

# Income inequality revisited 60 years later: Piketty vs Kuznets<sup>☆</sup>

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## Abstract

This paper compares two popular views on the evolution of income inequality. The article by Simon Kuznets, which was published in *American Economic Review* in 1955, considers inequality as a byproduct of economic growth and suggests that a relatively rich economy should also be less unequal. In contrast, Thomas Piketty indicates that inequality is progressing, and an internationally coordinated policy is required to bring inequality under control. My paper applies the arguments of Kuznets and Piketty to the problem of income inequality in modern Russia.

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## 1. Introduction

The study of the evolution of income and capital inequality is important not only because of the need to control poverty but also due to the potential influence inequality has on economic growth rates.

Economists have long believed that economic growth alone would suffice to resolve the problems of inequality and poverty. For example, Simon Kuznets (1955) assumed that sustainable economic growth would ultimately lead to a lower level of inequality. Similar concepts regarding the correlation between inequality and economic growth have dominated international financial institutions for a long time, including the World Bank and the International Monetary Fund.

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The World Bank considered the acceleration of economic growth to be a sufficient measure for improving the conditions of all strata within the population.

However, more recent works (e.g., Rodrik, 2007) argue that economic growth alone may be insufficient to solve the problem of reducing inequality and poverty. Economic growth policy should be enhanced with redistributive measures so that the results of economic growth are more evenly distributed between different strata within the population. Several studies assert that growing inequality may result in lower rates of economic growth (Rajan and Zingales, 2004). Such a result may be the consequence of limited opportunities among relatively poor population groups to accumulate human capital, leading to relatively low rates of economic growth.

This paper, however, will not review the aforementioned mechanism or other traditional ways that inequality impacts economic growth, such as the effect of income inequality on political stability and thus on the size of investments or the influence of inequality on birthrates and therefore on growth rates. These mechanisms have been reviewed in the literature in sufficient detail. A significant part of this paper addresses the book by Thomas Piketty, in which, contrary to the forecasts of Simon Kuznets, the author points to the increasing income inequality in recent decades, as well as to the danger of decelerating economic development, which may result from the growing inequality, connected first with the stronger economic and political influence of more affluent individuals.

The paper consists of three sections. The first section addresses the work published by Simon Kuznets in the *American Economic Review* in 1955 and describes how the reaction to his article within the scientific community has changed over time. The second section presents the 2014 work by Thomas Piketty which criticizes Kuznets' article in particular. The third section attempts to use the results of those papers to conduct a brief analysis of income inequality in Russia.

## **2. The theory of Simon Kuznets, its testing and criticism**

### *2.1. Main ideas*

In his article, Simon Kuznets (1955) considered the influence of economic growth on income inequality. Kuznets collected data on income inequality and economic growth in three developed countries: the United States of America, United Kingdom, and Germany. The data arrays obtained by the author covered only a few decades, mostly during the first half of the 20th century.

Based on the data collected, Kuznets described the evolution of inequality and economic growth in these three economies. The author came to the conclusion that, over the period starting from the beginning of World War I, income inequality decreased in all three countries, although at different rates. As a result, the share of poor individuals in the national income increased, whereas the share of the rich declined.

Moreover, Kuznets noted the growth of per capita GDP in the three economies during the decades he reviewed, except for several years of military action.

In addition to the statistical summary, which accounted for a relatively small portion of the paper, the author described the mechanism purportedly explaining the impact of income on inequality.

The key element of that mechanism was industrialization. In Kuznets' opinion, the emergence of industry leads to a situation where households begin to migrate from the poor agricultural sector, characterized by a relatively low income inequality, to the richer industrial sector, where income may be less evenly distributed. The result of the initial stage of this transition, when the majority of the population is still employed in the relatively poor agricultural sector while certain workers have moved to a wealthier city and are employed in the industrial sector, is the growth of inequality. However, when the majority of workers move to the city and only a small portion of the population remains in agriculture, inequality will be reduced.

## *2.2. The influence of politics on scientific results*

Kuznets' work became one of the most renowned studies on the correlation between economic growth and inequality, but since the late 1980s, and especially during the past 15–20 years, it has been criticized.

As Kuznets himself admits, the mechanism he described is only a hypothesis requiring more data to be proven. This is because the data gathered by the author cover only a few decades for just three economies and thus the paper visualizes only a part of the inverted U-curve, reflecting the possible statistical correlation between economic growth and inequality within the three countries.

The paper lacks data that could confirm the high level of equality in those three economies during the pre-industrial era. In addition, no data are presented indicating the growth of inequality during industrialization. As noted above, the publication mostly contains discussions about the evolution of economic growth and inequality and assumptions regarding the mechanism connecting inequality and growth. Moreover, the author draws his conclusions based on the assumption that it is growth that affects inequality, and not the other way around. Using this assumption, however, Kuznets does not refer to any dataset or particular historical cases supporting this kind of correlation.

