Does Trade Integration Reorient Income Inequality? Evidence from the Post-Soviet Countries

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ABSTRACT

The transition of the post-Soviet countries from the command to the market economic system cropped many social classes through a skew distribution of economic prosperity. We investigated the role of trade integration to explain income inequality for twelve post-Soviet countries for the years 1991-2019. Given the considerable heterogeneity across the countries, time, and reverse causality, we apply a novel method, namely Quantiles via Moments approach. Our empirical findings revealed that trade integration reduced income inequality under all quantiles monotonically by promoting market competitiveness considering different economic circumstances. Precisely, the impact of trade integration was more profound at the lower quantiles while it is moderate at the middle quantiles. We also observed that economic growth and income inequality followed an inverted U-shaped relation. Besides, the reduction in government spending widened the gap between rich and poor implying an increase in income inequality. Our empirical findings reinforce the importance of trade integration to reduce income disparity by enhancing competitive market internationally. Moreover, efficient government spending and tax policy should be designed in a way that can augment the income of the middle and lower classes.

Keywords: Trade Integration, Income Inequality, Kuznets Curve, Quantiles via Moments, Post-Soviet countries

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INTRODUCTION

Income inequality is one of the most significant challenges in many countries in the free market economic paradigm, which triggers social fragmentation. Prior studies overwhelmingly stress examining the linkage between financial factors (Davies et al., 2017; Khan et al., 2022), and institutional elements (Acemoglu et al., 2015; Gradstein & Milanovic, 2004) of income inequality. In the globalized world, trade integration appears to be one of the important factors that can re-orient income inequality, which has been overlooked in the empirical studies. The effectiveness of trade integration in reducing income inequality in developed and developing countries has been analyzed by many researchers. In this study, however, the post-Soviet countries were examined due to their unique characteristics, which include weak institutions and similar inequality structures, as well as their primarily resource-rich economies. In other words, the role of trade can be more complex in the case of the post-Soviet economies due to their abrupt adoption of the market economy. Hence, we were motivated to scrutinize the role of trade integration in re-orienting income inequality in the context of the post-Soviet economies.

Trade integration can create many opportunities for the local market as well as it may hurt some sectors. How trade integration affects the structure of skilled labor sectors and unskilled labor sectors is closely related to income inequality as it changes wages in these sectors. Thus, which segments of society grab the opportunity of trade integration and which segments suffer that have been plausible research questions in academia. For instance, an augmentation of income inequality can be explained through movements of capital and FDI. The increased trade integration, capital movement in developing countries, and diversification finance (Nissanke & Thorbecke, 2010), result in global economic instabilities. These instabilities cause income re-distribution. Furthermore, the fact that FDI may fail to provide advantages of potential knowledge and management abilities transfer to the hosting country implies that the hypothesis that high trade integration positively affects income distribution through foreign direct investments is not valid for every country. However, other components of globalization besides trade integration can have more influence on increasing income inequality. For instance, the fact that technological diffusion provides more advantages to capital than unskilled labor hurts redistribution. In addition,

international migration movements can increase income inequality by changing the balance of skilled and unskilled labor within the countries. Therefore, examining the effect of economic globalization on income inequality by dividing it into different sub-categories will provide more effective results. This study examined the impact of trade integration, one of these sub-categories of globalization, on income inequality.

