Do foreign direct investments and bank credits affect employment in Uzbekistan?

Alisher Suyunov

Westminster International University in Tashkent, Tashkent, Uzbekistan

Abstract

Purpose – The paper investigates the relationship between credit to the economy, foreign direct investment (FDI) and the unemployment rate in Uzbekistan using macroeconomic time series over 2004–2019.

Design/methodology/approach – The study estimates the relationship by applying a vector autoregression model, which is considered a "workhorse" model for policy analysis to capture dynamic relationships in economic time series.

Findings – The results suggest both growth in credit to the economy and FDI Granger cause a change in the unemployment rate. The authors found 1% increase in bank credits to the economy growth decreases the unemployment rate by 0.096 pp. over eight years. On the contrary, 1% positive shock to FDI growth increases the unemployment rate by 0.0036% in the context of Uzbekistan.

Practical implications – Uzbekistan should improve FDI absorptive capacity, particularly human capital and financial market development, through growth-enhancing structural reforms in the financial sector to stimulate economic growth and employment. The attracted FDI funds should focus on productive and economic sectors with high labor-absorptive capacity, such as financial and professional services, healthcare and biomedicine, creative industries and media, software sector.

Originality/value – The study contributes to the empirical literature on employment effects of FDIs and credit to the economy of Uzbekistan.

Keywords Unemployment, Credits, Foreign direct investment, Absorptive capacity, Uzbekistan

Paper type Research paper

1. Introduction

The phenomenon of high unemployment rate in Uzbekistan has been persistent despite the government's annual programs on job creation and enhancing employment. During 2007–2017, the unemployment rate in Uzbekistan was around 5%, but it has started to accelerate since 2018, arising a significant concern. Meanwhile, the positive economic growth rate is not reflected in an employment growth. The spark of the coronavirus disease 2019 (COVID-19) pandemic has exacerbated labor market outcome of people, inducing a loss of employment and primary income sources. The pandemic increased the unemployment rate up to 10.5% and decreased the economic growth rate by 4% points from forecasted 5.6–1.7%. The average growth rate of gross domestic product (GDP) in terms of geometric mean has been around 5.77%, while unemployment has grown by 6.11% during 2010–2020 (see Figure 1).

Under these circumstances, for the Uzbek Government, measures to combat accelerating unemployment rate have been gaining importance. Being early signs of Uzbekistan's transition from current state-led to market-driven growth, the state is beginning reforms in
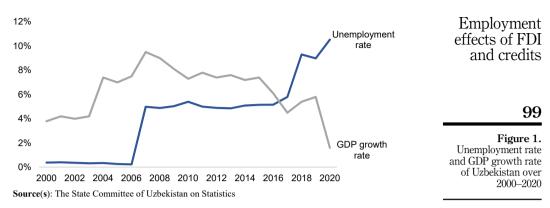
Figure 1.
Unemployment rate
and GDP growth rate
of Uzbekistan over
2000–2020

business development and improving entrepreneurial activities, reducing inefficient bureaucratic procedures and improving the business climate. Private sector development initiatives are reflected upon the reduction of government interventions to the private firms' operations and regulation across sectors. In addition, reforms on decreasing government share and sectoral deregulation create ample opportunities for businesses to acquire provision of government functions and reap benefits.

Particular attention should be given to the programs on developing entrepreneurship that allocate credits with preferential interest rates. Since 2017, Uzbekistan has been experiencing a credit boom, which raised concerns about the risk of credit burst driven by the use of credits for unproductive investments (Lagarde, 2019). As Uzbekistan is experiencing a transition to a market-led economy, the transition sparks off macroeconomic instability to some extent. Such macroeconomic instabilities could deteriorate long-term economic decisions on productive investment and job creation. Similarly, volatility of economic activity, unstable exchange rates and financial market fluctuations as well as credit boom-and-bust episodes bring about large economic and social costs, resulting in losses in productive and human capacities, which would take a long time to be reversed (UNCTAD, 2016). The impact, however, depends on the magnitude of the instability. As Suyunov (2021) argued, one standard deviation positive credit shock was translated into 0.44 pp. growth in the economic growth rate coupled with 2.81 pp. inflationary pressure to the economy. Mild macroeconomic instability may be acceptable if development is accompanied by changes in socioeconomic indicators and advancements (UNCTAD, 2016), while high macroeconomic instability is harmful to national economic development and society's well-being.

In addition to credit to the economy, another important factor for creating jobs and improving economic growth is foreign direct investments (FDIs). Unlike credit to the economy, the FDI is not only an inflow of financial resources to the economy but also an arguably the cheapest medium of technology transfer (Ek, 2007). Firms related to FDIs in the receiving country face relatively lower product and process costs as they do not have to spend a massive amount of money to acquire new technology; they have already been developed in another part of the world at greater costs (Ek, 2007). This enables FDI recipient countries to catch up their developed counterparts at a high pace. The FDI, therefore, could be an essential medium of new technology transfer through which developing economies can acquire modern technologies at a low cost and enhance national economic growth.

The structure of the research study is organized as follows: In section two, we review the existing empirical literature on the impact of FDI inflows and credits to the economy on (un) employment. In Section three, we discuss research methodology and data. Following this, we present results and discussions in Section four. We conclude and point out the limitations of the study to be addressed in future studies in Section five. Finally, we provide policy implications.

2. Literature review

FDIs have been an important driver of economic growth. Multiple empirical research studies reported a positive impact of FDIs on economic growth both in the short and long run in the context of various developing economies (Brincikova and Darmo, 2014; Hansen and Rand, 2006; Joo and Shawl, 2021; Npg and Haiyun, 2017; Siddharthan and Narayanan, 2020; Sokang, 2018; Xu et al., 2021; Younsi et al., 2021). Therefore, both developing and developed countries often try to attract FDIs to provide new decent jobs and reaching better living standards.

