THE ECONOMETRIC ANALYSIS OF INCOME INEQUALITY IN THE REPUBLIC OF UZBEKISTAN

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ABSTRACT

The Kuznet Curve is a phenomena in which income distribution worsens in the early stages of economic expansion before improving later. The tendency is thought to have developed as a result of labor shifts from a more egalitarian agricultural sector to the industrial sector, where higher income prospects are exploited by a select few. The Kuznet curve, on the other hand, could be the product of a variety of other factors. For example, according to Greenwood and Jovanovich (1990), financial sector expansion may raise income inequality in the early stages when only a few people have access to bank credit, but then decrease as more people have access to formal credit.

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The problem statement is discussed first, followed by research questions and objectives in this chapter. The final section contains details on the framework of the upcoming dissertation.

The primary goal of economic development is to raise the living standards of the average person, and economic expansion alone will not suffice. This is because advances in the common man's living standards are determined by both growth and income distribution. Unfortunately, when poverty levels rose in the 1990s, research moved to estimating the proportion of the poor and politicians'

efforts to reduce the proportion of the poor population, rather than pursuing suitable measures to improve income distribution. Governments can take appropriate actions to prevent or at least slow the rise of income disparities. For example, fairer income distribution would be aided by financial development combined with efficient interventions to boost micro, small, and medium firms. Similarly, properly targeted increases in public consumption and investment would aid in improving income distribution. Opening up the media can aid in the creation of policies aimed at eliminating wealth disparities. Because the relationship between growth and income disparity is influenced by the relative growth of various sectors, technological choices, and job creation, the government can influence it through a variety of policies, including tax-cum-subsidy measures.

LITERATURE REVIEW

Although concern over economic inequality has a long history, interest in the topic has grown dramatically during the Great Recession of 2008–2009. Many people perceive increasing income and wealth inequality as a major social problem in popular and academic discourse as well as public debates (see Stiglitz 2013; Piketty 2014; Collins 2016; Milanovic 2016; Sitaraman 2017; Boushey et al. 2017 among many others).

While the majority of those writing about inequality emphasize its negative consequences, others argue that inequality isn't rising significantly or, if it is, that it is a fair and natural result of market economies in which rewards are distributed based on

different contributions to economic output and individuals have different talents and attitudes toward work (Mankiw, 2013). These commentators frequently claim that measures to combat rising inequality will have a significant negative impact on the functioning of capitalist economies, which have delivered enormous tangible benefits to people all over the world (Conard, 2016; Watkins and Brook ,2016). Others say that concerns about economic disparity are unfounded, with poverty being the main issue (Watson, 2015; Frankfurt, 2015).

Poverty and inequality are two separate but linked ideas. To be poor indicates that a person lacks the necessary resources to perform at a socially acceptable level (Sen, 1999). The fraction of the population with income or wealth below a benchmark assumed to represent the bare minimum required for an individual to thrive is used to calculate national poverty levels. Poverty levels in the United States were determined in the 1960s based on the cost of a nutritionally acceptable but simple food consumption basket. Despite significant differences in cost of living from one city or state to the next, the initial standards have been modified for inflation and are applied evenly across the country (Stiglitz, 2013).

METHODOLOGY

In order to determine income inequalities, a great variety of indexes have been proposed in the literature. These indices include statistical measures such as the Lorenz curve, gini coefficients, log normal distribution, coefficients of variations,

inter-quartile range, income received by highest and lowest income groups, and normative measures such as Theil's entropy measure, Atkinson's Index, Takayama Index, Sen's Index, and others. However, in Uzbekistan, only the Lorenz curve and gini coefficients are commonly used to determine changes in economic inequality.

A good index of income inequality is expected to meet the following criteria:

Pigou-Dalton transfer sensitivity: Income inequality increases if income is transferred from someone poorer to someone richer;

Symmetry: Income inequality remains the same if two individuals merely change places in the distribution;

Independence: If incomes of everyone increase by the same proportion, there would be no change in income inequality;

Population homogeneity: If the population of each income group rises or falls by the same proportion, there would be no change in income inequality.

Lorenz curve

The Lorenz curve provides complete information on the whole distribution of incomes as a proportion of the mean and gives a comprehensive description of the relative standards of living of various groups of households If everybody receives the same level of income, Lorenz curve coincides with 45° line. However, if the two Lorenz curves intersect then it is not possible to determine which curve shows higher or lower income inequalities. For example, one cannot say if the Lorenz curve shows lower or higher income inequality than the Lorenz curve .

Gini Coefficient

The gini coefficient is the average distance between cumulated population shares and cumulated shares in income, i.e. the average distance between the 45 degree line and the Lorenz curve. The value of gini ranges between 0 for perfect equality and 1 for perfect inequality, i.e. if all the incomes in the society accrue to single individual or group. Gini coefficient attaches more weight to the incomes close to the modal income.