The motivation for this study are several. First, technological advancement, market liberalization, and trade partnerships with the rest of the world drive the post-Soviet economies considerably. Nevertheless, the statistics showed that the advantages of rising economic growth have failed to reach all segments of society. For instance, Figure 1 shows the income inequality Gini in our sample countries for 1996–2019. According to Figure 1, the income Gini coefficient fluctuated throughout the sample year. Figure 2 illustrates the income share of different segments of the population. In some countries such as Georgia, Russian Federation, Turkmenistan, and Uzbekistan, the income share of the top 1% of the population was higher than the income share of the bottom 50%. Moreover, in all countries, the income of the richest 10% was higher than the income of the bottom 50% percent.
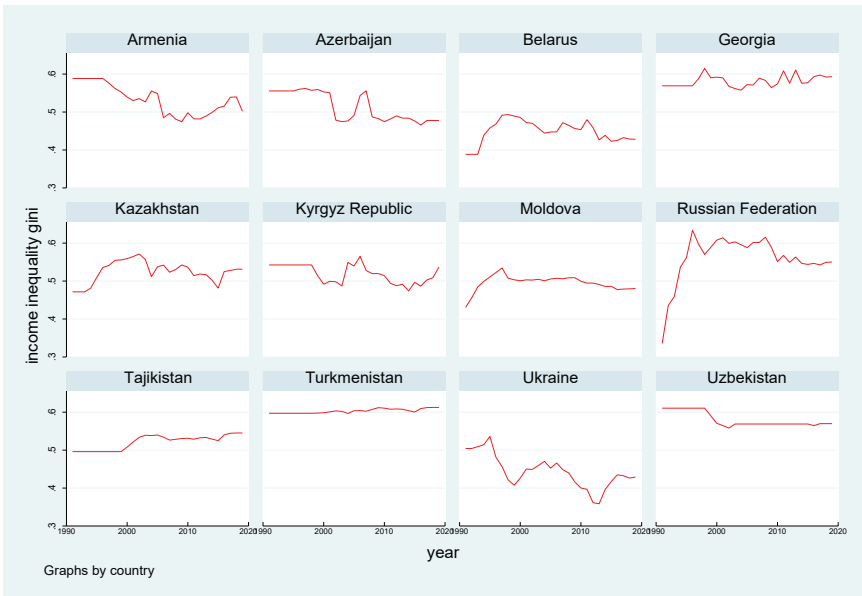

Figure 1: Income Inequality Gini in 12 Post-Soviet Countries
Source: World Inequality Database

However, our concern regarding the impact of trade integration on these observed income inequalities has not been explained clearly by the empirical literature for our sample countries. The related literature focuses on institutional and financial factors that affect income distribution. Although some studies examined the impacts of globalization on income inequality, these investigations included the technological or financial elements of globalization.
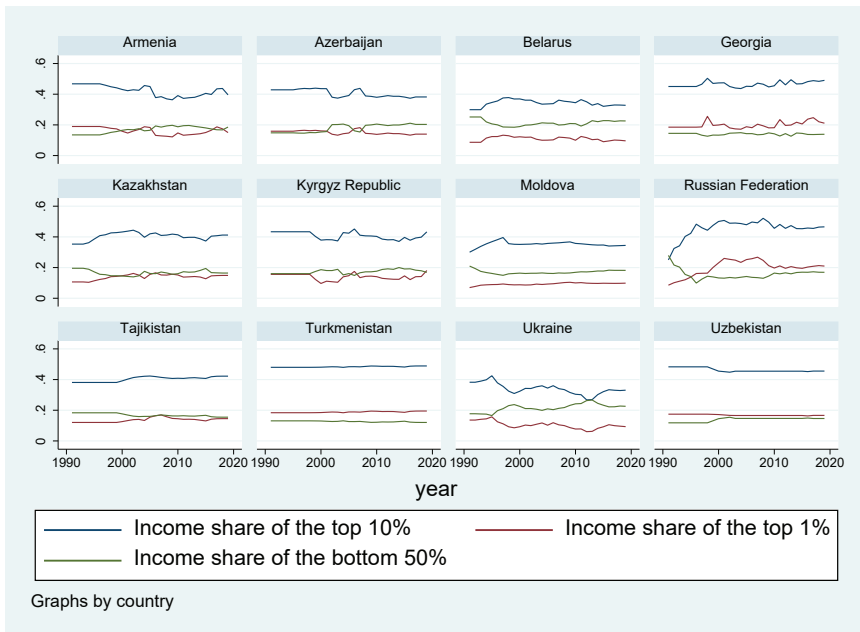

**Figure 2: Income Share of the Top 1%, 10%,
and the Bottom 50% in 12 Post-Soviet Countries**
Source: World Inequality Database

Second, the post-Soviet Union states that we considered have experienced a sudden change from a command to a market economic system, resulting in new procedures for allocating resources, property law, and institutional changes. A market economy also altered the social class structure because there was less competitiveness and weak institutions inherited from the command economy. To comprehend the causes of income disparity, it is significant to scrutinize the process of economic transition in terms of internationalization. Therefore, our current study posed a plausible research question to observe and investigate the effect of trade integration

on income inequality from the beginning of the market economy to the present. We were motivated to perform this study since all countries had the same starting point, which allowed a real chance to comprehend the genuine impact of trade integration and economic growth on inequality.