The research conducted over half a century later does not uncover evidence that pre-industrial societies were characterized by high income equality. For example, Milanovic et al. (2007) use the so-called social tables in which the total population is divided into classes and each class is evaluated in terms of its size and average income. The majority of countries or regions (from the Roman Empire to China at the end of the 19th century) covered in Milanovic et al. (2007) paper are characterized by significantly higher income inequality than modern societies. This result is quite predictable: in feudal economies, land (the main "capital" in those times), and sometimes the peasants themselves, belonged to the nobles. De jure and de facto political power, backed by military power and supporting this distribution of property, also belonged to the nobles. In this situation, peasants had little bargaining power, whereas the feudalists held a very strong position to receive a significant portion of the produce. The peasants had such little bargaining power that its improvement sometimes resulted from extremely unfavorable shock events, such as a dramatic reduction in the peasantry resulting from the plague. On the whole, a comparison of inequality between pre-industrial and industrialized societies requires much more research, which is not found in Kuznets' paper.

In addition, the very mechanism suggested by Kuznets connecting inequality and growth reflects only a part of the historical processes that affected the level of inequality. Some other key processes ignore this mechanism. Of course, as a result of migration from the agricultural sector to the industrial sector, the level of income for the average worker increased: otherwise, peasants would not have moved to the city. However, afterwards, the share of income going to workers can change as well, for example, because of strengthening their bargaining power. The latter can change under the influence of certain political circumstances. For example, coordinated actions by workers aimed at increasing their share in the production may be as important for reducing inequality as more intensive migration of the workforce to the city. The growth in worker income can thus be explained not only by higher incomes in the economy due to industrialization but also by income redistribution in the industrial sector itself under the influence of political change.

The most serious criticism of Kuznets' paper can be found in Thomas Piketty's book (Piketty, 2014), which is reviewed in detail in the second section of this article. The author asserts that the choice of the economic mechanism proposed by Kuznets, connecting growth with inequality, is not only scientifically but also politically motivated.

Piketty argues that as far back as in 1953, Kuznets, assuming that the context of the correlation he found may be incidental and not evolutionary in nature, insisted on excluding generalizing interpretations until the required research complementing his paper was conducted, i.e., until the required data were collected to obtain the respective results. However, only one year later, during a speech at a session of the American Economic Association, Kuznets was talking about his results in a different context, which was also presented in his 1955 publication. The latter, in addition to an accurate statistical analysis showing the reduction in inequality with income growth in the three developed economies, contains a considerable descriptive section suggesting, without the intermediate stages of rigorous analysis, an explanation for those statistical results. In this descriptive section, similar to his 1954 speech at the session of the American Economic Association one year before the publication, the author stresses the universal nature of the transition from lower to higher inequality at the early development stage and then back to lower inequality at a more mature stage. Because the results obtained from analyzing historical data for the United States, United Kingdom, and Germany were described by Kuznets as universal, they began to be considered as applying to developing countries in academic circles as well as in international financial institutions, such as the World Bank.

Apparently, this transition from scientific reserve in interpreting statistical results to intellectual speculations was primarily politically motivated. The goal of Kuznets' speech before the American Economic Association in 1954 was to support efforts aimed at keeping developing countries under the influence of developed capitalist states. To this end, it was necessary to convince the governments of developing countries that the influence of economic growth on inequality really existed and, moreover, the results of this influence in the long run allowed for simultaneous economic growth and a reduction in inequality. Developing countries needed only to achieve higher sustainable rates of economic growth, and reduced inequality would automatically occur after a while. Thus, political regimes in those countries would achieve greater legitimacy and would become

more stable. The developed world would be prepared to help them achieve higher economic growth rates, including through expertise and financial assistance from the World Bank, which, during approximately the same years, turned its attention from the post-war restoration of Western Europe to helping developing countries.

However, despite the lack of requisite statistical analysis, is it possible that Kuznets is still right? Might it be that a higher level of development actually leads to an automatic reduction in inequality?

### 2.3. *Testing Kuznets' theory*

Kuznets' theory was tested over several decades after his article was published. There is a literature verifying the existence of both an inverted U-curve relating income inequality with economic growth and the mechanism for economic growth evolution proposed by Kuznets. There is, however, only limited evidence in favor of the existence of an inverted U-curve demonstrating correlation between income inequality and economic growth, as well as Kuznets' mechanism for their correlation.

One of the main arguments against the existence of a mechanism that reduces inequality as a result of economic growth is that the highly scarce data Kuznets used were observed during periods rife with all kinds of shocks. The Great Depression, the World Wars, the high taxes imposed to finance war expenses—all of these processes dealt a major blow to capital owners, reducing both their wealth and current income.

