



O'ZBEKISTON RESPUBLIKASI
VAZIRLAR MAHKAMASI HUZURIDAGI
BIZNES VA TADBIRKORLIK OLIY MAKTABI

IQTISODIYOT VA TARAQQIYOT
Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal



Yashil

Barqarorlik uchun innovatsiyalar:

Yashil iqtisodiyodga o'tish davrida
biznes va tadbirkorlik bo'yicha



2025 - yil
1-30-aprel



RESEARCH
AND GRANTS UPDATES

NAVBATDAN
TASHQARI SON



<https://gsbe-research.uz/conferences-ups-uz>



conference@gsbe.uz



74-91 xalqaro daraja
ISSN: 2992-8982





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 Sotvoldix 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 Luis, pedagogika fanlari nomzodi, dotsent (AQSH)

Glazova Marina Viktorovna, Iqtisodiyot fanlari doktori (Moskva)

Nosirova Nargiza Jamoliddin qizi, iqtisodiyot fanlari bo'yicha falsafa doktori (PhD), dotsent

Sevil Piriyeva Karaman, falsafa fanlari doktori (PhD) (Turkiya)

Mirzaliyev Sanjar Makhamatjon o'g'li, TDIU ITI departamenti rahbari

Ochilov Bobur Baxtiyor o'g'li, TDIU katta o'qituvchisi

Golisheva Yelena Vyacheslavovna, Iqtisodiyot fanlari nomzodi, dotsent.

Elektron nashr. 112 sahifa.

E'lon qilishga 2025-yil 1-iyunda 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 Khodjayevich, 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 Shoirazimovna, 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
Buzrukkhonov 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 Victorovna, Doctor of Sciences in Economics (Moscow)
Nosirova Nargiza Jamoliddin kizi, Doctor of Philosophy (PhD) in Economic Sciences, Associate Professor
Sevil Piriyeva Karaman, Doctor of Philosophy (PhD) (Turkey)
Mirzaliyev Sanjar Makhmatjon ugli, Head of the Department of Scientific Research and Innovations, TSUE
Ochilov Bobur Bakhtiyor ugli, Senior lecturer at TSUI
Golisheva Yelena Vyacheslavovna, Candidate of Economic Sciences, Associate Professor.

Ekspertlar kengashi:

Berkinov Bazarbay, iqtisodiyot fanlari doktori (DSc), professor
Po'latov Baxtiyor Alimovich, texnika fanlari doktori (DSc), professor
Aliyev Bekdavit 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 Bekdavit 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 Xusniddinovna, 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 1-apreldagi 336/3-
sonli qarori bilan ro'yxatdan
o'tkazilgan.



MUNDARIJA

Dunyo sug'urta bozorida yashil xizmatlarning taraqqiyot strategiyalari.....	7
Alimov Baxodir Batirovich	
Yashil iqtisodiyot sharoitida amaliy va nazariy treninglar orqali xususiy tadbirkorlik faoliyatining samaradorligini oshirish.....	14
Marupov Kabil Komilovich	
O'zbekiston iqtisodiyotini yashillashtirishda raqamli texnologiyalardan foydalanishning joriy holati tahlili.....	20
Nurmetova Muyassar	
Econometric assessment of the impact of investments on the economic system of Surkhandarya region	29
Nurbek Khatamov	
Debt versus tax financing in infrastructure: impact on employment	37
Raxmatov Firdavs Feruz o'g'li, Kengesbaeva Gulfayruz Azamatovna	
Digital infrastructure and green energy in export diversification: evidence from post-soviet countries.....	47
Sadriddinov Ulugbek Jaloliddin ugli	
Jahon savdo tashkiloti doirasida O'zbekistonning iqtisodiy rivojlanish istiqbollari: ko'p tomonlama savdo kelishuvlari tahlili	55
Toshpulatova Malika Ulug'bek qizi	
Развитие финтеха в узбекистане: современное состояние и международный контекст	63
Адилова Сакинахон	
Yashil iqtisodiyotni innovasion rivojlantirishning iqtisodiy samaradorligini baholash	68
Rasulova Dilfuza, Kaytarov Voxid	
Gibrid avtomobillar importida to'lovlar undirish amaliyotini takomillashtirish.....	80
Kaljanov Baxadir Dauletbaevich	
Стратегии корпоративного управления и привлечения иностранных инвестиций в условиях устойчивой экономики	88
Фарход Каракулов	
The impact of WTO accession on Uzbekistan's trade policy: in the case of Kazakhstan	102
Azimjonov Muhammadsoli Muhammadolim o'g'li	



DEBT VERSUS TAX FINANCING IN INFRASTRUCTURE: IMPACT ON EMPLOYMENT

Raxmatov Firdavs Feruz o'g'li

Tashkent Turin Polytechnic University researcher

raxmatovf92@gmail.com

ORCID: 0009-0006-9565-9781

Kengesbaeva Gulfayruz Azamatovna

Tashkent Turin Polytechnic University student

kengesbaevagulfayruz80@gmail.com

Abstract: The study examines whether debt-financed or tax-financed infrastructure investments yield better employment outcomes by analyzing U.S. macroeconomic data from 1989–2023. Using data from the IMF and World Bank, key variables include the employment-to-population ratio, real GDP, gross fixed capital formation, inflation rates, interest rates, tax revenue, and FDI. Two key indicators government borrowing for infrastructure (Infra_debt) and tax-funded infrastructure spending (Infra_tax) are constructed to quantify financing methods. These are adjusted for GDP to ensure comparability over time. Regression models with Newey-West standard errors address heteroskedasticity and autocorrelation, while structural shifts are accounted for with lagged variables and dummy variables for events like the (2007) Financial Crisis and (2021) COVID-19. The results indicate that GDP growth is a strong predictor of employment.