As economic growth in the country is fostered by macroeconomic stability, foreign investors tend to analyze macroeconomic stability and labor market conditions of a host economy prior to deciding to invest or not in addition to other determinants of FDI, such as the degree of corruption, political stability and quality of legislation (Strat et al., 2015). Jallab et al.'s (2008) study and Alguacil et al.'s (2011) study found a positive impact of FDI on growth under macroeconomic stability in the Middle East and North Africa countries (cited in Joo and Shawl, 2021). Likewise, Mehic et al.'s (2013) study found macroeconomic stability to be a strong growth driver in European countries (Joo and Shawl, 2021). Investigating the link between FDI inflows and macroeconomic stability, as proxied by inflation rate and unemployment rate, has been gaining importance (Strat et al., 2015).

A vast number of studies highlighted strong spillovers from FDIs to host countries accentuating high importance of the FDI inflow–unemployment relationship for developing countries (Çolak and Alakbarov, 2017; Joo and Shawl, 2021; Strat et al., 2015). Apart from direct impacts on employment, investment and trade, the FDI generates additional positive externalities contributing to productivity growth through the diffusion of new knowledge and technology from foreign investors to domestic firms and workers; lower prices and efficient resource allocation (Mkombe et al., 2020; Onifade et al., 2020; Siddharthan and Narayanan, 2020). On the one hand, empirical studies showed, in addition to productivity growth, host economies and employees working for foreign-owned enterprises benefit from the transfer and spillover of management skills, infrastructural development and access to international markets (Brincikova and Darmo, 2014; Mkombe et al., 2020; Siddharthan and Narayanan, 2020; Xu et al., 2021). Similarly, Xu et al. (2021) identified possible spillovers from FDI inflow, such as additional source of capital, elimination of balance of payments limitations, generation of competitive market conditions in the host economy and a growth in employment and wages as well as a host country's exports. Brincikova and Darmo (2014) pointed out the potential effect of FDIs in creating jobs through forward and backward linkages generating additional spillovers and adoption of best practices of work organization in the economy.

While most studies share the conclusion that FDIs are crucial for new job creation and reducing unemployment, job content of FDIs differs depending on investment type, amount and intensity. For example, Greenfield investments tend to outperform brownfield investments because a company in a host country is founded from scratch through building new production facilities, distribution hubs, offices and living spaces (Brincikova and Darmo, 2014; Çolak and Alakbarov, 2017; Harms and Méon, 2011; Mkombe et al., 2020). In contrast, in brownfield investments, an investing company purchases existing production facilities to roll out its operations and release a new product. However, empirical studies suggest FDIs are not as effective as theoretical evidence implies. Mkombe et al. (2020) and Zdravkovic et al. (2017)'s study reported a statistically insignificant impact of FDI on reducing unemployment in the Southern African Development Community region and 17 developing economies. Mkombe (2020) attributed the finding to brownfield investments whose job creation capacity are limited compared to greenfield investments. Çolak and Alakbarov (2017) argued that in the short run, brownfield investments may increase unemployment as they bring about a change in technology, equipment and management

systems. Other research studies did not find any statistically significant relationship between the FDI and unemployment in Russia (Sadikova *et al.*, 2017) and the Czech Republic, Hungary, Poland and Slovakia (Brincikova and Darmo, 2014).

A growing body of empirical literature emphasized the importance of host countries' absorptive capacity to reap benefits from FDI and spillover effects to absorb the knowledge and skills generated by foreign investors (Alfaro *et al.*, 2010; Estrin, 2017; Gattini and Baiashvili, 2020; Joo and Shawl, 2021; Siddharthan and Narayanan, 2020). These absorptive capacities include, but are not limited to, the development of financial markets (Alfaro *et al.*, 2010; Joo and Shawl, 2021; Olorogun *et al.*, 2020), technological diffusion (Mahembe and Odhiambo, 2014; Siddharthan and Narayanan, 2020), political and institutional quality (i.e. market entry regulations, rule of law, governance) (Estrin, 2017; Gattini and Baiashvili, 2020), market structure (Estrin, 2017), uncertainty (Nguyen and Lee, 2021), human capital and trade openness (Estrin, 2017). Therefore, the effectiveness of FDIs is determined by the host country's degree of development of key factors we discussed above.

Alfaro *et al.* (2010)'s study found economies with developed financial markets experienced twice as the high as growth rate observable in economies with poor financial markets given that the FDI inflow was the same. Similarly, an increase in the FDI or the productivity of foreign firms result in higher growth in financially developed economies than financially underdeveloped counterparts (Alfaro *et al.*, 2010; Joo and Shawl, 2021). In addition, Alfaro *et al.* (2010)'s review found that technology-led growth induced by the FDI require a "minimum threshold of human capital stock" to be met. A recent study of Gattini and Baiashvili (2020) found an inverse *U*-shaped relationship between FDI growth and economic growth. They noted that the impact increases as we move from low-income countries to middle-income countries, while it decreases for high-income countries.

As the relationship between FDIs and employment (or unemployment rate) varies across countries and period of study, in host countries the effect generated by FDIs may vary substantially depending on context due to heterogeneity of the structure of the economy and type of received FDIs (Mahjabeen and Ataur, 2016; Strat *et al.*, 2015). Given this heterogeneity in the employment effects of FDI, Mahjabeen and Ataur (2016) pointed out the necessity of country-specific econometric analysis to shed some light on the relationship to guide policymakers in adjusting the FDI policy to address unemployment problem.