Unlike prior studies, our method had three potential advantages. First, both across countries and throughout time, our variables hada significant degree of heterogeneity. Conventional panel data-based methods frequently failed to inadequately capture the variation over time and country heterogeneity. Second, the Panel Quantile Regression via Moments technique created by Machado & Santos Silva, (2019) enabled the use of techniques that were only appropriate for the estimate of conditional means, including separating cross-sectional impacts in panel data models, while revealing how the regressors influenced the overall conditional distribution. Third, our approach produced estimates of the regression quantiles which considerably simplified the estimation of complicated models.

Our empirical research provided several new perspectives. First, trade integration had a significant location and scale influence. By incorporating the role of location and scale effect our slope parameters of trade integration on income disparity were robust under all quantiles in our sample countries. Nonetheless, the level of influence varies among quantiles. For instance, the effect of trade integration was stronger at the lowest quantile and moderate in the middle. At the top quantiles, the level of trade integration was less. Second, the Kuznets hypothesis was supported by our empirical findings, which showed an inverted U-shaped link between economic growth and income disparity. Our findings thus conclusively showed that economic growth in the sample countries after the threshold point contributed to a decline in income disparity. Third, regardless of the quantiles, less government spending made income disparity worse.

The contribution of our study to the literature is multi-fold. First, to our knowledge, this is the first study to analyze the impact of trade integration, economic growth, and government spending on income inequality for 12 post-Soviet countries in the empirical setup by using the Quantiles via Moments approach. Second, our approach allowed us to estimate the regression quantiles, which is comprehensive in understanding the gravity of trade integration, economic growth, and government spending across

different quantiles. Third, our investigation provided several new insights regarding the impacts of trade integration and government spending on income inequality across the quantiles. For example, the magnitude of the impact of both trade integration and reduction in government spending on income inequality decreased from the lowest to the highest quantiles. Our empirical results revealed several precise and practical policy implications for our sample economies.

Following is an outline of how the remaining parts of this paper are organized. In Section 2, we provide a comprehensive literature review. Data, Model, and Methodology are presented in Section 3. Sections 4 and 5 contain the main results and conclusion of the study, respectively.

LITERATURE REVIEW

Trade Integration - Inequality

The widely recognized Stolper-Samuelson Theorem, which states that greater international trade integration decreases income disparity in developing economies while increasing inequality in developed economies, is the theoretical underpinning of an important portion of the literature currently in existence that examines the effects of trade globalization on income inequality. According to this Theory, trade liberalization may result in a rise in the prices of unskilled labor-intensive products and a rise in the factor returns (i.e. wages) associated with these products, but at the same time, it is likely to lead to a decrease in skilled labor wages as skilled labor-intensive products are imported. Therefore, developing and transition economies may benefit from trade integration by reducing income inequality.

Researchers have focused on how rising market participation in the fields of international trade and finance has impacted income disparity (de Haan & Sturm, 2017; Harrison et al., 2011; Nissanke & Thorbecke, 2010). However, there is no consensus on the relationship between trade integration and income disparity. Some studies reported a positive effect of trade globalization on income inequality (Cassette et al., 2012; Felbermayr, 2005; Lu & Cai, 2011; Rodríguez-Pose, 2012). On the other hand, some investigations in the literature covered export-import structure, foreign

aid, and trade structure to explain the role of trade globalization in income disparity. For example, (Silva & Leichenko, 2004) examined the role of trade integration in inequality across regions of the US (Silva & Leichenko, 2004). The findings of this study revealed that trade influences income inequality via import and export prices. (Ali & Isse, 2008)scrutinized the link between foreign aid and trade on income (Ali & Isse, 2008). The findings of the research indicated that foreign aid and trade strongly affect GDP per worker. Moreover, international trade can enhance the performance of the economy. (Meschi & Vivarelli, 2009)investigated the effects of trade on income disparity (Meschi & Vivarelli, 2009). The results of this study implied that trade with developed countries negatively affects income inequality in developing countries. The study by (Demir et al., 2012)examined the relationship between trade, employment, and income inequality (Demir et al., 2012). In the study, it was found that there is a positive correlation between trade structure and employment, which means that a higher proportion of manufactured exports will result in higher income disparities. (Hepenstrick & Tarasov, 2015)scrutinized the role of trade openness in income disparities (Hepenstrick & Tarasov, 2015). The study reported that if the economies are fully symmetric, there would be no inequality via trade openness. However, in a world where economies differ in endowment, population size, and changing trade costs, income inequality would rise because of trade. The result of this study was significant since the components of globalization (e.g. ICT diffusion) affect the quality of economic growth (Khusainov et al., 2022) and distribution processes.