Debt-financed infrastructure investment has a modest positive effect on employment, suggesting that borrowing supports job creation. In contrast, tax-financed infrastructure investment has little to no effect, potentially due to the economic drag of increased taxation. These findings align with theories that borrowing can stimulate employment more effectively in developed economies by avoiding distortions in consumer and business spending. In conclusion, debt-financed infrastructure investment appears more favorable for employment growth than tax-based financing. While both methods sustain public investment, policymakers should consider the potential drawbacks of higher taxation on labor markets. Strategic debt financing can promote economic expansion while minimizing employment disruptions.

Key words: USA, infrastructure investment, tax financing, debt financing, econometrics, employment.

Annotatsiya: Ushbu tadqiqot AQSHning 1989–2023-yillar makroiqtisodiy ma'lumotlari asosida infratuzilma investitsiyalarini qarz hisobidan moliyalashtirish yoki soliqlar hisobidan moliyalashtirish qaysi birining bandlikka ijobiyroq ta'sir ko'rsatishini o'rganadi. Tadqiqotda Xalqaro Valyuta Jamg'armasi va Jahon banki ma'lumotlaridan foydalanilib, aholi bandligi ulushi, real YaIM, asosiy kapitalning yalpi shakllanishi, inflyatsiya darajasi, foiz stavkalari, soliq tushumlari va to'g'ridan-to'g'ri xorijiy investitsiyalar kabi asosiy ko'rsatkichlar tahlil qilindi. Infratuzilmani qarz hisobidan moliyalashtirish (Infra_debt) va soliqlar hisobidan moliyalashtirish (Infra_tax) ko'rsatkichlari ishlab chiqildi hamda vaqt bo'yicha taqqoslash uchun YaIM ga nisbatan moslashtirildi. Nyui-Uest standart xatoliklari bilan regressiya modellarida geteroskedastiklik va avtokorrelyatsiya hisobga olindi, tuzilma o'zgarishlari esa kechikkan o'zgaruvchilar va 2007-yil moliyaviy inqirozi hamda 2021-yil COVID-19 kabi voqealar uchun dummy o'zgaruvchilar orqali inobatga olindi.

Natijalar shuni ko'rsatadiki, YaIM o'sishi bandlikning kuchli prognozlovchisi hisoblanadi. Qarz hisobidan infratuzilma investitsiyalari bandlikka mo'tadil ijobiy ta'sir ko'rsatadi, bu esa qarz olish ish o'rinlarini yaratishga yordam berishini anglatadi. Soliqlar hisobidan moliyalashtirish esa deyarli ta'sir ko'rsatmaydi, ehtimol, soliqlarning oshishi iqtisodiy faollikni sekinlashtirgani sababli. Ushbu xulosalar rivojlangan mamlakatlarda qarz hisobidan moliyalashtirish iste'mol va biznes xarajatlarda buzilishlar keltirib chiqarmasdan bandlikni rag'batlantirishini ta'kidlovchi nazariyalar bilan mos keladi. Xulosa qilib aytganda, qarz hisobidan infratuzilmani moliyalashtirish bandlik o'sishi uchun soliqqa asoslangan moliyalashtirishga qaraganda qulayroq. Har ikkala usul davlat investitsiyalarini ta'minlaydi, biroq siyosatchilar soliqlar oshishining mehnat bozoriga salbiy ta'sirini hisobga olishlari zarur. Strategik qarz moliyalashtirish iqtisodiy o'sishni rag'batlantirib, bandlikdagi salbiy o'zgarishlarni kamaytirishi mumkin.

Kalit so'zlar: AQSH, infratuzilma investitsiyalari, soliq moliyalashtirish, qarz moliyalashtirish, ekonometrika, bandlik.



Аннотация: В исследовании анализируется, какой тип финансирования инфраструктурных инвестиций – за счёт государственного долга или налоговых поступлений – приводит к лучшим результатам в сфере занятости, на основе макроэкономических данных США за 1989–2023 годы. Используя данные МВФ и Всемирного банка, учитывались такие ключевые переменные, как отношение занятости к численности населения, реальный ВВП, валовое накопление основного капитала, инфляция, процентные ставки, налоговые поступления и ПИИ. Были построены два ключевых индикатора: заёмное финансирование инфраструктуры (Infra_debt) и налоговое финансирование инфраструктуры (Infra_tax). Оба показателя были скорректированы по ВВП для обеспечения сопоставимости во времени. Регрессионные модели с оценками стандартных ошибок Ньюки-Уэста учитывали гетероскедастичность и автокорреляцию, а структурные сдвиги корректировались с помощью лаговых переменных и фиктивных переменных для событий, таких как финансовый кризис (2007) и COVID-19 (2021).

