni takomillashtirish .....	49
Shakarov Shahzod Sobir o'g'li, Po'latov Xudoyberdi Uktamovich, Esanov Oybek Madatovich	
Sustainable consumption and production: economic challenges and solutions.....	55
Abdullayev Abdug'ofur, Abdubaxromov Abduazim, Eshniyozov Ozodbek, Azizbek Abdullayev	
Traffic congestion in Uzbekistan: causes and strategic solutions .....	60
Abdulloh Qodirov, Imron Egamberdiyev, Isomiddin Ravshanov, Munisa Bekmirzayeva	
The relationship between corruption and economic growth.....	64
Jurayev Jo'rabek, Abdullayeva Aziza, Mamatova Sarvinoz, Maha Ibrahim	



# THE RELATIONSHIP BETWEEN CORRUPTION AND ECONOMIC GROWTH



## Jurayev Jo'rabek

Foundation student of the International Double Degree  
Faculty of TSUE with IMC UAS Krems  
juraevjo-rabek88@gmail.com  
ORCID:0009-0002-4360-3947



## Mamatova Sarvinoz

Foundation student of the International Double Degree  
Faculty of TSUE with IMC UAS Krems  
sarvinoz.mamatova.2006@gmail.com  
ORCID:0009-0006-8166-482X

## Abdullayeva Aziza

Foundation student of the International Double Degree  
Faculty of TSUE with IMC UAS Krems  
az-izassv775@gmail.com  
ORCID:0009-0006-9284-3049

## Maha Ibrahim

Senior Lecturer, IMC Krems Transnational Department,  
Tashkent State University of Economics  
maha.ahmed860@gmail.com  
ORCID: 0009-0001-7015-3200  
Scientific supervisor

**Abstract:** This study investigates the impact of corruption on economic growth by analyzing cross-sectional data from 150 countries for the year 2022. Using the Ordinary Least Squares (OLS) regression method, the study evaluates the relationship between GDP per capita and key variables such as the Corruption Perceptions Index (CPI), foreign direct investment (FDI), inflation, and population growth. The results support the "sand the wheels" hypothesis, indicating that corruption significantly impedes economic performance. The research highlights that higher CPI scores representing lower corruption are positively associated with economic growth. The findings emphasize the importance of transparent governance and anti-corruption measures in promoting sustainable development.

**Key words:** corruption, economic growth, CPI, FDI, inflation, OLS, governance, sustainability.

**Annotatsiya:** Ushbu tadqiqotda 2022-yil uchun 150 mamlakatga oid kesimiy ma'lumotlar asosida korrupsiyaning iqtisodiy o'sishga ta'siri tahlil qilinadi. Oddiy kvadratlar usuli (OLS) yordamida yalpi ichki mahsulotning aholi jon boshiga to'g'ri keluvchi o'sish sur'ati bilan korrupsiya darajasi (CPI), to'g'ridan-to'g'ri xorijiy investitsiyalar (FDI), inflyatsiya va aholi sonining o'sishi o'rtasidagi bog'liqlik o'rganildi. Natijalar "qum g'ildirakda" nazariyasini tasdiqlaydi va korrupsiya iqtisodiy samaradorlikka salbiy ta'sir ko'rsatishini ko'rsatadi. Korrupsiya darajasining pastligi (ya'ni CPI ko'rsatkichi yuqori) iqtisodiy o'sish bilan ijobiy bog'liq ekani aniqlangan. Tadqiqot xulosasida barqaror rivojlanishni ta'minlashda ochiq boshqaruv va korrupsiyaga qarshi kurash muhimligi ta'kidlangan.

**Kalit so'zlar:** korrupsiya, iqtisodiy o'sish, CPI, FDI, inflyatsiya, OLS, boshqaruv, barqarorlik.



**Аннотация:** В данной работе исследуется влияние коррупции на экономический рост на основе поперечных данных за 2022 год из 150 стран. С использованием метода наименьших квадратов (OLS) анализируется взаимосвязь между ВВП на душу населения и такими факторами, как индекс восприятия коррупции (CPI), прямые иностранные инвестиции (FDI), инфляция и рост численности населения. Результаты подтверждают гипотезу «песок в колесах», указывая на то, что коррупция существенно тормозит экономическое развитие. Выявлено, что высокий индекс CPI, отражающий низкий уровень коррупции, положительно коррелирует с экономическим ростом. Исследование подчеркивает важность прозрачного управления и антикоррупционной политики для устойчивого развития.