2.1 Foreign direct investments and employment

A growing body of literature investigated the link between FDIs and their impact on the unemployment rate. However, most research studies reported contrasting views and findings. While Bakkalci and Argin's (2013) study (cited in Bayar and Sasmaz, 2017) and Mahjabeen *et al.* (2016)'s research studies argued a direct impact of FDIs on employment, other researchers (Aktar and Ozturk, 2009) could not find sufficient evidence to support the existence of causal relationships between unemployment and FDI inflows for the Turkish economy. Affecting primarily through the transfer of capital and technology, the FDI can affect productivity since businesses' employment decisions, which influences overall employment, are primarily determined by labor productivity (Mahjabeen and Ataur, 2016). Meanwhile, other empirical studies argue that the FDI is inclined to contribute to economic growth without creation of new jobs (Abiad *et al.*, 2007; Boeri and Garibaldi, 2006; Jude and Silaghi, 2016; Zdravkovic *et al.*, 2017).

There are a vast number of empirical studies reporting positive effects on employment resulted from FDI inflow. Few other studies (Bandick and Karpaty, 2011; Bayar and Sasmaz, 2017; Mahjabeen and Ataur, 2016; Strat *et al.*, 2015; Villa, 2010; Waldkirch *et al.*, 2009) found a positive employment effects of FDI in the context of various countries. Karlsson *et al.* (2009) and Ernst (2005)'s study of manufacturing firms found a positive impact of FDIs on

employment growth in China and Mexico, respectively. Similarly, in the context of 20 Caribbean countries, Craigwell's (2006) study found a positive impact of FDI inflow on the employment rate over the period 1990–2000 (Strat et al., 2015). Balcerzak and Zurek's (2011) study found a negative impact of FDI and unemployment over 1995–2009 (Zdravkovic et al., 2017). In the context of other countries, such as the USA (Ajaga and Nunnenkamp, 2008) and Fiji (Jayaraman and Singh, 2007), studies reported positive effects of inward FDIs on employment in the long run. The latter, however, stressed out a unidirectional long-run causality running from FDI towards employment in Fiji. A causal relationship running from FDI inflow towards unemployment was identified by Strat et al. (2015) in four out of thirteen countries, such as Hungary, Malta, Bulgaria and Estonia. This finding highlights the importance of FDI while designing policies to reduce unemployment rate (Strat et al., 2015).

However, Mahjabeen et al. (2016) found causality which runs from the unemployment towards the FDI inflows in Romania, Czech Republic and Slovakia. Reverse causality suggested by the author is plausible as higher unemployment causes higher inflows of FDIs, proving foreign investors look for locations where the availability of the workforce will not be a problem (Mahjabeen and Ataur, 2016).

In contrast, other research studies found FDI inflow to increase unemployment rate. Girma (2005) found FDI inflows negatively affect employment in the United Kingdom (Mahjabeen and Ataur, 2016). Mucuk and Demirsel's (2013) study of seven [1] developing countries over 1981–2009 reported that FDI inflow increased the unemployment rate in Argentina and Turkey, and due to negative effects of brownfield investments, the unemployment rate in Thailand decreased (Zdravkovic et al., 2017). Mahjabeen et al. (2016)'s study argued that an increase in the net inflow of FDI results in a significant growth in the unemployment rate in Bangladesh. Their study reported the net FDI inflow significantly increased GDP, though it deteriorated employment. In this case, job destruction caused by FDIs is greater than created jobs (Mahjabeen and Ataur, 2016). The reason is FDI inflows introduce foreign technology and knowledge spillovers increasing labor productivity (Benacek et al., 2000; Conyon et al., 2002; Girma, 2005; Jenkins, 2006; Siddharthan and Narayanan, 2020). In this case, FDI inflows do not result in job creation. As foreign enterprises take control of local companies, they introduce technological advancements and automation to increase firm performance that drive job destruction due to the replacement of labor with robots (Mahjabeen and Ataur, 2016; Wang et al., 2013).

Strat et al. (2015) identified a positive impact of FDI inflow on the unemployment rate through two channels. On the one hand, countries experiencing high unemployment rates can be favorable for foreign investors due to the abundance of labor supply and the likelihood of finding relatively cheaper workforce, i.e. lower labor costs. On the other hand, too high unemployment rates can signal to foreign investors an incidence of macroeconomic instability, which would not be appropriate destination for future investments (Strat et al., 2015).

The empirical studies we discussed above highlight remaining ambiguity in terms of the direction of employment effects resulted from FDI inflow. FDIs affect employment through various channels both positively and negatively. However, the direction of the net effect is primarily determined by the strength of positive and negative effects.

2.2 Access to finance and employment
Another important factor contributing to employment growth is access to finance, i.e. credits. Existing empirical literature argued the existence of the relationship between credit growth and macroeconomic indicators, particularly unemployment rate, in advanced and low-middle income economies (Jaume et al., 2021). Bui and Pham (2021)'s study of low-income and middle-income countries in Europe and Central Asia region, which are suffering from high unemployment rates, found financing constraints deteriorate employment growth in firms.

Generally, firms experiencing barriers to access to finance are uncertain about their ability to attract capital in the future, which decreases firms' demand for permanent workers (Garmaise, 2008), though firms suffering from difficulties with accessing finance tend to hire nonpermanent workers (Fernandes and Ferreira, 2017; le Queux, 2011).

Likewise, Jaume *et al.* (2021)'s study of credit shocks' employment effects in Mexico showed positive credit supply shocks increase employment growth. The authors observed that one standard deviation positive impulse to credit to the economy results in a 0.45% point increase in an employment growth. These empirical results suggest facilitating easy access to finance results in the employment growth. Since the ability of firms to create jobs is deteriorated by credit constraints, this impact is more harmful in low- and middle-income countries than in advanced economies.