Результаты показывают, что рост ВВП является сильным предиктором занятости. Инфраструктурные инвестиции, финансируемые за счёт долга, оказывают умеренное положительное влияние на занятость, что говорит о том, что заимствования поддерживают создание рабочих мест. Напротив, налоговое финансирование практически не влияет на занятость, вероятно, из-за отрицательного эффекта повышения налогов. Эти выводы согласуются с теориями о том, что заимствования более эффективно стимулируют занятость в развитых экономиках, избегая искажения потребления и деловой активности. В заключение, долговое финансирование инфраструктуры более благоприятно для роста занятости, чем налоговое. Хотя оба способа обеспечивают государственные инвестиции, политикам следует учитывать возможные негативные последствия высоких налогов для рынка труда. Стратегическое заимствование может способствовать экономическому росту при минимальных нарушениях в сфере занятости.

Ключевые слова: США, инвестиции в инфраструктуру, налоговое финансирование, долговое финансирование, эконометрика, занятость.

INTRODUCTION

Infrastructure development has long been recognised as a key driver of economic growth, social welfare, and employment generation. The choice of financing method for infrastructure projects – whether through public debt or tax revenues – significantly affects not only fiscal sustainability but also labour market dynamics. Debt financing allows governments to mobilise large resources without immediate tax burdens, potentially accelerating project implementation and stimulating job creation in the short term. However, it increases future repayment obligations, which may necessitate fiscal adjustments affecting employment levels later. In contrast, tax financing ensures immediate resource availability without increasing public debt, but may dampen private consumption and investment due to higher taxation, thus influencing employment generation differently.

In recent years, countries facing budget constraints have increasingly relied on debt instruments to fund large-scale infrastructure initiatives. While empirical evidence suggests positive employment effects during construction phases, long-term implications remain contentious. Therefore, understanding the differential impact of debt versus tax financing on employment is essential for policymakers to design optimal funding strategies that maximise economic and social returns without compromising fiscal stability. This study aims to analyse the comparative employment impacts of debt and tax financing in infrastructure development, drawing insights from existing theoretical frameworks and empirical research across various economies.

REVIEW OF LITERATURE ON THE SUBJECT

Our primary goal is to find out which infrastructure financing method is better, debt or tax financed. This is an interesting and actual theme in recent years, especially for developing countries that should mainly focus on infrastructure development. The essence of infrastructure and subsidies has been proven to be important in economic development by Saudia Arabi Emirates, also Uzbekistan is at this theme.

The President of The republic of Uzbekistan in his speech “We will strengthen efforts to create comfortable and attractive environment for investors” on 24 march 2022 emphasized the continuation of intensive infrastructure development in the country as one of the ultimate goal of the New Uzbekistan Development Strategy for the next 5 years [1].

The main question arises: it that better to finance infrastructure from tax and stimulations or to finance it by government debt. That is undeniable that infrastructure investment always pays back as found by Aschauer (1989) in his study “Is Public Expenditure Productive?” [2]. below an empirical study and analysis will be show from which our main goal is to find the most efficient way to finance infrastructure spendings.

Fiscal policy remains a central tool for governments aiming to stimulate economic activity and boost employment. Two prominent instruments are debt-financed infrastructure spending and tax cuts.



Christina & David Romer examined the macroeconomic variables of GDP, inflation, government spending and employment he was studied how government spending and tax policies impact output and employment [3]. The result a significant impact of government spending exerts a strong multiplier effect on output and job creation, especially during downturns, whereas tax cuts tend to have a less immediate impact on employment.

Alan Auerbach tested macroeconomic determinants of the fiscal indicators like tax rates, government expenditures for India (1980-2009) [4]. The selected Variables were inflation rate, GDP growth, investment, and employment. The study employed OLS analysis, Granger Causality test and Cointegration procedures. The results of regression analysis showed significant impact of all the variables for the Indie. His work show that public debt spending has significant effect on compared to tax cuts, suggesting that direct spending is more effective in stimulating economic activity and job creation.

Olivier Blanchard analysed the relationship between how the government spending and tax policies impact output and employment by using OLS analysis for the period (1999-2010) [5]. The variables that they take GDP growth, labour productivity, labour market indicators (employment/unemployment rates), and the result show that government spending leading the significant effect in the short-run in job creation.

Ramey & Zubairy discussed the challenges of a comparison of debt-financed infrastructure projects vs. tax cuts in job creation, and the selected Variables were GDP, employment figures, and occasionally, Tax revenue, interest rate [6]. The results of regression analysis showed significant impact of all the variables for the GDP and Employment have positive relation Roberto Perotti examined the macroeconomic variables of GDP and employment, with some studies also incorporating public, gross fixed capital formation, debt and interest rates [7]. The study employed OLS analysis and the results of regression analysis showed significant impact of all the variable generally conclude that the multipliers for government spending are higher than those for tax cuts, confirming that direct public expenditure is more effective for short-term job creation.

RESEARCH METHODOLOGY

The study employs a quantitative research design using secondary data collected from World Bank and IMF infrastructure and employment databases. The data were analysed through econometric modelling, specifically multiple regression analysis, to examine the relationship between financing methods and employment outcomes across selected countries. Statistical software was used to ensure accuracy and robustness of results.

Analysis and results

In view of this background, this study aims to investigate the determinants of A comparison of debt-financed infrastructure projects vs. tax cuts in job creation. It examines empirically the impact of macroeconomic variables Central government debt, GDP growth, Gross fixed capital formation, Inflation, consumer prices, Tax revenue, FDI (Table 1).