On the contrary, some studies have shown that trade globalization may have a negative effect on income inequality (Silva, 2007), while some studies suggested that trade globalization has no impact on income disparity (Jaumotte et al., 2013). Furthermore, several investigations emphasized the zone of the world economy to scrutinize the role of trade in income disparity. For instance, (Babones & Zhang, 2008)analyzed how trade affects income disparity by categorizing countries as semi-periphery, periphery, and core (Babones & Zhang, 2008). The results of the investigation revealed that the link between inequality and trade is continually conditioned on the zone of the world economy over the period 1980-2000.

Furthermore, several studies scrutinized the role of trade openness in explaining poverty while others focus on trade, financial, and technological

globalization. For instance, Winters et al., (2004)analyzed the trade liberalization-poverty linkage (Winters et al., 2004). The findings of the study revealed that there is no clear result regarding the link between trade openness and poverty. In addition, (Bujhari & Munir, 2016)reported that trade and technological globalization decreases income inequality whereas financial globalization contributes to increasing income inequality (Bujhari & Munir, 2016).

Kuznets Curve

A classic example of such a theory was introduced and popularized by Kuznets, (1955) who proposed an inverted-U relationship between income level and inequality, which can be described as an explanation for income inequality and which has been used ever since. Based on Kuznets's Hypothesis, income inequality increases at an early stage in the development process and then gradually declines at a later stage as the development process. This Theory has been empirically examined in a large number of studies. Campano & Salvatorc, (1988) provide strong evidence supporting the Kuznets Curve Hypothesis even when the top 20% of the population was excluded (Campano & Salvatorc, 1988). In addition, other studies have demonstrated that the Kuznets Hypothesis is valid for a number of countries and regions around the world (Thomas, 2015; Wu & Yao, 2015). Although several other studies support the Kuznets Theory, there is also some empirical evidence that contradicts it. Even though Papanek & Kyn, (1986) proved that the political system negatively impacts income equality, they also demonstrate that economic growth has no correlation with income equality (Papanek & Kyn, 1986). As described by Roine et al., (2009)from 15 developed countries they found that income shares of the top percentile grew at the expense of the income shares of the remaining top deciles as a result of the increases in top percentile income shares (Roine et al., 2009). There is no conclusive evidence that economic growth has an important effect on income disparity in Asian countries as reported (Perera & Lee, 2013,Perera & Lee, 2013).

On the other hand, it has been demonstrated that in transition economies, income inequality and economic growth are not linearly related, as shown by Cevik and Correa-Caro, which confirmed the Kuznet'sHypothesis concerning transition economies (Cevik & Correa-

Caro, 2020). Nevertheless, Aghion and Commander (Aghion & Commander, 1999) reported that the policies used have been shown to result in a rapid rise in inequality in Central Europe. There is a tendency for inequality to decrease from its peak in selected Central European countries, which supported the Kuznets Hypothesis; however, the Kuznets Hypothesis was rejected in Russia and the post-Soviet Union.

Government Expenditure - Inequality

There is no consensus on how government expenditure influences inequality, but according to the existing literature, government expenditure is one of the most significant components expected to impact inequality. A study by Calderón & Servén, (2004)found that government spending on infrastructure is significantly associated with economic growth and that this leads to an important reduction in inequality (Calderón & Servén, 2004). In this study, they examined Latin American countries with the highest levels of disparity. The result was confirmed by Chatterjee & Turnovsky, (2012) that government expenditure may result in short-term reductions in inequality while increasing long-term inequality (Chatterjee & Turnovsky, 2012). The study by Blejer & Guerrero, (1988a)implied that the higher levels of inequality in the Philippines are largely attributed to government expenditures (Blejer & Guerrero, 1988b). According to Maestri & Roventini, (2012), the level of government expenditure in certain European countries is also associated with a greater degree of income disparity, so government expenditure is also linked to income disparity in those countries (Maestri & Roventini, 2012).