Entrepreneurial efforts are highly dependent on access to financial resources and availability of financial services. Access to loans is essential because it allows entrepreneurs to expand their operations and increase the number of permanent employees, which results in the employment growth (Ayadi *et al.*, 2021; Rey-Martí *et al.*, 2016). In addition to positive externalities of financial inclusion in improving employment creation, it strengthens a country's institutional quality (Rey-Martí *et al.*, 2016). Favorable financial conditions are essential for the creation of high-profile businesses (Smirnyagin, 2020). Meanwhile, most self-employment companies rely on housing wealth, which serves as a direct or indirect (i.e. as a collateral) source of capital to grow a business (Henley, 2005). Surprisingly, investment income is not found to be a significant determinant of job creation because capital resources are often used as collateral, but not as direct financial source. However, entrepreneurial capital plays an important role in employment generation (Henley, 2005). This implies successful entrepreneurs are more likely to have had a self-employed parent who was associated with a higher probability of employing other workers. But in Uzbekistan, entrepreneurial capital and talent are scarce due to the institutional framework and state-led markets inherited from the former *Union of Soviet Socialist Republics* (USSR) despite reforms carried out throughout 1991–2021. In Uzbekistan, on average over 2000–2016, housing wealth constituted around 53% of total investments, which stress out access to finance was limited. This figure, however, changed to 38.8% over 2017–2020. Credit to the economy remains being an important source of financial resources for potential entrepreneurs not having neither entrepreneurial capital nor housing wealth.

Most empirical studies investigating the link between FDI, credit to the economy and unemployment rate overlooked the context of Central Asian countries. There are few research studies that shed some light on the context of Uzbekistan and the short-run employment effects of FDI inflow and credits have remained unclear. To fill the research gap and contribute to empirical literature, in this study, we evaluate whether a growth of credit to the economy and FDI inflow decreases unemployment rate in Uzbekistan.

3. Data and methodology

In the study, we use macroeconomic time series data from the Central Bank of Uzbekistan (Credit to the economy) and World Bank World Development Indicators (Unemployment rate, FDI inflow, GDP growth) over the period from 1990 to 2020. Due to data limitations and to avoid the shock introduced by COVID-19 pandemic, we have narrowed the sample down to time frame 2004–2019. To investigate the relationship between the FDI and unemployment rate, Balcerzak and Zurek (2011) suggested using vector autoregression (VAR) models coupled with additional VAR analysis tools, such as Granger causality, impulse response analysis to investigate the relationship between multiple covariates over time. In accordance with the other country-specific empirical studies, we employ the VAR to estimate the reaction of unemployment rate to credits and FDIs.

Let in Equation (1) representing a traditional ordinary least squares method, $UNEMP_t$ be the unemployment rate, $CREDIT_t$ be credit to the economy growth and FDI_t be growth in the FDI.

$$UNEMP_t = \beta_0 + \beta_1 CREDIT_t + \beta_2 FDI_t + u_t \tag{1}$$

As most macroeconomic variables tend to be nonstationary, we take first-order difference from our variables to account for nonstationarity of time series and ensure overall model stability.

$$UNEMP_t - UNEMP_{t-1} = \beta_0 + \beta_1(CREDIT_t - CREDIT_{t-1}) + \beta_2(FDI_t - FDI_{t-1}) + u_t \tag{2}$$

This can be expressed as follows:

$$\Delta UNEMP_t = \beta_0 + \beta_1 \Delta CREDIT_t + \beta_2 \Delta FDI_t + \epsilon_t \tag{3}$$

We represent the model in VAR form as we are taking past historical values, i.e. lags. We construct a multivariate VAR model with n lags, i.e. VAR (n). So, Equation (3) can be expressed as the following three equations:

$$\Delta UNEMP_t = \beta_{10} + \beta_{11}\Delta CREDIT_t + \ldots + \beta_{1j}\Delta CREDIT_{t-n} + \beta_{12}\Delta FDI_t + \ldots$$
$$+ \beta_{1j}\Delta FDI_{t-n} + \epsilon_{1t} \tag{4}$$

$$\Delta CREDIT_t = \beta_{20} + \beta_{11}\Delta UNEMP_t + \ldots + \beta_{1j}\Delta UNEMP_{t-n} + \beta_{12}\Delta FDI_t + \ldots$$
$$+ \beta_{1j}\Delta FDI_{t-n} + \epsilon_{2t} \tag{5}$$

$$\Delta FDI_t = \beta_{30} + \beta_{11}\Delta UNEMP_t + \ldots + \beta_{1j}\Delta UNEMP_{t-n} + \beta_{12}\Delta CREDIT_t + \ldots$$
$$+ \beta_{1j}\Delta CREDIT_{t-n} + \epsilon_{3t} \tag{6}$$

The model is composed of three dependent variables – $\Delta UNEMP_t$, $\Delta CREDIT_t$ and ΔFDI_t, which are endogenous over time.
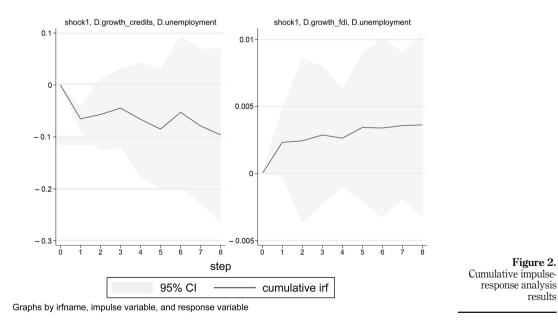
4. Results and discussion
Regression diagnostics tests show the degree of multicollinearity among covariates is at an appropriate level, i.e. less than 10. Similarly, White's test for heteroscedasticity showed the homoscedasticity of residuals. However, Dickey–Fuller test for stationarity indicated the nonstationarity of the time series. To ensure all our variables are stationary, we take the first difference of the variables.