Table 1. Descriptive Statistics [done by author in Stata]

Variable	Obs	Mean	Std. Dev.	Min	Max
Employment	35	60.21934	1.814183	56.38	63.297
GDP_const	35	1.53e+13	3.63e+12	9.60e+12	2.18e+13
GDP_growth	35	2.496845	1.703412	-2.213469	5.800206
Gross_cap	35	21.11851	1.214805	18.31394	23.14628
Inflation	42	3.627199	2.423238	-0.3555463	8.0028
Interest_r~e	35	5.868619	2.374243	3.25	10.87333
Tax	35	10.65259	1.067166	7.903517	12.9708
FDI	42	1.441206	0.8848422	-0.6328269	3.619468

In the table 1 we can see information about some essential statistical measurements of variables. To be more accurate we rounded up in two decimal and based on this, there are overall 35 observations are



consisted and according to dependent variable, macroeconomic variable is Employment which is measured in percentage and according this the mean value is 60.21 and while min and max are 56.38 and 63.2. Next macroeconomic determinant is Real GDP that are measured in thousands of USD and according the mean value is 1.53e3 while the lowest and heights values are 9.60e1 and 2. 18e. The following independent variable is Gross fixed capital that usually measured in USD dollar and according the mean value is 21.11 while the min and max value are 18.23 and 23.44.

Next is the inflation that are measured in percentage and the mean value is 3.62 while lowest and highest value are -0.35 and 8.02. Next macroeconomic variable is Leading interest rate which are measured as percentage according the mean is 5.86 while the min and max value 3.25 and 10.87. The following independent variable is Tax revenue which usually measured in percentage and according the mean is 10.65 while the min and max value are 7.70 and 12.97. The last macroeconomic variable is FDI which measured in USD dollar and the according the mean is 1.44 while the lowest and highest value are -0.63 and 3.61 (Table 2).

Table 2. Correlation matrix [done by author in Stata]

	Employ~t	GDP_co~t	GDP_gr~h	Gross_~p	Intere~e	Tax	FDI
Employment	1.0000						
GDP_const	-0.5118	1.0000					
GDP_growth	0.4218	-0.1737	1.0000				
Gross_cap	0.7098	-0.0465	0.3369	1.0000			
Interest_r~e	0.7037	-0.6759	0.2968	0.5176	1.0000		
Tax	0.5506	-0.0826	0.4673	0.6553	0.4539	1.0000	
FDI	-0.4098	0.7672	-0.1490	-0.0408	-0.5997	-0.0774	1.0000

This part of the study is going to examine the correlation of variables with each other's. In empirical analysis, it is important to observe the degree of correlation between variables in order to determine whether they are correlated with each other [see table 2]. According to the correlation rule, variables can correlate between -1 and +1, meaning that there can be a negative 100% and positive 100% correlation between them. If the correlation is found to be more than or less than ± 0.5 , this indicates that the variables have a high degree of commonality and may cause multicollinearity in the model. This could lead to biased regression coefficients and inaccurate population estimates. To be not confuse we describe the correlation Employment and Real GDP they have negatively correlation with each other -0.51 and additionally correlation between the Employment and Gross fixed they are positively at 0.70 correlated with each other and another determinant is Leading interest rate are positively correlated at 0.70. Next is the Tax revenue is positively correlated at 0.55 with employment and the last variable FDI which are negatively correlated at -0.40 with employment and the correlation of other variables is also provided above.

The research study is going to be conducted on timeseries data, which consists of the data for USA from IMF and World Bank datasets. And time frame of 34 years has been chosen on a yearly basis to capture the effects of infrastructure investments fully as quarterly data is not appropriate to my study. From 1989 to 2023 for USA as this country implemented both Tax financed and Debt financed infrastructure investments. As there are no direct indicators for our independent variables we created ones:

We created two variables, to measure the portion of capital that is financed through changes in debt; (Infra_debt) represents the portion of infrastructure spending financed through governmental debt while (Infra_tax) measures the portion of capital financed through changes in taxation calculated in the bellows formuls:

Then we adjusted our newly created variables (infra_debt) and (infra_tax) by multiplying them by GDP (constant 2015 \$), which in result will represent real dollar invested in infrastructure through debt or tax so we can measure their precise impact on employment:

We adjustments scale debt and tax contributions in real terms relative to GDP it will help us to find the impact of one additional dollar investment in debt or tax on employment in USA (Figure 1).