**Ключевые слова:** коррупция, экономический рост, CPI, FDI, инфляция, OLS, управление, устойчивость.

## INTRODUCTION

Corruption is a global concern and requires the attention of every country. It has attracted researchers' interest for more than 30 years and remains a worldwide topic that demands continued attention from international institutions and economists. Accordingly, it is one of the most challenging problems in both politics and economics.

Corruption exists in many forms, including bribery, extortion, fraud, cartels, abuse of power, embezzlement, and money laundering. It often occurs when individuals seek to maximize their own interests through illegal means. Moreover, corruption poses a significant threat to economic development by hindering technological progress and innovation, reducing work efficiency, and undermining peace and security. The World Bank (1997:8) defines corruption as “the abuse of public authority for private gain.” While corruption is typically viewed as an outcome, it can also be a cause of conflict, generating new grievances and dissatisfaction in society.

In addition, various scholars have noted a correlation between corruption and macroeconomic indicators. In particular, the relationship between corruption and economic performance has long been debated, leading to an increasing number of empirical studies. As F. Petter (2014) states, the economy reflects a nation's development and its ability to attract foreign investment. Countries like New York (USA), Dubai (UAE), Japan, and Singapore are recognized as highly developed economies, largely due to their sustained economic growth. This underlines the importance of understanding the relationship between corruption and economic outcomes, which this paper aims to explore.

Major research in this field is divided into two theoretical perspectives: one arguing that corruption may have a positive impact on economic growth, and the other emphasizing its negative effects. The theory supporting its positive influence is known as the “grease the wheels” hypothesis, which suggests that corruption can help circumvent inefficient regulations. In highly regulated systems, individuals or businesses may bypass obstacles to facilitate transactions, thus stimulating economic activity.

Conversely, the more widely accepted theory is known as the “sand the wheels” hypothesis (European Journal of Political Economy, K. Grundler), which argues that corruption hampers economic growth by reducing efficiency, discouraging innovation, and distorting market mechanisms. Most empirical studies support this view, especially in the context of developing countries. This paper will analyze relevant data to evaluate and support one side of these competing hypotheses.

## REVIEW OF RELEVANT LITERATURE

There is a lively discussion on two theories that have been examined by numerous researchers and show differing outcome indicators. Over the past four to five decades, scholars have debated the relationship between corruption and economic growth in both theoretical and empirical literature. The negative effect of corruption on economic growth has been proven by many researchers and has been theoretically confirmed as a damaging factor (Ivanyina et al., 2016). Mauro tested 67 countries and collected data on each, discovering a negative correlation between corruption and the average annual economic growth rate. Many empirical studies have confirmed this finding and support the hypothesis known as “sand the wheels.”

Additionally, this issue was discussed in the renowned journal *Cogent Economics & Finance*, which backed the notion that economic growth is negatively impacted by corruption (Sepúlveda and Méndez, 2006). Several corruption index methodologies such as CPI, ICRG, and CCI were used in these studies to support the initial hypothesis and validate the prior expectations. The ICRG is published annually by Political Risk Services, the CCI by the World Bank, and the CPI by Transparency International. The cost of corruption is substantial, and its adverse impact on economic growth is widespread across countries.



Empirical studies also reveal a connection between economic growth and political or governmental systems where corruption is prevalent. Three main corruption indicators ICRG, IMD, and CPI have been applied and tested by researchers. According to Eleftherios Spyromitros and Minas Panagiotidis (2022), this paper will focus on the CPI indicator as the main variable. While the ICRG index measures investment risk related to corruption rather than corruption itself, the CPI is often considered a more appropriate metric.

Furthermore, studies show that in the long term, corruption has a negative impact on growth. For example, Grundler, Klaus, Potrafke, and Nicolas (ECONSTOR, 2019) found that real per capita GDP decreases by almost 17% for every standard deviation increase in the inverted CPI. A fascinating theory by Swaleheen (2011) suggests that although a reversed CPI correlates negatively with economic growth, when a squared reversed CPI is used as a variable, a positive correlation appears, implying a potentially nonlinear relationship.

In support of nonlinear interpretations, the study "The Impact of Corruption on Economic Growth: A Nonlinear Evidence" by Mohamed Ali Trabelsi shows that corruption may have a positive impact on growth under certain conditions. However, the results also suggest that whether corruption levels are high or low, economic growth may still be negatively affected due to marginal effects. In addition, Mushfiq, Allan, and Roland tested these two variables in a nonlinear framework and found that, even with high levels of corruption, there could be an increase in economic growth.

## RESEARCH METHODOLOGY

This study aims to explore the relationship between corruption and economic growth across 150 countries using cross-sectional data for the year 2022. The primary data sources are the World Bank's World Development Indicators and Transparency International's Corruption Perception Index (CPI).