Quintile Ratio, Coefficient of Variation and Logs of Incomes

The Ratio of the incomes of the highest Quintile to the income of the lowest Quintile gives the magnitude of inequality. Coefficient of variation is dispersion as a percentage of the mean. Higher the coefficient of variation more unequal is the income distribution. Standard deviation of logs of incomes weighs more heavily incomes of those that are in the lower range of incomes.

Atkinson indices

The Atkinson's social welfare function is ess entially a utilitarian social welfare function, where individual utility function displays the decreasing marginal utilities of income, or that utility function corresponds to a concave social welfare function arising from a concave individual utility of income. Since the social value of the welfare of individuals depends

crucially on the levels of welfare of others and as such it cannot be a sum of individual welfare components.

Theil's Entropy Measure

Theil's index is a normative index and satisfies the decomposability criterion if incomes are overlapping and non-disjoint, e.g., when an individual receives income from several different sources. Theil's measures attach greater weight to larger incomes.

The conditions to be met by measures of inequality that allow them to be decomposed in terms of shares of total inequality explained by different sources of income or by different characteristics of households (individuals) were formulated by Shorrocks (1982) . It was proved that measures allowing such a decomposition should be symmetric, continuous, and equal to zero if all incomes are equal. The most widely known measure of inequality is the Gini index, used to measure inequality in the distribution of income, consumption, and other indicators of well-being, and it meets the above conditions for its decomposition by source of income (Stark, 1986).

The total household income is generated from various sources, such as income from wages, property, public and private transfers, and other components. Each of the components of total income is characterized by a share (weight) in total income, the degree of uniformity of distribution relative to total income, and correlation with total income. Based on these characteristics, Lerman and Yitzhaki (1985) developed a Gini decomposition method to reveal the relative importance of the contribution of various components of total income

to total inequality. According to the author's methodology, the Gini index is:

$$G = \sum_{k=1}^{K} S_k G_k R_k,$$

where G_k is the Gini index for income i from source k, S_k is the share of total income from source k, R_k is the Gini correlation between income from source k and total income. Hence, $S_k G_k R_k$ is the bare contribution of the source of income k to inequality in total income. If a source of income is unevenly distributed and disproportionately redistributed to those at the top of the income distribution (R_k is positive and large), its contribution to inequality will be positive. If it is unevenly distributed, but mainly among poor households (individuals), then this source of income could have a balancing effect (Nivorozhkina, 2016).

Suppose $\eta_k = G_k R_k / G$ is the Gini income elasticity for the source k, then the marginal change in the total income for the k source in relation to the Gini index calculated for the total income is:

$$\partial G / \partial e_G = S_k G_k R_k G - S_k = S_k(\eta_k - 1).$$

Thus, decomposition of the Gini index allows for assessing the effect of marginal changes in the source of income on overall inequality (Lopes-Feldman, 2006).

The next highlight of the analysis undertaken is the connection between inequality and poverty. Income inequality is a situation in a society in which income is unevenly distributed between different people and households. People with incomes below a certain threshold accepted as the minimum standard in society are considered poor. This is just one of several definitions of poverty, but it is

closely related to inequality and allows them to be analyzed in a single context.

During the study period from 2000 to 2017, there was a synchronous decrease in inequality and poverty indicators, reflecting their sensitivity to crisis processes in Russian society. Since the cumulative distributions of poor and non-poor do not intersect, it is possible to de-compose the Gini index into the following: inequality among the poor and among the non-poor, and intergroup inequality. This approach makes possible analyzing relative poverty and inequality, and additionally obtaining information to assess the risks of inequality and poverty and trends in their formation.

We divide the initial data into two groups:
Poor, with incomes y≤Z (Z—poverty threshold),

Non-poor, with incomes y>Z.

Then the Gini index for total income G:

$$G = S_p G_p P_p + S_r G_r P_r + G_b$$

where p—group of poor, r—group of non-poor, P—the share of the group in the total population of households (individuals), $S = P\bar{y}(p \text{ or } r)/\bar{y}$—group share in total income $\bar{y}$, Gb—intergroup inequality. Note that $S_r = 1 - S_p$, $P_r = 1 - P_p$. Likewise, $S_b = P_p - S_p$—intergroup inequality equals the share of the poor in the aggregate minus their share in the income.

Approach to calculating household disposable resources was as follows: 'Disposable resources' = households' income from wages (including the monetary value of payments in kind) + social transfers (pensions, scholarships, allowances, etc.) + private transfers (help from relatives, charitable organizations, etc.) + income from the sale of household plots + other income (debt repayments, insurance payments, sale of personal property, rental of property, capital investment in the form of interest on deposits, shares and other securities) + loans and spent savings + hidden income.