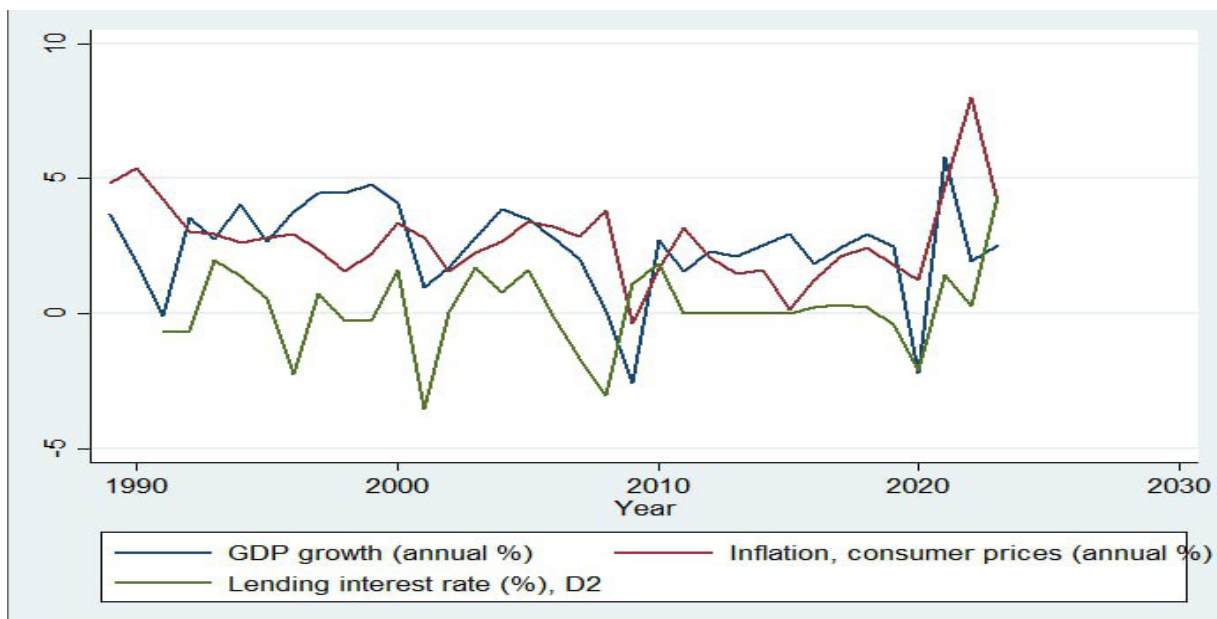


Figure 1. This time series graph [done by author in Stata]

In this time series graph we can see dynamics over time, GDP Growth (Blue Line) there was the noticeable dips around 2008–2010 due to the Global Financial Crisis.

And a sharp decline in 2020 due to COVID – 19 pandemics. Inflation (Red Line) In periods of economic growth, inflation tends to increase, while in economic downturns, it declines A significant inflation spike is observed around 2020, which may be linked to pandemic-related economic disruptions and monetary policies. Lending Interest Rate (Green Line) A downward trend in interest rates is noticeable before 2008, which aligns with global monetary easing before the financial crisis. So, we created new dummy variable breaks those accounts for structural breaks in data (Figure 2).

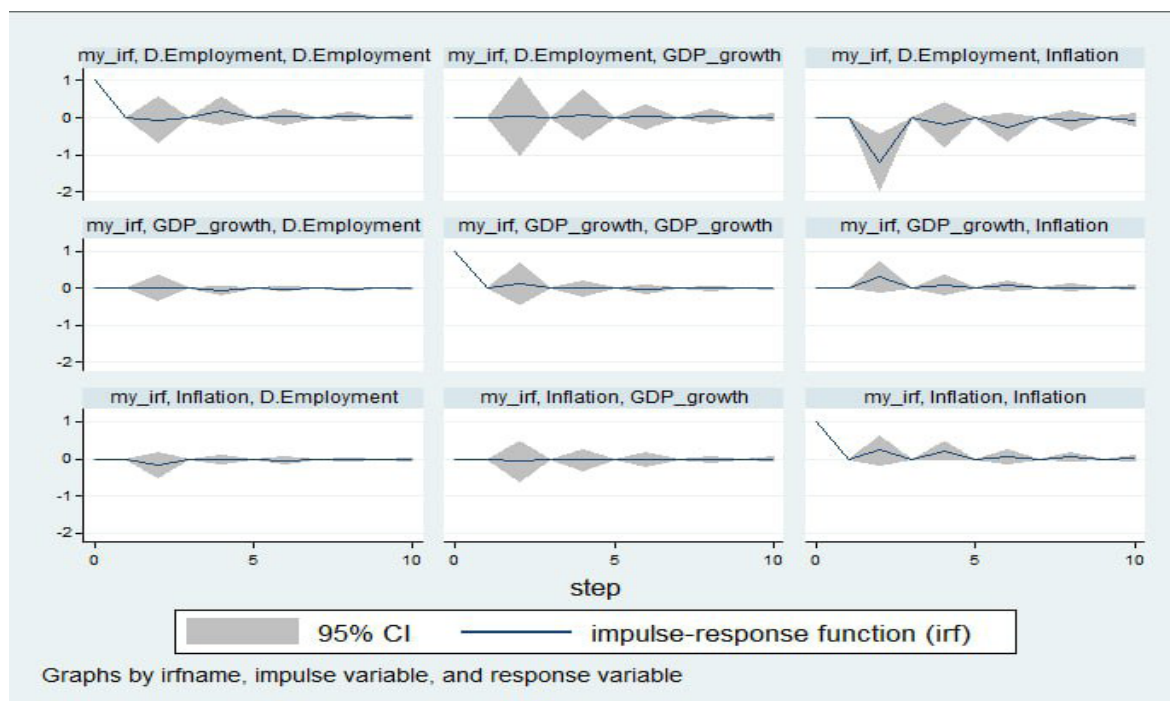


Figure 2. Impulse Response Function (IRF) [done by author in Stata]