Variables:

Dependent Variable:

GDP per capita (GDPpc) – Measured as the annual growth rate of GDP per capita, this variable reflects the level of economic growth.

Independent Variables:

Corruption (CPI) – Measured using the reverse-scoring method on Transparency International's Corruption Perception Index, where a higher score indicates greater perceived corruption.

Foreign Direct Investment (FDI) – Expressed as a share of GDP.

Inflation (Inf) – Calculated based on the Consumer Price Index (CPI).

Population Growth (Popgrwth) – Defined as the percentage change in population over a specific period.

Data Sources:

World Bank: GDP per capita, FDI, inflation, and population growth.

Transparency International: Corruption Perception Index (CPI).

To evaluate the impact of corruption on economic growth, the study employs the Ordinary Least Squares (OLS) regression technique one of the most widely used estimation methods in empirical economics for identifying relationships among variables.

GDP per capita is chosen as the dependent variable because it serves as a robust economic indicator to assess the average well-being and development level of individuals within a country. Higher GDP per capita typically reflects better productivity, efficient resource use, and broader economic prosperity. It is also instrumental in comparing levels of development across countries.

As emphasized by Eleftherios Spyromitros and Minas Panagiotidis, GDP per capita can be used in place of broader economic growth measures in order to illustrate the impact of corruption on national development. Similarly, Mohammed Ali Trabelsi, in his study "The Impact of Corruption on Economic Growth: A Nonlinear Evidence", also included variables such as FDI, inflation, and population growth, which are key determinants of growth.

Considering these studies, the present paper incorporates all the aforementioned variables to build a reliable regression model. The OLS method is selected due to its relevance and efficiency in estimating linear relationships, making it a suitable approach for examining the direct effects of corruption on economic performance.

## RESULTS AND DISCUSSION

This chapter illustrates the obtained outputs of the models and discusses them.



Table 1. Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
gdppc	150	19520.55	25992.91	238.4419	126426.1
fdi	150	2.59e+16	3.17e+17	-3.22e+11	3.88e+18
inflation	150	11.31161	15.49015	1.234567	138.8085
popgrwth	150	.8964156	1.739149	-14.18845	3.712988
cpi	150	45.34667	17.95445	17	90
lgdppc	150	8.988022	1.449589	5.474125	11.74741
ifdi	150	21.51474	2.983432	12.87058	42.80237
var3	150	147717.9	181957.8	1760.364	812271.1
apopgrwth	150	-.1116539	1.057511	-4.487695	2.652428

### Understanding Variable Relationships and Regression Model

Before conducting the empirical analysis, it is crucial to understand the relationships between the dependent and independent variables. A significant body of literature suggests that corruption negatively affects economic growth. However, in this study, we expect a positive relationship based on the interpretation of the Corruption Perception Index (CPI), where a higher score indicates lower levels of corruption, and a lower score reflects higher levels of corruption.

There is an expected negative relationship between population growth and economic growth, as rapid population increases can strain resources, reduce per capita output, and hamper GDP growth. Conversely, foreign direct investment (FDI) is anticipated to have a positive effect on economic growth, as increased investment can reduce unemployment, enhance productivity, and attract foreign capital inflows.

#### Regression Model Specification:

$$\text{Growth (GDPpc)} = \beta_0 + \beta_1 \text{FDI} - \beta_2 \text{Popgrwth} + \beta_3 \text{CPI} + \beta_4 \text{Inflation} + u$$

Where:

$\beta_0$  = intercept (constant term),

$\beta_1$  = coefficients representing the impact of each independent variable,

$u$  = error term (random disturbance).

#### Model Validation:

This regression model cannot be immediately interpreted without ensuring it satisfies the fundamental Ordinary Least Squares (OLS) assumptions. To validate the model, the following four core assumptions must be tested:

Linearity – The relationship between the independent and dependent variables should be linear.

Homoscedasticity – The variance of residuals (errors) should be constant across observations.

No multicollinearity – Independent variables should not be highly correlated with each other.

Normality of residuals – The error terms should be normally distributed for reliable statistical inference.

Only after these assumptions are met can the regression model be considered valid for interpretation and policy implications.

Table 2. Results of normality test

variable	Obs	Pr(skewness)	Pr(kurtosis)	adi	Chi(2)prob>chi2
cpi	150	0.0014	0.2145	10.18	0.0062

#### Normality Test Interpretation

The normality of the residuals was evaluated using the Skewness-Kurtosis test, which tests the null hypothesis ( $H_0$ ) that the data follows a normal distribution, against the alternative hypothesis ( $H_1$ ) that it does not:

$H_0$ : The data follows a normal distribution.