Institutions – Inequality

In theory, it appears that the policymaking process can be complex when a society is unequal in terms of economy and politics (Torsten, Persson & Tabellini, 1994). Even though several studies imply controversial outcomes, unequal societies have some problems coordinating macroeconomic policies and competing for globalization as well. The democratic process is found to enhance freedom, the ability to maintain stability in politics, as well as to maintain the openness of society as a result of these studies. A variety of studies report that democracy is conducive to civil rights, and a stable political system. These studies indicate that democracy helps to boost the

enforcement of property rights and contracts and to improve economic growth, as well as income distribution (Clague et al., 1996; Minier, 1998)

Several researchers stress that the economic development process of a country over the long run depends on the quality of institutions (Acemoglu & Robinson, 2012). Specifically, Hall & Jones, (1999)report significant differences in the residual Solow value between the countries in their research, it does not occur at the same level across countries (Hall & Jones, 1999). In other words, they examined how differences in growth in capital, increasing productivity, and production per worker result from disparities in government policies and institutions, which they refer to as social infrastructure, resulting in differences in growth in capital and productivity. The study by Acemoglu et al., (2002)investigated why some countries colonized by European powers over the last 500 years are now considered to be relatively poor despite their relative wealth in 1500 (Acemoglu et al., 2002). This reversal in economic fortune can be measured based on the patterns of urbanization patterns and the density of the population, which are both proxy indicators of economic prosperity. They argue that the reversal is the result of changes in European colonialism-related institutions. These societies appear to have experienced an institutional reversal as a result of European intervention, meaning Europeans were more likely to establish institutions that encouraged investment in previously poor regions as a result of European intervention. Tan, (2010)showed that institutions have an important role in explaining the cross-country divergence between countries (Tan, 2010). There is evidence, according to these findings, that high fractionalization by the ethnic group can have a negative effect on growth as a result of the effects of high fractionalization by ethnic group, and that better institutions in terms of quality might be required in order to mitigate that adverse impact. The results of this study are significant because based on the Theory of Equal Opportunity, it is believed that welfare disparities are often caused by circumstances, and they are subject to compensation in a just society since they are unfair (Ibragimova & Frants, 2022). Institutions are considered an important component of the economy to eliminate this ethnic unfairness.

DATA, MODEL, AND METHODOLOGY

We investigated the effect of trade integration, economic growth, and government spending on income inequality for the period from 1991 to 2019, by using a sample of 12 post-Soviet countries[1]. Table 1 shows our dependent and independent variables and the sources of data. We utilized income inequality Gini coefficient data from World Inequality Database. Moreover, we used the KOF trade globalization index and GDP per capita data from the KOF Globalisation Index Database and WDI Database, respectively. We also employed a government spending index from the Heritage Index of Economic Freedom as a proxy for the reduction in government spending. According to this index, a higher index value represents less government spending.

Table 1: Variables and Data Sources

Variables	Sources
Dependent Variable	
Income Inequality	World Inequality Database
Independent Variables	
Trade Integration (KOFTrGl)	KOF Globalisation Index Database
Reduction in Government Spending (RGS)	Heritage Index of Economic Freedom
GDP Per Capita (LGDPC)	WDI Database

We used the Quantiles via Moments technique created by Machado & Santos Silva, (2019), to estimate the econometric model for a range of very important aspects. First, the variables have a significant degree of heterogeneity both between countries and over time. Generally, cross-sectional heterogeneity and variation across time are ignored by conventional panel data-based techniques. Second, the Quantiles via Moments methodology enables the use of techniques that are only accurate for estimating conditional means, like differentiating cross-sectional effects in the panel data-based empirical models, while also revealing details on how the regressors impact the overall conditional distribution (Sohag et al., 2022). Moreover, this technique not only considerably simplifies the estimation of complicated models but also offers estimates of the regression quantiles.