Then we check the Impulse Response Function (IRF) Graphs as we can see the graphs above. The first row of the table examines the impact of a D.Employment shock on itself, GDP growth, and inflation. A shock to D.Employment initially affects itself positively, but then stabilizes. The effect on GDP growth and inflation is



minimal and fluctuates slightly over time. Next the second row considers shocks to GDP growth and their impact on employment and inflation. A GDP growth shock initially has a negative effect on employment but eventually stabilizes. The impact on its own growth shows persistence, meaning that past growth influences future growth. Inflation has a mild response to GDP growth shocks. Last one the third row examines the effects of inflation shocks on employment, GDP growth, and inflation itself. A negative initial response to inflation shocks can be seen in employment, indicating that inflation may reduce employment in the short term. GDP growth reacts slightly, but remains mostly stable. Inflation itself shows a dampening effect, meaning that it stabilizes over time. So this test shows that GDP_growth and Inflation have no significant impact on D.Employment, which confirms that we can include them in our model and they will not distort our regression.

After deep research to find the most appropriate regression model regression analysis using Newey-West standard, this model used for correcting heteroskedasticity and autocorrelation

D.Employment is a first difference of employment to population ratio in "percentage"

L2.infra_debt_real is a second lag of a one dollar investment into infrastructure from debt.

GDP_growth it is a simple growth rate of GDP in percentage.

D.L.Interes_rate is a differentiated and lagged value of interest rate in a country.

Breaks is a dummy variable of breaks in an economy where 1 is a downward trend and 0 is no crisis.

There all variable are the same except from L.infra_tax_real which is a "real dollar from 2015" investment from tax into infrastructure. This model shows the impact of tax financed infrastructure to unemployment (Table 3).

Regression with Newey-West standard errors				Number of obs	=	33
maximum lag: 3				F(4, 27)	=	19.49
				Prob > F	=	0.0000
D.Employment	Newey-West					
	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
infra_debt_real L2.	1.38e-15	4.97e-16	2.77	0.010	3.58e-16	2.40e-15
GDP_growth	.4446143	.077593	5.73	0.000	.2854066	.603822
Inflation	.1978823	.0606392	3.26	0.003	.0734609	.3223037
Interest_rate LD.	.0923225	.0515814	1.79	0.085	-.0135138	.1981588
breaks	.3092819	.220472	1.40	0.172	-.1430893	.761653
_cons	-2.05698	.4710346	-4.37	0.000	-3.023463	-1.090497

Table 3. Empirical Result [done by author in Stata]

The table 3 presents the results of a regression analysis using Newey-West standard errors to correct for heteroskedasticity and autocorrelation. It was employed as this model is able to capture most of the fluctuation in employment given with independent variables. And appropriate lag of 3 was chosen due to the number of observations.

Based on the regression results, a 1% increase in GDP growth is associated with an approximately 0.44% increase in employment, and this effect is statistically significant at the 1% level.

Similarly, a 1% increase in inflation is linked to an approximately 0.20% increase in employment, also statistically significant at the 1% level.

Infrastructure debt (lagged by two periods) also has a positive and statistically significant effect on employment, though the magnitude is extremely small. It is approximately 725 trillion dollars needed to invest from debt into infrastructure to increase employment by 1% from previous employment.



On the other hand, the interest rate (lagged difference) has a positive but marginally insignificant effect on employment, with a p-value of 0.085 (above the 5% threshold).

The breaks variable does not show a statistically significant impact, suggesting structural changes may not be a key determinant in this model.

After then, there are another common issue with the model is the presence of multicollinearity between variables. The table 4 as we see we confidently say there is no a multicollinearity problem since the average value at 2.27 below than 5 (Table 4).

Table 4. VIF [done by author in Stata]

Variable	VIF	1/VIF
Inflation	3.87	0.258306
infra_debt~1		
L2.	2.65	0.377648
GDP_growth	2.57	0.389274
breaks	1.14	0.878900
Interest_r~e		
LD.	1.10	0.905242
Mean VIF	2.27	

In the table 5 we can see the summary statistics for the regression error term, since the mean is close to zero; this suggests the model does not have a significant bias in its predictions. Even more, below is the scatterplot that confirms that our model made a good prediction of employment (Table 5).

Table 5. Error term description [done by author in Stata]

Variable	Obs	Mean	Std. Dev.	Min	Max
error	33	-.0157273	.8381715	-2.45135	1.196836

After than regression analysis, conducting a number of post estimation tests is important in order to make sure whether the inference of coefficients to population is reliable or not. One of the common issues is observing heteroskedasticity problem in regression, we can check it by many ways one of them is the technical method or scatter plot as we can see the below graphic the three may still be slight non-constant variance in residuals (Figure 3).