As the results show, all VAR Equations (4)–(6) are overall significant at 1% significance level. VAR model stability tests indicate the stability of the model; all identified eigenvalues lie within the unit circle. Our VAR (2) model results (Tables 1 and 2) present both growth in credit to the economy and FDI Granger cause a change in the unemployment rate. While credit growth and unemployment rate are negatively correlated, FDI growth and unemployment rate are positively associated.

The impulse-response analysis results (Figure 2) suggest that 1%, ceteris paribus, increase in credit to the economy growth results in a decrease of −0.065 pp. in a year after the shock and cumulative reduction of 0.096 pp. in unemployment rate over eight years (Figure 2 – Left). This finding is consistent with Jaume *et al.* (2021)'s findings who reported one standard deviation positive credit shock increased employment growth by 0.45 pp. This implies credit to the Uzbek economy has been increasing employment.

In contrast, all else being equal, 1% increase in FDI growth raises the unemployment rate by 0.00364 pp. (Figure 2 – Right). On the one hand, such a discrepancy in the direction of the

Variables	D.unemployment	D.growth_credits	D.growth_fdi
LD.unemployment	1.324*** (0.263)	25.39*** (6.437)	−27.12 (32.31)
L2D.unemployment	−0.827** (0.389)	−31.83*** (9.515)	−60.33 (47.75)
LD.growth_credits	−0.0652*** (0.0115)	−1.284*** (0.282)	0.977 (1.415)
L2D.growth_credits	0.00863 (0.0254)	0.226 (0.622)	−10.86*** (3.121)
LD.growth_fdi	0.00233* (0.00129)	0.00741 (0.0315)	−0.785*** (0.158)
L2D.growth_fdi	−0.000659 (0.00149)	−0.0577 (0.0364)	−0.249 (0.183)
Constant	0.136 (0.150)	−3.035 (3.674)	−12.82 (18.44)
R squared	0.7944	0.7361	0.8783
Observations	13	13	13

Note(s): Standard errors are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 1.
VAR (2) model results

Equation	Excluded	χ^2	df	Prob > χ^2
D_unemployment	D.growth_credits	24.565	2	0.000
D_unemployment	D.growth_fdi	18.242	2	0.000
D_unemployment	ALL	24.865	4	0.000
D_growth_credits	D.unemployment	10.779	2	0.005
D_growth_credits	D.growth_fdi	7.9124	2	0.019
D_growth_credits	ALL	23.798	4	0.000
D_growth_fdi	D.unemployment	3.5063	2	0.173
D_growth_fdi	D.growth_credits	18.444	2	0.000
D_growth_fdi	ALL	22.921	4	0.000

Table 2.
Granger causality test
results

shock1, D.growth_credits, D.unemployment

shock1, D.growth_fdi, D.unemployment

step

95% CI — cumulative irf

Graphs by irfname, impulse variable, and response variable

Figure 2.
Cumulative impulse-
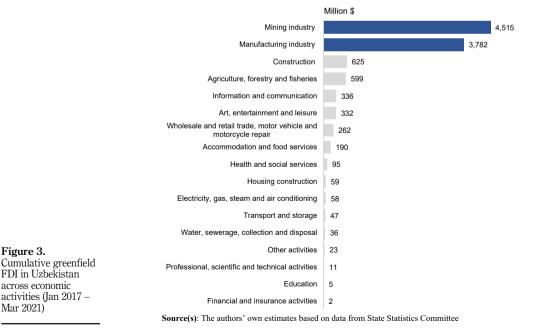response analysis
results

impact raises concerns about the efficiency of investments in stimulating output growth.
Given that the employment structure of the Uzbek labor market, roughly a third of employed
people work in agricultural sector, FDIs could be destructing low-productive agricultural jobs

and creating employment opportunities in industry. Therefore, the net employment effects of FDI could be negative. On the other hand, those investments could have been directed towards capital-intensive rather than productive and high labor absorbing sectors.

The structure of FDI inflows across economic activities (Figure 3) demonstrates most FDI funds were directed to extractive industries, which generated relatively negligible linkages to the rest of the economy. For example, mining and manufacturing industries make up 75% of total FDI. Meanwhile, the share of cross-border investments into infrastructure-related activities has been considerably low as the construction sector represents only 5.7% (equivalent to $625.2 M) of total greenfield FDI.

As the cumulative amount of FDIs is directed towards capital-intensive extractive sectors generating marginal spillovers to the rest of the economy, FDI inflows do not contribute to job creation. Usually, capital-intensive industries require primarily skilled workers and generate few jobs per dollar spent (Jenkins, 2006; Mahjabeen and Ataur, 2016). Our findings confirm Jude and Silaghi (2016)'s results on the negative impact of FDIs on employment in the short run, although marginal effects of the FDI alone on employment may not be a sufficient instrument to boost employment (Jude and Silaghi, 2016; Zdravkovic et al., 2017). Likewise, the results corroborate other empirical findings (Bayar, 2014, 2017) on positive impact of FDIs on the unemployment rate. Other studies argued that FDI growth positively affected employment, contributing to a decrease in the unemployment rate (Balcerzak and Zurek, 2011; Craigwell, 2006; Richards and Schaefer, 2016), which does not align with our findings. Our results are different than Balcerzak and Zurek (2011)'s results on the short-run negative impact of FDI inflow on the unemployment rate using the same VAR methodology. However, our results partially confirm Inekwe (2013)'s empirical results on the negative impact of FDI on employment in the service sector compared to the positive effects on employment in the manufacturing sector in the Nigerian context. They attribute such finding to the fact that