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1   Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan, and Ukraine

$$Y = \alpha + X'\beta + \sigma(\delta + Z'\gamma)U \tag{1}$$

where is the vector of independent variables

Z represents k-vector containing known differentiable (prob. 1) transformations of X's parts with element l.

$$E(U) = 0 \; and \; E(|U|) = 1 \tag{2}$$

$$Q_y (\tau|X) = \alpha + X'\beta + \sigma(\delta + Z'\gamma)\, q(\tau) \tag{3}$$

Where $q(\tau) = F^-_U (\tau)$, so $\Pr(U < q(\tau)) = r$

$$Q_y (\tau|X) = \alpha + \delta q(\tau) + X'(\beta + \gamma q(\tau)) \tag{4}$$
$$\beta_l (\tau,X) = \beta_l + q(\tau)D^\sigma_{Xl} \tag{5}$$

$$D^\sigma_{X_l} = \frac{\partial\sigma(\delta + Z'\gamma)}{\partial X'} \tag{6}$$

$$E[RX] = 0$$
$$E[R] = 0$$

$$E[(|R| - \sigma(\delta + Z'\gamma))\, D^\sigma_\gamma] = 0 \; a \tag{7}$$
$$E[(|R| - \sigma(\delta + Z'\gamma))D^\sigma_\delta] = 0$$
$$E[I(R \le q(\tau)\,\sigma(\delta + Z'\gamma)) - \tau] = 0$$

$$R = Y - (\alpha - X'\beta) = \sigma(\delta + Z'\gamma)\, U \tag{8}$$

$$D^\sigma_\gamma = \frac{\partial\sigma(\delta + Z'\gamma)}{\partial\gamma} \tag{9}$$

$$D^\sigma_\delta = \frac{\partial\sigma(\delta + Z'\sigma)}{\partial\delta} \tag{10}$$

$$E[UX] = 0$$
$$E[U] = 0$$
$$E[(|U|-1)D^\sigma_\gamma] = 0 \tag{11}$$
$$[(|U|-1)D^\sigma_\delta] = 0$$
$$E[I(U < q(\tau)) - \tau] = 0$$

$$U = \frac{Y-(\alpha+X'\beta)}{\sigma(\delta+Z'\gamma)} \tag{12}$$

$$Y = D'_{\beta D} + C'_1\beta_1 + \sigma(D'_{\gamma D} + C'_{1\gamma 1})U \tag{13}$$
$$D_1 = D_1^*(C_1, C_2, U^*) \, for \, l = 1,... \, k_D \tag{14}$$

where $D_1(.) : R^{k1+k2+1} \rightarrow R, \sigma(.)$

$X'=(D', C_1), C' = (C'_1, C'_2) \, \beta' =(\beta'_D, \beta'_1)$ and $\gamma' = (\gamma'_D, \gamma'_1)$

$$Pr\{Y \leq S_y(\tau|X)\} = Pr\{Y \leq S_y(\tau|X)|C\} = \tau \tag{15}$$

$$S_y(\tau|C) = X'\beta + \sigma(X'\gamma)q(\tau) \tag{16}$$

$$\frac{1}{\sqrt{n}}\Sigma_1^n C_i\left(\frac{Y_i-X'_i\widehat{\beta}}{\sigma(X'_i\widehat{\gamma})}\right) = 0 \tag{17}$$

$$\frac{1}{\sqrt{n}}\Sigma_1^n C_i\left(\frac{|Y_i-X'_i\widehat{\beta}|}{\sigma(X'_i\widehat{\gamma})} - 1\right) = o_p \tag{18}$$

$$\frac{1}{\sqrt{n}}\Sigma_1^n \psi_i\left(\frac{|Y_i-X'_i\widehat{\beta}|}{\sigma(X'_i\widehat{\gamma})} - 1\right) = o_p(1) \tag{19}$$

RESULTS

To highlight our variables, we began our study using descriptive statistics. Table 2 presents the descriptive statistics of the variables of the model. Precisely, Table 2 shows the overall standard deviation of the variables as well as within and between measures. Table 2 clearly demonstrated that for many of the variables, the standard deviation was profound between measures, indicating country heterogeneity of income inequality, trade integration, economic growth, and reduction in government spending.