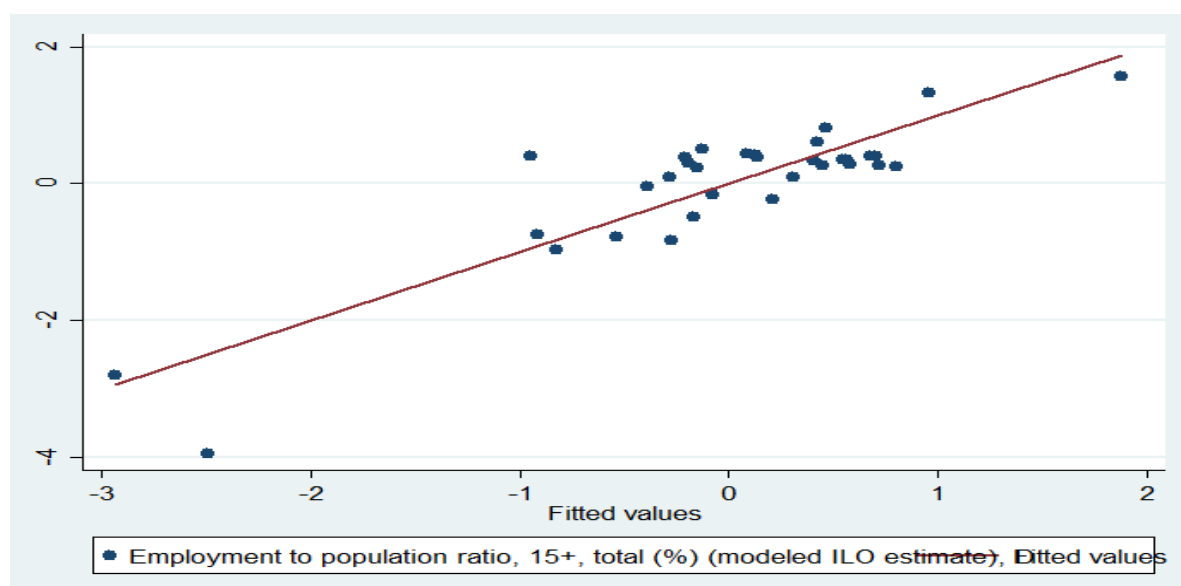


Figure 3. scatterplot of our model predictions [done by author in Stata]



If GDP growth increases by one unit, employment rises by 0.4778 units, and this effect is found to be statistically significant at the 1% level.

A one-unit increase in the interest rate leads to a 0.1349-unit increase in employment, and this effect is statistically significant at the 5% level (Table 6).

Table 6. Model with tax effect on employment [done by author in Stata]

D.Employment	Coef.	Newey-West Std. Err.	t	P> t	[95% Conf. Interval]	
infra_tax_real L1.	-7.70e-16	3.14e-16	-2.46	0.020	-1.41e-15	-1.28e-16
GDP_growth	.4777823	.11741	4.07	0.000	.2372787	.7182859
Inflation L1.	.1457058	.075135	1.94	0.063	-.0082013	.2996129
Interest_rate LD.	.1349761	.0647968	2.08	0.046	.002246	.2677062
_cons	-1.523775	.4518266	-3.37	0.002	-2.4493	-.5982505

Inflation also has a positive impact on employment, with a 0.1451-unit increase per one-unit rise in inflation, but this effect is only marginally significant at the 10% level.

On the other hand, a one-unit increase in infrastructure tax reduces employment by 7.70e-16 units, and this negative effect is statistically significant at the 5% level. It is negative but its coefficients are too small, which can suggest that tax financed infrastructure spending can of course create new jobs via foreign investment and national economic simulation, but the amount of tax increased also creates unpleasant environment for an operating enterprise.

After then, we one more time check the multicollinearity between variables. The table 6 as we see we confidently say there is no a multicollinearity problem since the average value at 1.46 below than 5 (Table 7).

Table 7. VIF [done by author in Stata]

Variable	VIF	1/VIF
Inflation L1.	1.87	0.535930
GDP_growth infra_tax~l L1.	1.79	0.557560
Interest_r~e LD.	1.12	0.889339
	1.05	0.956086
Mean VIF	1.46	

After than we again check, conducting a number of post estimation tests is important in order to make sure whether the inference of coefficients to population is reliable or not. One of the common issues is observing heteroskedasticity problem in regression, we can check it by many ways one of them is the technical method or scatter plot as we can see the above graphic the three may still be slight non-constant variance in residuals. But as we used Newey-West estimator model we can control for heteroscedasticity and autocorrelation (Figure 4).