RESULTS

Uzbekistan made modest progress in reducing income inequality in 2012–2016, according to official data. Although the Gini coefficient moderated from 0.30 in 2011 to 0.26 in 2016,[17] inadequate data makes measuring income inequality in Uzbekistan difficult.

Uzbekistan made progress in improving its gender equality, although challenges persist, including the existence of traditional values and attitudes that affect the distribution of gender roles and the segregation of women in the labor market,[21] and asymmetry in higher segments of decision making and managerial positions.[22] As of 2017, the country was ranked 59th out of 189 countries in terms of the gender inequality index value (0.274). It underperformed its peers in the Europe and Central Asia region on the maternal mortality ratio (36 deaths per 100,000 live births) and the share of women in parliament seats (16.4%).[23] Lack of sex-disaggregated data hinders the evaluation of gender disparities. To tackle these key problems, the government adopted an action plan in 2018 to promote women's employment and private

entrepreneurship among women.24 In addition, the government envisages improving women's reproductive health, strengthening the institution of family, and reforming the Women's Committee in 2018–2021.

The economic reforms of the new government have caused price increases. Given that the average household's consumer expenditures are mainly allocated to food products (47.3%) and services (20.4%), the rise in prices for foodstuff and utilities critically affects people's livelihoods. The reforms and the economy's structural changes may also cause a reduction in jobs and therefore rising insecurity and inequality. It is important to prevent people from falling back into poverty and to ensure that all members of society can participate in and benefit from the country's economic growth.

Evolution of average income, Uzbekistan, 1973-2021

— National income | Total population | average income or wealth | adults | individual
— Gross domestic product | Total population | average income or wealth | adults | individual
Graph provided by www.wid.world

Evolution of average income, Uzbekistan, 1973-2021

— National income | Total population | — Gross domestic product | Total population |
— Gross domestic product | P0-100 | — National income | P0-100 |
Graph provided by www.wid.world
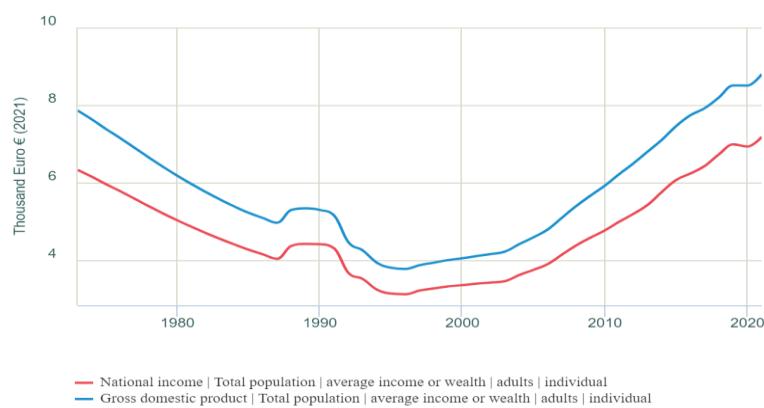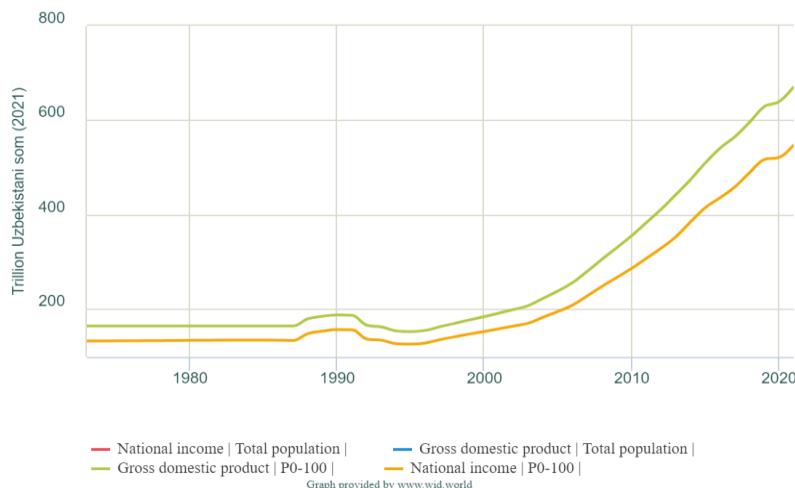
CONCLUSION

The concept presented leaves for analysis only those households in which the hidden income component is stable. However, as noted earlier, the sample does not include either the very poor or the very rich; those who derive such income from time to time could also be eliminated from observation. But the discussion about the need to validate hidden income concerns mainly those groups of the population that receive them

constantly but do not declare them to the authorities. How unevenly distributed is this income component and how high is the risk that it increases income inequality? The answers are undoubtedly important for the formation of a fair policy in the field of the income of the population.

bo'ladi, bu esa ushbu ihtirolarning natijadorligi adolatli taqsimlanishiga zamin yaratadi.

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