$H_1$ : The data does not follow a normal distribution.

Based on the test results, the p-value for skewness is less than 0.05. This indicates statistically significant skewness in the data, and hence, we reject the null hypothesis and accept the alternative hypothesis, suggesting the data is not symmetrically distributed.

However, the p-value for kurtosis exceeds the 0.05 threshold, which implies that the distribution does not significantly deviate from normality in terms of peakedness or tail weight. Thus, in this aspect, we fail to reject the null hypothesis and do not accept the alternative.

These findings are summarized in Table 2, indicating that while the data may be acceptable in terms of kurtosis, the skewness violates the normality assumption. Therefore, the residuals do not fully follow a normal distribution, and appropriate caution or corrective measures (such as transformation or robust regression) may be required.

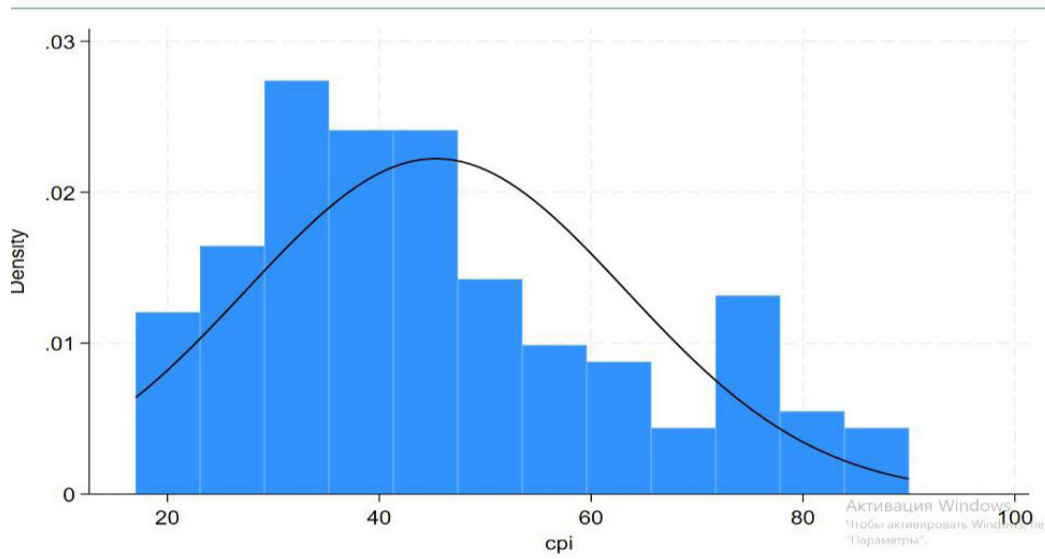


Figure 1. Histogram of CPI with Normal Distribution Curve

Figure 1 illustrates the distribution of CPI (Corruption Perception Index) data, revealing a slight skewness in comparison to a perfectly normal distribution. This deviation suggests that the CPI values are not symmetrically distributed, which may affect the reliability of parametric statistical inference if unaddressed.

In econometric analysis, homoscedasticity a condition where the variance of residuals remains constant across observations is crucial. This property ensures that the estimation of standard errors and confidence intervals is valid and efficient. Skewness or heteroskedasticity, if present, may violate Ordinary Least Squares (OLS) assumptions.

Table 3 presents the results of the regression analysis and demonstrates that GDP per capita is significantly influenced by three key variables:

- Foreign Direct Investment (FDI) – exhibits a strong positive impact on economic growth,
- Corruption levels (CPI) – when scored in reverse (higher score = more corruption), show a negative effect,
- Population Growth – is negatively associated with GDP per capita, likely due to increased strain on economic resources.

These findings highlight the critical role of macroeconomic and governance factors in shaping a country's economic performance.

Table 3. Results of normal distribution test

Source	chi2	df	p
Source	chi2	df	p
Heteroskedasticity	19.87	14	0.1343
Skewness	6.43	4	0.1695
Kurtosis	0.54	1	0.4632
Total	26.83	19	0.1086



First, we must perform the heteroskedasticity test and formulate the corresponding hypothesis:

Ho (null hypothesis): Homoscedasticity is present (i.e., the variance of the error terms is constant).

Ha (alternative hypothesis): Heteroskedasticity is present (i.e., the variance of the error terms is not constant).