Cumulative FDI inflow from Jan 2017–Mar 2021

Million $

Mining industry	4,515
Manufacturing industry	3,782
Construction	625
Agriculture, forestry and fisheries	599
Information and communication	336
Art, entertainment and leisure	332
Wholesale and retail trade, motor vehicle and motorcycle repair	262
Accommodation and food services	190
Health and social services	95
Housing construction	59
Electricity, gas, steam and air conditioning	58
Transport and storage	47
Water, sewerage, collection and disposal	36
Other activities	23
Professional, scientific and technical activities	11
Education	5
Financial and insurance activities	2

Figure 3.
Cumulative greenfield FDI in Uzbekistan across economic activities (Jan 2017 – Mar 2021)

Source(s): The authors' own estimates based on data from State Statistics Committee

developing economies often experience low level of human capital, while FDIs usually come with its own skilled employees for strategic positions in the private sector. Furthermore, since jobs created by foreign employers require relatively skilled workers, a developing host country, which is composed of low-skilled workers in a labor market, new job creation may not necessarily reduce unemployment (Mahjabeen and Ataur, 2016). As workers with low skills are abundant in developing countries, Inekwe (2013) and Mehta (2016)'s results implied the positive effect of FDI inflow into the manufacturing sector on employment rate.

Another reason why FDI inflow to Uzbekistan may not positively contribute to employment growth can be related to its absorptive capacity to increase the level of productivity to the degree of those foreign firms, large technological gaps, weak incentives and lack of human capital resulted from the deficit of technical training as well as the shortage of essential skills and effective managing practices (Estrin, 2017). As FDI inflows are absorbed through the financial sector (Olorogun et al., 2020), low level of financial development as well as the high dominance of state-owned banks in Uzbekistan could be inhibiting from taking advantage of FDIs. In addition to FDI absorptive capacity, as argued by Craigwell (2006) and Udi et al. (2020), healthy macroeconomic environment plays a major role in using FDI inflows efficiently. In the context of Uzbekistan, two necessary conditions – FDI absorptive capacity and macroeconomic conditions – are not fully satisfied starting from the degree of development of financial markets to macroeconomic instability as shown by the incidence of double-digit inflation rate and high unemployment.

5. Conclusion

In this study, we investigated the relationship between credit to the economy, FDI and the unemployment rate in Uzbekistan and contributed to the empirical literature with evidence from Uzbekistan. We found both growth in credit to the economy and FDI Granger cause a change in the unemployment rate. The results show that credit growth affects the unemployment rate negatively, while FDI growth positively affects the unemployment rate, which could have been attributed to Uzbekistan's weak absorptive capacity of FDIs and local macroeconomic conditions.

A major limitation of the study is due to the lack of disaggregated industry-level data on the FDI and its types, greenfield and brownfield, we used aggregated data on FDI inflow that do not allow to consider the industry-specific employment effects of FDIs for Uzbekistan. Future research for Uzbekistan in this domain should focus on the impact of FDI inflows to employment using a micro-level perspective and industry-specific evidence.

6. Policy implications

From a policy perspective, given that the working-age population has been growing, it is important for the Uzbek Government to direct FDIs to productive and economic sectors with high labor-absorptive capacity, such as financial and professional services, opportunities in healthcare and biomedicine, creative industries and media, software sector.

These measures have to be accompanied by the liberalization of the market of educational services to meet the growing demand to high-skilled professionals. However, it has to be admitted FDI is not a panacea for unemployment. To take the best advantage of FDI in stimulating economic growth and improving employment outcomes, FDI absorptive capacity should be strengthened. Enhancing Uzbekistan's absorptive capacity requires growth-enhancing structural reforms, particularly developing financial markets and inclusivity. Development of finance and private sector involvement can speed up industrialization and free government to invest in other important sectors, namely education, healthcare and social protection system. These policy options require supportive and flexible macroeconomic

policies fostering productive investments, entrepreneurship and enhance postpandemic economic recovery.

Note

1. Argentina, Chile, Colombia, Philippines, Thailand, Turkey and Uruguay.

References

Abiad, A., Mody, A., Schadler, S. and Leigh, D. (2007), *Growth in the Central and Eastern European Countries of the European Union*, International Monetary Fund, Washington, District of Columbia.

Ajaga, E. and Nunnenkamp, P. (2008), "Inward FDI, value added and employment in US states: a panel cointegration approach", Kiel Working Papers No. 1420, Kiel Institute for the World Economy, Kiel.

Aktar, I. and Ozturk, L. (2009), "Can unemployment be cured by economic growth and foreign direct investment in Turkey?", *International Research Journal of Finance and Economics*, Vol. 1 No. 27, pp. 203-211.

Alfaro, L., Chanda, A., Kalemli-Ozcan, S. and Sayek, S. (2010), "Does foreign direct investment promote growth? Exploring the role of financial markets on linkages", *Journal of Development Economics*, Vol. 91 No. 2, pp. 242-256, doi: 10.1016/j.jdeveco.2009.09.004.

Ayadi, R., ben Naceur, S. and Goaied, M. (2021), "Financial development and employment: new panel evidence", *Economic Notes*, Vol. 50 No. 2, pp. 1-19.

Balcerzak, A. and Zurek, M. (2011), "Foreign direct investment and unemployment: VAR analysis for Poland in the years 1995–2009", *European Research Studies Journal*, Vol. XIV No. 1, pp. 3-14.

Bandick, R. and Karpaty, P. (2011), "Employment effects of foreign acquisition", *International Review of Economics and Finance*, Vol. 20 No. 2, pp. 211-224.

Bayar, Y. (2014), "Effects of economic growth, export and foreign direct investment inflows on unemployment in Turkey", *Investment Management and Financial Innovations*, Vol. 11, pp. 20-27.

Bayar, Y. and Sasmaz, M.U. (2017), "Impact of foreign direct investments on unemployment in emerging market economies: a co-integration analysis", *International Journal of Business and Economic Sciences Applied Research*, Vol. 10 No. 3, pp. 90-96.