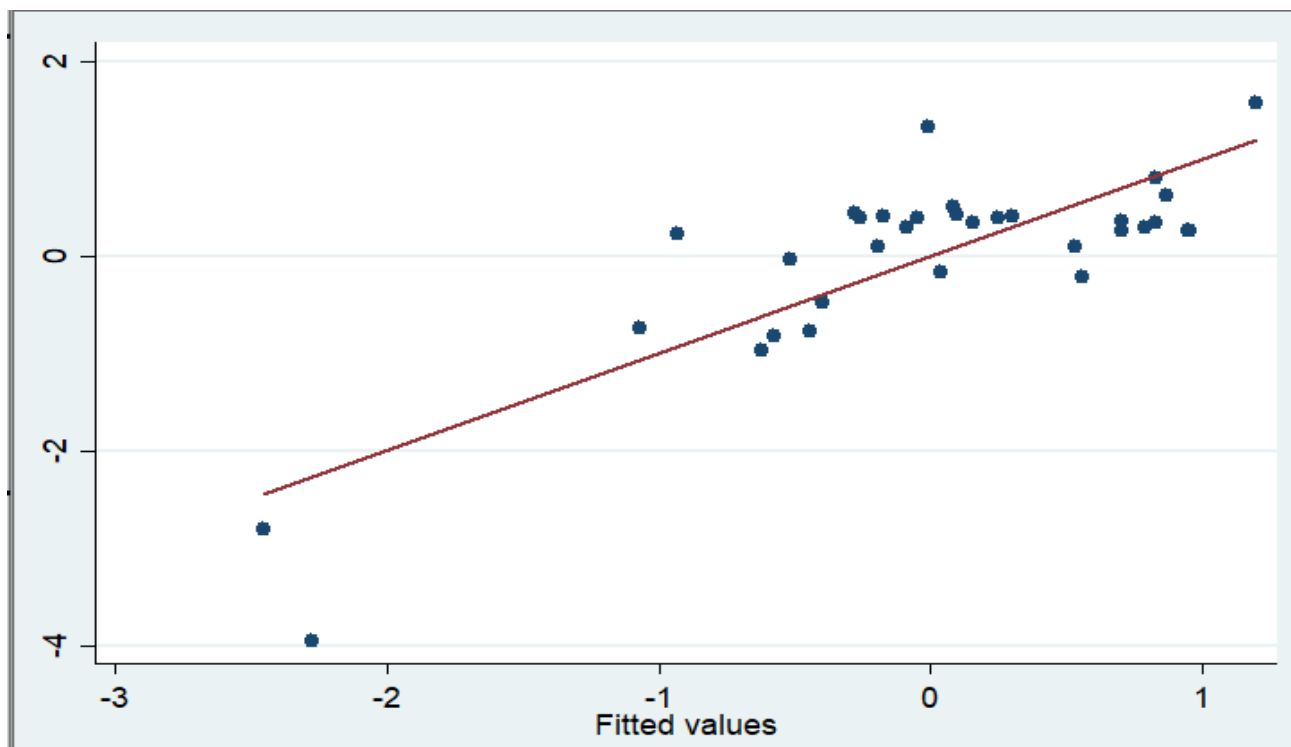


Figure 4. scatterplot of our model predictions [done by author in Stata]

CONCLUSIONS AND SUGGESTIONS

Regression models with Newey-West standard errors analysis results indicate that GDP growth is a strong predictor of employment. Debt-financed infrastructure investment has a modest positive effect on employment, suggesting that borrowing supports job creation. In contrast, tax-financed infrastructure investment has little to no effect, potentially due to the economic drag of increased taxation. These findings align with theories that borrowing can stimulate employment more effectively in developed economies by avoiding distortions in consumer and business spending.

In conclusion, debt-financed infrastructure investment appears more favorable for employment growth than tax-based financing. While both methods sustain public investment, policymakers should consider the potential drawbacks of higher taxation on labor markets. Strategic debt financing can promote economic expansion while minimizing employment disruptions.

Also, by checking models (1) and (2), we found infortune investment shows the negatively effect on job creation while intraturn debt have positively affect the job creation meaning that since higher taxes on infrastructure reduce employment, due to governments impose higher taxes to finance infrastructure projects, businesses may face higher operating costs which leads low investment and slower job creation more over lower demand may result in businesses hiring fewer workers or even laying off employees. That is why government need focus on the increase infrastructure debt positively to impacts employment ensuring that the project has high economic return such as the transportation, energy, and digital infrastructure. So final policy recommendations of our study is that, it is better to relay on government debt financed infrastructure investments rather than on tax financed ones, as debt investment covers itself in the short run, while tax fascination can lead to unemployment. In the short run, tax increases can have a negative impact on employment due to the above reasons. However, in the long run, if the tax revenue is used effectively for high-quality infrastructure, it can boost economic activity and create jobs. So, it is important to consider the duration of policy to correctly implement our policy recommendation.

List of used literature:

1. Mirziyoyev Sh.M., (2022). We will strengthen efforts to create comfortable and attractive environment for investors, <https://president.uz/en/lists/view/5077>
2. Aschauer, D. A. (1989). Is public expenditure productive? *Journal of Monetary Economics*, 23(2), 177–200. [https://doi.org/10.1016/0304-3932\(89\)90047-0](https://doi.org/10.1016/0304-3932(89)90047-0)
3. Romer, C. D., & Romer, D. H. (2010). The macroeconomic effects of tax changes: Estimates based on a new measure of fiscal shocks. *American Economic Review*, 100(3), 763–801. <https://doi.org/10.1257/aer.100.3.763>



4. Auerbach, A. J., & Gorodnichenko, Y. (2012). Measuring the output responses to fiscal policy. *American Economic Journal: Economic Policy*, 4(2), 1–27. <https://doi.org/10.1257/pol.4.2.1>
5. Ramey, V. A., & Shapiro, M. D. (1999). Displaced capital: A study of aerospace plant closings (NBER Working Paper No. 7269). National Bureau of Economic Research. <https://doi.org/10.3386/w7269>
6. Ramey, V. A., & Zubairy, S. (2018). Government spending multipliers in good times and in bad: Evidence from US historical data. *Journal of Political Economy*, 126(2), 850-901. <https://doi.org/10.1086/696277>
7. Perotti, R. (2005). Estimating the effects of fiscal policy in OECD countries. CEPR Discussion Paper No. 4842. <https://cepr.org/publications/dp4842>



IQTISODIYOT & TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Ingliz tili muharriri: Feruz Hakimov

Musahhih: Zokir ALIBEKOV

Sahifalovchi va dizayner: Oloviddin Sobir o'g'li

2025-yil. navbatdan tashqari son

© 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 kelamasligi 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.

El.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>