According to standard statistical rules, if the p-value is less than 0.05, we reject the null hypothesis in favor of the alternative. However, in this case, the p-value exceeds 0.05, leading us to accept the null hypothesis. Thus, we conclude that there is no sufficient evidence to suggest heteroskedasticity, and we confirm the assumption of homoscedasticity holds true in our model.

Table 4 demonstrates that the regression model is statistically significant. The variables Foreign Direct Investment (FDI), Population Growth, Corruption Perception Index (CPI), and var3 all exhibit significant effects on the logarithm of GDP per capita. The regression coefficients not only quantify the strength of these relationships but also indicate their direction (positive or negative), providing valuable insights into the underlying economic dynamics.

Table 4. Results of the regression model.

Source	SS	df	MS	Number of obs	=	150
Model	228.389077	4	57.0972692	F(4, 145)	=	97.74
Residual	84.7059261	145	.5841788	Prob > F	=	0.0000
				R-squared	=	0.7295
				Adj R-squared	=	0.7220
Total	313.095003	149	2.10130874	Root MSE	=	.76432

lgdppc	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
ifdi	.0664227	.0242271	2.74	0.007	.0185389	.1143065
apopgrwth	-.2902582	.0636995	-4.56	0.000	-.4161577	-.1643587
cpi	.0323568	.0052145	6.21	0.000	.0220505	.042663
var3	2.71e-06	5.04e-07	5.37	0.000	1.71e-06	3.70e-06
_cons	5.659627	.5084806	11.13	0.000	4.654636	6.664618

$$LGDPCC = 5.65 + 0.06ifdi - 0.29popgrwth + 0.032cpi + 2.71var3$$

According to the results presented in Appendix 1, we are able to interpret the given regression model. First of all, it is important to consider the R<sup>2</sup>, which indicates that 72.9% of the variation in the dependent variable is explained by the independent variables. Interestingly, the adjusted R<sup>2</sup> is also very close to this value (72.2%), which highlights the reliability and explanatory power of the chosen variables.

To determine the statistical significance of the model and its variables, we examine the p-values. Since all p-values are less than 0.05, we conclude that the model and its predictors are statistically significant.

As the main focus of this study is the relationship between corruption and economic growth, the CPI variable (Corruption Perception Index) is of particular interest. The results show a positive correlation between CPI and GDP per capita. Specifically, in 2022, a 1-unit increase in CPI (indicating lower perceived corruption) is associated with an average increase of 3.2% in the dependent variable, holding all other variables constant.

Interpretation of Other Coefficients (Ceteris Paribus):

A 1% decrease in population growth leads to an average increase of 0.29% in GDP per capita.

A 1% increase in foreign direct investment (FDI) results in an average increase of 0.06 units in GDP per capita.

A 1-unit increase in inflation leads to an average increase of 2.71 units in GDP per capita.

These outcomes align well with theoretical expectations. Moreover, the results support the conclusion that corruption negatively affects economic growth, as higher CPI values (indicating less corruption) correlate with improved economic performance.

Table 5. Correlation Matrix of Key Variables

	lggdppc	ifdi	apopgr~h	cpi	var3
lggdppc	1.0000				
ifdi	0.5186	1.0000			
apopgrowth	-0.4605	-0.2149	1.0000		
cpi	0.7773	0.4410	-0.3582	1.0000	
var3	0.7348	0.4701	-0.2232	0.7079	1.0000

Table 5 illustrates the Correlation Matrix of Key Variables. As shown in the table, the correlation coefficient values indicate that GDP per capita is most strongly correlated with the Corruption Perception Index (CPI) and var3. This suggests a notable linear relationship between these variables and economic performance.

In contrast, population growth exhibits a weak inverse correlation (coefficient < 1 in absolute terms) with most of the other variables, indicating that as population growth increases, other economic indicators such as GDP per capita tend to decrease slightly, though the relationship is not strong.