Table 2: Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max
TRINT	overall	56.37147	13.09608	24.8694	84.29723
	between		8.731008	42.32139	70.46974
	within		10.09896	21.01158	76.95296
LGDPC	overall	7.815646	.812418	5.949624	9.402827
	between		.7290448	6.528235	9.069444
	within		.405956	6.893956	8.622291
LGDPC^2	overall	61.74242	12.70989	35.39803	88.41316
	between		11.39072	42.74332	82.32849
	within		6.379704	47.58291	75.31585
RGS	overall	69.68125	17.35441	26.2	95.5
	between		14.73045	41.725	87.6875
	within		10.07862	30.85625	100.9854

We examined the nexus between trade integration and income inequality using the Quantiles via the Moments approach (Table 3). Moreover, we present respective fitted value graphs with their 95% confidence intervals (CI) in order to demonstrate the validity of the findings derived from the quantiles via moments (Fig. 3 and Fig. 4). Table 3 shows the impact of trade integration, economic growth, and reduction in government spending on income inequality in the post-Soviet countries. The results of location and scale, in general, implied a significant effect that confirms the reliability of Quantiles via Moments regression analysis. The estimated coefficients of Trade Globalization (TRINT) were negative and significant under all quantiles. The magnitude of the coefficient was higher at q25. The coefficients of GDP per capita (LGDPC) were positive and significant under all quantiles. The estimated coefficients of the quadratic form of GDP per capita were negative and significant at q25 and q50.

Our empirical results revealed that up to a certain point, economic growth increases income inequality. However, after a threshold point of economic growth, it impedes income inequality in our sample countries. Regarding the role of reduction in government spending, the coefficients of RGS were invariably positive under each quantile. The magnitude of the coefficient was higher at q25.

Table 3: The Main Results

Variables	Location	Scale	q25	q50	q75
TRINT	-0.0019***	0.0005***	-0.0023***	-0.0019***	-0.0015***
	(-7.04)	(3.11)	(-8.47)	(-7.37)	(-4.72)
LGDPC	0.1212**	-0.0233	0.1420***	0.1242**	0.1046*
	(2.36)	(-0.75)	(2.72)	(2.45)	(1.72)
LGDPC^2	-0.0077**	0.0019	-0.0094***	-0.0080**	-0.0064
	(-2.32)	(0.94)	(-2.78)	(-2.43)	(-1.61)
RGS	0.0011***	-0.0002*	0.0013***	0.0012***	0.0010***
	(6.45)	(-1.90)	(7.32)	(6.69)	(4.72)

Note: ***, **, & * indicate 1%, 5% & 10% significance level.

Our results are in line with and in contrast to several prior studies. Our findings are in harmony with the study of Cevik and Correa-Caro (Cevik & Correa-Caro, 2020). Nevertheless, our empirical findings contrast with Kiatrungwilaikun & Suriya, (2015), who found no relation between economic growth and inequality, and Castells-Quintana et al., (2015) who reported a U-shaped pattern.
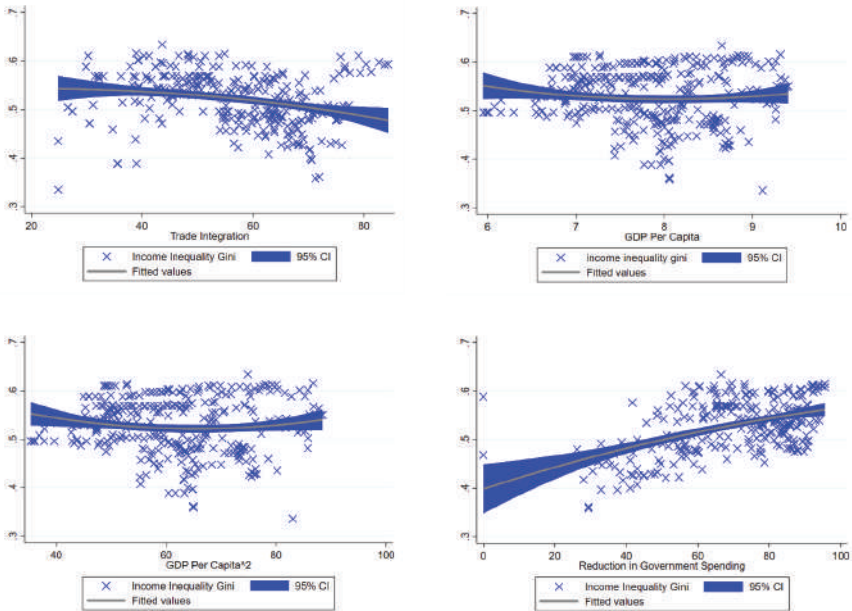