Benacek, V., Gronicki, M., Holland, D. and Sass, M. (2000), "The determinants and impact of foreign direct investment in Central and Eastern Europe: a comparison of survey and econometric evidence", *Transnational Corporations*, Vol. 9 No. 3, pp. 163-212.

Boeri, T. and Garibaldi, P. (2006), "Are labour markets in the new member states sufficiently flexible for EMU?", *Journal of Banking and Finance*, Vol. 30 No. 5, pp. 1393-1407.

Brincikova, Z. and Darmo, L. (2014), "The impact of FDI inflow on employment in V4 countries", *European Scientific Journal*, Vol. 10 No. 7, pp. 245-252.

Bui, A.T. and Pham, T.P. (2021), "Financial and labour obstacles and firm employment: evidence from Europe and Central Asia firms", *Sustainability*, Vol. 13 No. 15, pp. 1-13.

Çolak, O. and Alakbarov, N. (2017), "Does foreign direct investments contribute to employment? Empirical approach for the commonwealth of independent states", *Bilig*, No. 83, pp. 147-169.

Conyon, M.J., Girma, S., Thompson, S. and Wright, P.W. (2002), "The impact of mergers and acquisitions on company employment in the United Kingdom", *European Economic Review*, Vol. 46 No. 1, pp. 31-49.

Craigwell, R. (2006), "Foreign direct investment and employment in the English- and Dutch-speaking Caribbean", available at: https://www.ilo.org/wcmsp5/groups/public/—americas/—ro-lima/—sro-port_of_spain/documents/meetingdocument/wcms_306245.pdf (accessed 20 July 2021).

Ek, A. (2007), "The impact of FDI on economic growth: the case of China", available at: http://urn.kb.se/resolve?urn=urn:nbn:se:hj:diva-1038 (accessed 20 July 2021).

Ernst, C. (2005), *The FDI – Employment Link in a Globalizing World: The Case of Argentina, Brazil and Mexico*, International Labour Organization, available at: https://www.ilo.org/wcmsp5/groups/public/—ed_emp/—emp_elm/documents/publication/wcms_114029.pdf.

Estrin, S. (2017), *Foreign Direct Investment and Employment in Transition Economies*, IZA World of Labor, pp. 1-10, available at: https://wol.iza.org/articles/foreign-direct-investment-and-employment-in-transition-economies/long.

Fernandes, A.P. and Ferreira, P. (2017), "Financing constraints and fixed-term employment: evidence from the 2008–9 financial crisis", *European Economic Review*, Vol. 92, pp. 215-238.

Garmaise, M.J. (2008), "Production in entrepreneurial firms: the effects of financial constraints on labor and capital", *Review of Financial Studies*, Vol. 21 No. 2, pp. 543-577.

Gattini, L. and Baiashvili, T. (2020), "Impact of FDI on economic growth: the role of country income levels and institutional strength", Working paper No. 2, European Investment Bank.

Girma, S. (2005), "Safeguarding jobs? Acquisition FDI and employment dynamics in U.K. manufacturing", *Review of World Economics*, Vol. 141 No. 1, pp. 165-178.

Hansen, H. and Rand, J. (2006), "On the causal links between FDI and growth in developing countries", *The World Economy*, Vol. 29 No. 1, pp. 21-41.

Harms, P. and Méon, P.G. (2011), "An FDI is an FDI is an FDI? The growth effects of Greenfield investment and mergers and acquisitions in developing countries", Swiss National Bank Working papers No. 11.10, Swiss National Bank, Study Center Gerzensee.

Henley, A. (2005), "Job creation by the self-employed: the roles of entrepreneurial and financial capital", *Small Business Economics*, Vol. 25 No. 2, pp. 1-17.

Inekwe, J.N. (2013), "FDI, employment and economic growth in Nigeria", *African Development Review*, Vol. 25 No. 4, pp. 421-433.

Jaume, D., Gutierrez, E. and Tobal, M. (2021), "Do credit supply shocks affect employment in middle-income countries?", CEDLAS Working Papers No. 0277, CEDLAS, Universidad Nacional de La Plata.

Jayaraman, T. and Singh, B. (2007), "Foreign direct investment and employment creation in Pacific island countries: an empirical study of Fiji", ARTNeT Working Paper Series No. 35, Asia-Pacific Research and Training Network on Trade (ARTNeT), Bangkok.

Jenkins, R. (2006), "Globalization, FDI and employment in Viet Nam", *Transnational Corporations*, Vol. 15 No. 15, pp. 115-142.

Joo, B.A. and Shawl, S. (2021), "Examining the FDI–growth nexus in BRICS: panel data evidence", *The Indian Economic Journal*, Vol. 69 No. 1, pp. 1-15.

Jude, C. and Silaghi, M.I.P. (2016), "Employment effects of foreign direct investment: new evidence from Central and Eastern European countries", *International Economics*, Vol. 145, pp. 32-49.

Karlsson, S., Lundin, N., Sjöholm, F. and He, P. (2009), "Foreign firms and Chinese employment", *World Economy*, Vol. 32 No. 1, pp. 178-201.

Lagarde, C. (2019), "Uzbekistan's reforms: a new equation for inclusive growth and cooperation", *International Monetary Fund*, Vol. 17, available at: https://www.imf.org/en/News/Articles/2019/05/17/sp051719-lagarde-uzbekistan-reforms-a-new-equation-for-inclusive-growth-and-cooperation (accessed 8 January 2021).

le Queux, S. (2011), "Industrial democracy, partnership and decent work in response to the global financial crisis – 7th Asian Congress of the International Labour and Employment Relations Association, 20–23 September 2010", *Transfer: European Review of Labour and Research*, Vol. 17 No. 1, pp. 127-129.