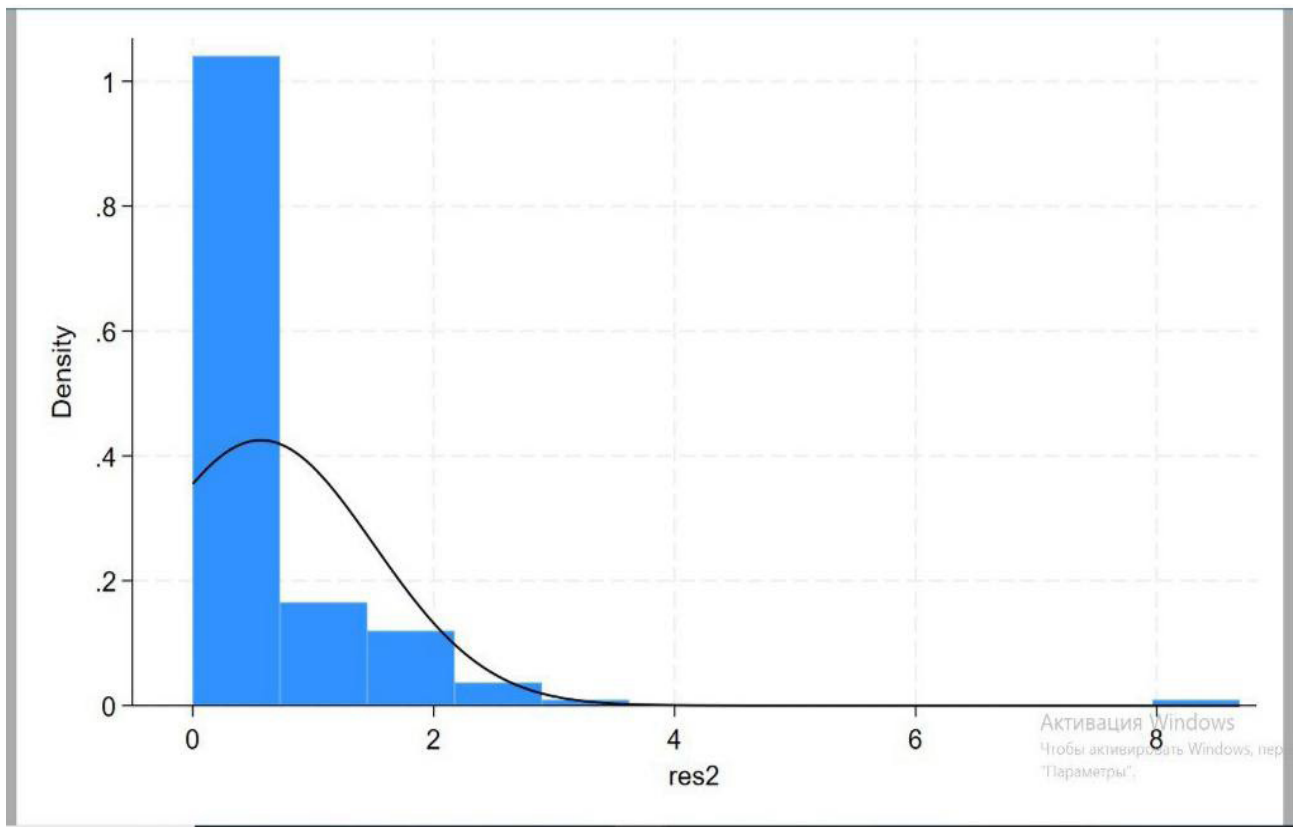


Figure 2. Distribution of Residuals from the Regression Model

The residuals appear to be positively skewed, as also indicated by the histogram, with a large proportion of values clustered around zero, while fewer residuals extend further to the right.

Figure 3 illustrates that most residuals are close to zero, which suggests a good model fit. Although there are a few outliers and a slight right-skewness, there is no evident pattern in the residual distribution. This supports the conclusion that the key regression assumptions particularly those related to normality and homoscedasticity are largely satisfied.

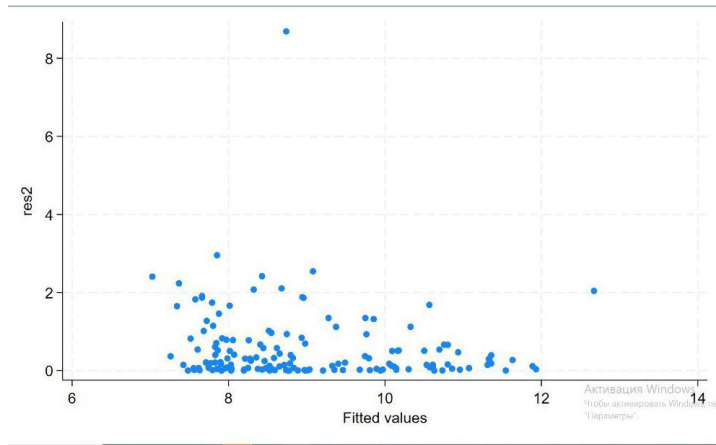


Figure 3. Multicollinearity test

Multicollinearity is a statistical phenomenon in which two or more independent variables in a regression model are highly correlated. In an ideal regression scenario, multicollinearity should be minimal or non-existent, as it can distort the estimated coefficients and reduce the reliability of the model. To assess this issue, Variance Inflation Factor (VIF) tests are commonly employed.