**Figure 3: Fitted Values for Income Inequality
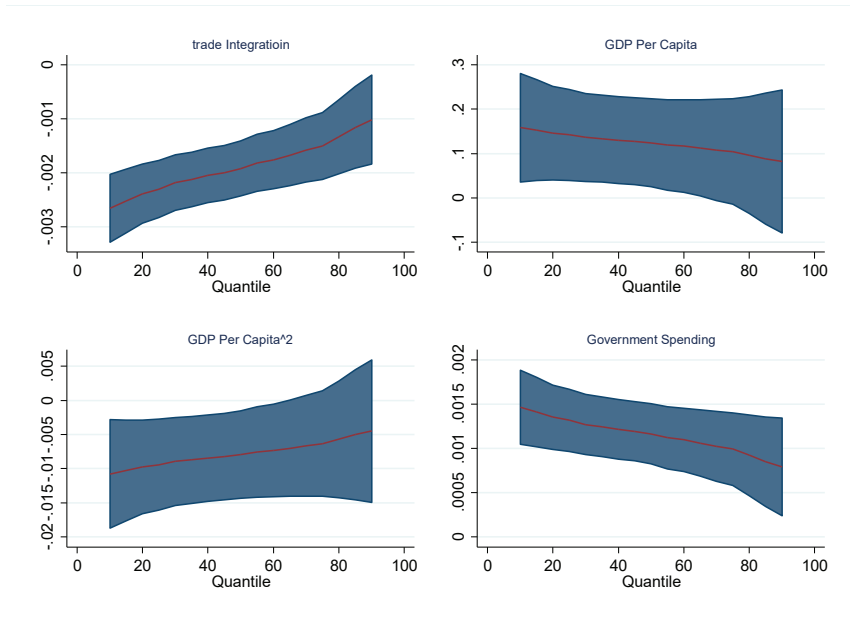and Trade Integration Dynamics**
Note: CI—Confidence interval

Figure 4: Income Inequality and Trade Integration, Economic Growth, Reduction in Government Spending under Quantiles

CONCLUSION

Given considerable income inequality in 12 post-Soviet countries, we investigated the link between trade integration and income inequality by using the Quantiles via Moments Framework. We provide several interesting findings. First, the location and scale effect of trade integration appears to be significant. It reduces income inequality under all quantiles in our sample economies. Nevertheless, its impact is different over quantiles. For example, the impact of trade integration was more profound at the lower quantiles while it was moderate at the middle quantiles. The magnitude of trade integration was lower at the top quantiles.

Second, our empirical result confirmed an inverted U-shaped link between economic growth and income inequality, which validates the Kuznets Hypothesis. Thus, our results clearly indicated that economic growth after the threshold point helped to decrease income inequality in

the sample countries. Third, less government spending increases income inequality under all quantiles. However, the magnitude of government spending on income inequality was different at q25, q50, and q75. Precisely, the impact of government spending was higher at the q25, and it decreased from the lower quantiles to the higher quantiles.

Our findings provide key policy implications for future work. First, income inequality is closely related to how trade integration affects the structure of skilled labor sectors and unskilled-labor sectors. The inverse relationship between trade integration and income labor inequality is in favorable argument with trade openness reducing income inequality through the narrowing of the factor returns gap between unskilled-labor-intensive sectors and skilled-labor-intensive sectors and through augmenting market competition. The trend of the income share of the top 10% was higher than the income share of the bottom 50% in all observed economies and is likely to continue, so increasing the income of the dominant class in the labor force through trade integration is essential. Second, the reduction in government spending hada negative effect on income inequality. Hence, government spending should be increased in a way that can improve the income of the middle and lower classes. Third, tax policy should be reconsidered according to the level of income concentration and tax burden. For example, in Russia, the poorest group of society has the highest tax burdens (Ordynskaya & Cherkovets, 2021). Tax reform and government spending that the bottom class can enjoy are crucial to eliminating income inequality. Fourth, even though we provide findings regarding the effects of trade integration and income inequality, other factors such as ICT diffusion, education, private and government institutions, and tax policy also have an impact on income inequality, which should be considered by future studies.

ACKNOWLEDGEMENT

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