Mahembe, E. and Odhiambo, N. (2014), "Foreign direct investment and economic growth: a theoretical framework", *Journal of Governance and Regulation*, Vol. 3 No. 2, pp. 1-6.

Mahjabeen, M. and Ataur, R. (2016), "Effects of foreign direct investment on Bangladeshi labor market", *World Review of Business Research*, Vol. 6 No. 3, pp. 46-60.

Mehta, P. (2016), "Impact of foreign direct investment on employment in Africa", available at: https://www.semanticscholar.org/paper/Impact-of-foreign-direct-investment-on-employment-Mehta/d63c2bef5db1c837793b06ee7564875348577772 (accessed 25 August 2021).

Mkombe, D., Tufa, A.H., Alene, A.D., Manda, J., Feleke, S., Abdoulaye, T. and Manyong, V. (2020), "The effects of foreign direct investment on youth unemployment in the Southern African Development Community", *Development Southern Africa*, Vol. 38 No. 6, pp. 863-878.

Nguyen, C.P. and Lee, G.S. (2021), "Uncertainty, financial development, and FDI inflows: global evidence", *Economic Modelling*, Vol. 99, pp. 1-6.

Npg, S. and Haiyun, L. (2017), "The impact of FDI on the economic growth of Sri Lanka: an ARDL approach to co-integration", *International Journal of Innovation and Economic Development*, Vol. 3 No. 1, pp. 70-82.

Olorogun, L.A., Salami, M.A. and Bekun, F.V. (2020), "Revisiting the nexus between FDI, financial development and economic growth: empirical evidence from Nigeria", *Journal of Public Affairs*, e2561, doi: 10.1002/pa.2561.

Onifade, S.T., Ay, A., Asongu, S. and Bekun, F.V. (2020), "Revisiting the trade and unemployment nexus: empirical evidence from the Nigerian economy", *Journal of Public Affairs*, Vol. 20 No. 3, pp. 1-8.

Rey-Martí, A., Ribeiro-Soriano, D. and Sánchez-García, J.L. (2016), "Giving back to society: job creation through social entrepreneurship", *Journal of Business Research*, Vol. 69 No. 6, pp. 2067-2072.

Richards, J. and Schaefer, E. (2016), "Jobs attributable to foreign direct investment in the United States", available at: https://legacy.trade.gov/mas/ian/build/groups/public/@tg_ian/documents/webcontent/tg_ian_005496.pdf (accessed 24 June 2021).

Sadikova, M., Faisal, F. and Resatoglu, N.G. (2017), "Influence of energy use, foreign direct investment and population growth on unemployment for Russian Federation", *Procedia Computer Science*, Vol. 120, pp. 706-711.

Siddharthan, N.S. and Narayanan, K. (Eds.) (2020), *FDI, Technology and Innovation*, Springer Singapore, Singapore, doi: 10.1007/978-981-15-3611-3.

Smirnyagin, V. (2020), "Compositional nature of firm growth and aggregate fluctuations", Bank of England Working Paper No. 846, Bank of England, pp. 1-38, doi: 10.2139/ssrn.3520657.

Sokang, K. (2018), "The impact of foreign direct investment on the economic growth in Cambodia: empirical evidence", *International Journal of Innovation and Economic Development*, Vol. 4 No. 5, pp. 31-38.

Strat, V.A., Davidescu (Alexandru), A. and Paul (Vass), A.M. (2015), "FDI and the unemployment – a causality analysis for the latest EU members", *Procedia Economics and Finance*, Vol. 23, pp. 635-643.

Suyunov, A. (2021), "Inflation, economic growth, and credits to the economy: evidence from Uzbekistan", Working paper, Ministry of Economic Development and Poverty Reduction, Tashkent.

Udi, J., Bekun, F.V. and Adedoyin, F.F. (2020), "Modeling the nexus between coal consumption, FDI inflow and economic expansion: does industrialization matter in South Africa?", *Environmental Science and Pollution Research*, Vol. 27 No. 10, pp. 10553-10564.

UNCTAD (2016), "Target 17.13: global macroeconomic stability", available at: https://stats.unctad.org/Dgff2016/partnership/goal17/target_17_13.html (accessed 1 March 2021).

Villa, S. (2010), "Exploring the linkages between investment and employment in Moldova: a time-series analysis", Employment Working Paper No. 52, International Labour Organization, Geneva, available at: https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_161397/lang–en/index.htm (accessed 22 June 2021).

Waldkirch, A., Nunnenkamp, P. and Alatorre Bremont, J.E. (2009), "Employment effects of FDI in Mexico's non-maquiladora manufacturing", *The Journal of Development Studies*, Vol. 45 No. 7, pp. 1165-1183.

Wang, D.T., Gu, F.F., Tse, D.K. and Yim, C.K.B. (2013), "When does FDI matter? The roles of local institutions and ethnic origins of FDI", *International Business Review*, Vol. 22 No. 2, pp. 450-465.

Xu, C., Han, M., Dossou, T.A.M. and Bekun, F.V. (2021), "Trade openness, FDI, and income inequality: evidence from sub-Saharan Africa", *African Development Review*, Vol. 33 No. 1, pp. 193-203.

Younsi, M., Bechtini, M. and Khemili, H. (2021), "The effects of foreign aid, foreign direct investment and domestic investment on economic growth in African countries: nonlinearities and complementarities", *African Development Review*, Vol. 33 No. 1, pp. 55-66.

Zdravkovic, A., Djukic, M. and Bradic-Martinovic, A. (2017), "Impact of FDI on unemployment in transition countries: panel cointegration approach", *Industrija*, Vol. 45 No. 1, doi: 10.5937/industrija45-13548.

Corresponding author
Alisher Suyunov can be contacted at: alisher.c@ya.ru