Table 6 presents the VIF values for all independent variables used in the model. Since all VIF values are below the critical threshold of 5, and the mean VIF is 1.72, it can be concluded that multicollinearity is not a concern in this model. This ensures the robustness and interpretability of the regression coefficients.

Table 6. Results of multicollinearity test

Var.	vif	1/f
Cpi	2.24	0.447292
Var3	2.15	0.465977
lfdi	1.33	0.750457
apopgrwth	1.16	0.864008
Mean	VIF	1.72

The Variance Inflation Factor (VIF) test is employed to determine whether multicollinearity exists within the regression model. According to the results presented in the table, the lowest VIF score is 1.33 and the highest is 2.24. Since both values are significantly below the commonly accepted threshold of 5, this provides strong evidence that there is no problematic multicollinearity among the regressors. Consequently, the model's estimated coefficients are considered stable and reliable for interpretation.

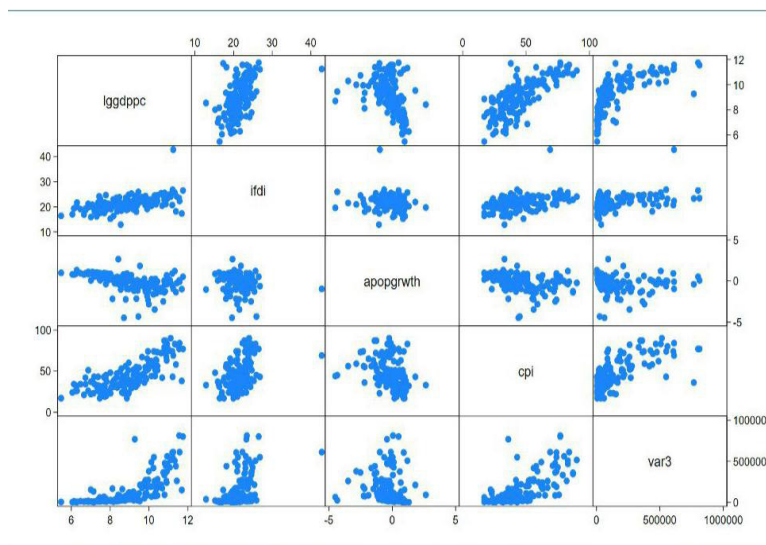


Figure 4. Correlation matrix



Figure 4 shows scatterplots between all variables, helping to visualize relationships and detect patterns such as correlation or skewness. Some variables demonstrate slight skewness and linear trends.

Autocorrelation refers to the degree of correlation of the same variable between two successive time intervals. However, since our dataset is cross-sectional, checking for autocorrelation (e.g., via the Durbin-Watson test) is not required.

Regression Model:

$$\text{LGDPPC} = 5.65 + 0.06 \cdot \text{FDI} - 0.29 \cdot \text{Popgrwth} + 0.032 \cdot \text{CPI} + 2.71 \cdot \text{Inflation}$$

According to the results presented in Appendix 1, the regression model can be interpreted as follows:

The  $R^2$  value is 72.9%, meaning that 72.9% of the variation in GDP per capita is explained by the independent variables.

The adjusted  $R^2$  value is 72.2%, which is close to the  $R^2$  value and indicates that the explanatory variables are reliable and appropriately specified.

The p-values for all variables are less than 0.05, indicating that the estimated coefficients are statistically significant.

As this study examines the relationship between corruption and economic growth, the main variable of interest is CPI. There is a positive correlation between CPI and GDP per capita. Specifically, in 2022, a 1-unit increase in CPI (indicating lower corruption) is associated with an average increase of 3.2% in GDP per capita, holding all other variables constant.

Interpretation of constant variables:

A 1% decrease in population growth leads to an average increase of 0.29% in GDP per capita, ceteris paribus.

A 1% increase in foreign direct investment (FDI) leads to an average increase of 0.06% in GDP per capita, all else being equal.

A one-unit increase in inflation is associated with an average increase of 2.71 units in GDP per capita, assuming other variables remain constant.

All results align with prior expectations, and it is demonstrated that lower corruption (higher CPI) positively contributes to economic growth.

## CONCLUSION

The aim of this study was to examine the impact of corruption on economic growth. Historically, corruption has posed a significant threat to economic activity, which has drawn the attention of economists. This research investigated the relationship between corruption and economic growth across 150 countries using cross-sectional data for the year 2022 and employed Ordinary Least Squares (OLS) estimators.

The findings of the study support the “sand the wheels” hypothesis, which suggests that corruption hinders economic growth. Although the correlation between the Corruption Perceptions Index (CPI) and economic growth appears positive, it actually indicates a negative impact of corruption on economic performance, since a higher CPI score reflects lower levels of corruption.

Countries such as Denmark, Finland, and New Zealand had the highest CPI scores among the 150 countries analyzed. Their strong performance on the CPI is associated with higher rates of economic growth, although it is acknowledged that corruption is not the sole determinant of growth. Other influencing factors—such as foreign direct investment, inflation, and population growth—were also discussed and analyzed in the results section.

In conclusion, the study confirms the initial expectations: corruption has a statistically significant and negative impact on economic growth.

## LIST OF USED LITERATURE

1. Aidt, T. S. (2009). Corruption, institutions, and economic development. *Oxford Review of Economic Policy*, 25(2), 271–291.
2. Cooper, D. A., Kriekhaus, J., & Lusztig, M. (2006). Corruption, democracy and economic growth. *International Political Science Review*, 27(2), 121–136.
3. Gründler, K., & Potrafke, N. (n.d.). *Corruption and economic growth: New empirical evidence*. Working Paper.
4. Huang, F., Li, S., Ding, H., Han, N., & Zhu, T. (n.d.). *Does more moral equal less corruption? The different mediation of moral foundations between economic growth and corruption in China*.
5. Mauro, P. (n.d.). *The persistence of corruption and slow economic growth*. [Prepared by Paolo Mauro].
6. Spyromitros, E., & Panagiotidis, M. (2022). The impact of corruption on economic growth in developing countries and a comparative analysis of corruption measurement indicators. *Cogent Economics & Finance*, 10(1), 2129368. <https://doi.org/10.1080/23322039.2022.2129368>



7. Trabelsi, M. A. (n.d.). The impact of corruption on economic growth: A nonlinear evidence.
8. Acaravci, A., Artan, S., Hayaloglu, P., & Erdoga, S. (n.d.). Economic and institutional determinants of corruption: The case of developed and developing countries.
9. World Bank. (2022). World Development Indicators. <https://data.worldbank.org/>
10. Michigan State University. (n.d.). Statistical Data Sources. globalEDGE. <https://globaledge.msu.edu/global-resources/statistical-data-sources>
11. Springer Nature. (n.d.). Springer journals and books. <https://link.springer.com>
12. Web of Science. (n.d.). Reference and citation data. <https://www.webofscience.com>
13. EBSCOhost. (n.d.). Journals and books. <https://search.ebscohost.com/Login.aspx>



## IQTISODIYOT & TARAQQIYOT

*Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal*

**Ingliz tili muharriri:** Feruz Hakimov

**Musahhih:** Zokir ALIBEKOV

**Sahifalovchi va dizayner:** Oloviddin Sobir o'g'li

### 6-Maxsus son. Bakalavr talabalarining maqolalari to'plami

© Materiallar ko'chirib bosilganda "Yashil" iqtisodiyot va taraqqiyot" jurnali manba sifatida ko'rsatilishi shart. Jurnalda bosilgan material va reklamalardagi dalillarning aniqligiga mualliflar ma'sul. Tahririyat fikri har vaqt ham mualliflar fikriga mos kelmasligi mumkin. Tahririyatga yuborilgan materiallar qaytarilmaydi.

Mazkur jurnalda maqolalar chop etish uchun quyidagi havolalarga maqola, reklama, hikoya va boshqa ijodiy materiallar yuborishingiz mumkin. Materiallar va reklamalar pullik asosda chop etiladi.

EI.Pochta: sq143235@gmail.com

Bot: @iqtisodiyot\_77

Tel.: 93 718 40 07

Jurnalga istalgan payt quyidagi rekvizitlar orqali obuna bo'lishingiz mumkin. Obuna bo'lgach, @iqtisodiyot\_77 telegram sahifamizga to'lov haqidagi ma'lumotni skrinshot yoki foto shaklida jo'natishingizni so'raymiz. Shu asosda har oygi jurnal yangi sonini manzilingizga jo'natamiz.

"Yashil" iqtisodiyot va taraqqiyot" jurnali 03.11.2022-yildan O'zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi Axborot va ommaviy kommunikatsiyalar agentligi tomonidan №566955 reyestr raqami tartibi bo'yicha ro'yxatdan o'tkazilgan.

**Litsenziya raqami:** №046523. PNFL: 30407832680027

**Manzilimiz:** Toshkent shahar, Mirzo Ulug'bek tumani  
Kumushkon ko'chasi, 26-uy.



Jurnal sayti: <https://yashil-iqtisodiyot-taraqqiyot.uz>