As soon as those factors were neutralized (e.g., the high taxes on wealthy individuals were lifted by Margaret Thatcher in the U.K. and by Ronald Reagan in the U.S.), inequality began to increase rapidly and approached the level that existed prior to World War I. This contradicts not only Kuznets' inverted U-curve of the correlation between economic growth and income inequality but also the very mechanism for connecting the two phenomena. Although the context of the statistical correlation discovered by Kuznets was (as noted above) more of a shock than evolutionary in nature, this fact was ignored, whereas Kuznets' findings were not only tested over many decades but were also considered in numerous theoretical and statistical papers as a valid pattern between economic growth and inequality.

The key problem facing researchers who studied the correlation between income inequality and economic growth in the years following the publication of Kuznets' paper was the lack of data on developing countries. However, over time, such data began to emerge, and the opportunities to test Kuznets' findings became greater.

In the 1970s, there was sufficient information to conduct an inter-country empirical study based on cross-sectional data. Subsequent statistical papers confirmed Kuznets' findings: indeed, poor and rich countries were characterized by lower inequality than middle-income economies. However, as Gallup (2012) noted, none of the papers (e.g. Paukert, 2007; Ahluwalia, 1976a, 1976b; Saith, 1983; Papenek and Kyn, 1986; Campano and Salvatore, 1988; Ram, 1988; Bourguignon and Morrison, 1990) reproduced Kuznets' own analysis. That is, they did not consider the evolution of inequality based on historical data from any particular country.

Although in the cross-sectional analysis Kuznets' findings were verified only indirectly, many economists were convinced for some time of the validity of the Nobel prize winner's findings. His assertions were taken as a statistical fact and, for a long time, theoretical and statistical work was based on the inverted U-shape of the curve relating income inequality and economic growth. For example, in a paper by a team of World Bank economists (Bussolo et al., 2007) that predicts the evolution of global inequality through 2030, the authors used Kuznets' assumption about the migration of the population from agriculture to industry and the subsequent assertion about increasing inequality during the initial stages of industrialization and its subsequent reduction during later stages.

However, when much more data (including historical) on inequality appeared during the 1990s, Deininger and Squire (1996, 1998), after collecting data on changes in the Gini index in a number of economies and obtaining an inter-temporal correlation between growth and inequality in a large number of countries, came to the conclusion that the correlation discovered by Kuznets is more often disproved than confirmed.

The data gathered by Deininger and Squire (1998), Higgins and Williamson (1999), Savvides and Stengos (2000), and Barro (2000) also failed to definitely confirm Kuznets' findings.

### **3. Thomas Piketty's "Capital in the 21<sup>st</sup> century"**

Thomas Piketty provides a detailed criticism of Kuznets' paper. Piketty spent many years studying the evolution of income and capital inequality and gathered one of the most extensive datasets on inequality (from the 18th century to the beginning of the second decade of the 21<sup>st</sup> century). He shows that there is no automatic decrease in inequality at the mature stage of economic development.

In particular, Piketty develops an updated Kuznets curve for a one-hundred-year period, from 1910 to 2010. According to this curve, the share of the top income decile out of the U.S. national income changed in the same manner as in Kuznets' paper until 1955. This share declined from the 1920s until the end of World War II and then leveled out until the early 1980s. However, starting from the 1980s, when deregulation and privatization policies were launched, the share increased dramatically. If we include 19<sup>th</sup> century data, the curve takes on an S shape, (rather than an inverted U-shape), which first dips frontwards and is then mirrored against a straight horizontal line: inequality was low at first, due to the arrival of immigrants to the U.S. (typically having little wealth), and their income was determined by the relatively homogenous agricultural labor; then inequality increased during the 19th century but began to decline starting in the 1920s, remaining relatively low until the early 1980s when it began to grow again.

The central variable in Piketty's book is capital, which Kuznets did not take into account in his review of income inequality. Capital, which is distributed more unevenly than labor income and has a significant impact on overall household income, plays an important part in income inequality.

Piketty includes various assets in his definition of capital: land, real estate, equipment, financial capital, intellectual property, etc. Capital, as described by Piketty, is distributed even less evenly than labor income. However, it evolves

in a similar manner. During the 19th century, the U.K. and France, the leading European colonial powers, experienced increasing inequality of wealth, including the returns on capital received from the colonies. However, major shocks (the World Wars and the Great Depression), as well as the high tax rates imposed to finance the enormous wartime government expenditures, substantially reduced inequality in capital distribution. This situation persisted until the 1980s, when the inequality of wealth (capital) distribution began to increase at a dramatic rate. Thus, Piketty's evolution of wealth distribution, based on data from three major European economies—Germany, France, and the UK—from 1914 to 2010, has a U-curve shape: similar to income, the inequality of wealth distribution decreased beginning with World War I, leveled out after the end of World War II, and began to increase shortly before the end of the Cold War.

The period of relatively low inequality in wealth distribution, which established itself by the end of World War II and lasted until the end of the eighth decade of the 20th century, was, in the author's opinion, mostly the result of high taxes on wealthy individuals in a number of developed economies. In addition, the European and Japanese economies grew relatively fast, also through borrowing technologies developed in the U.S. During the comparatively rapid economic growth, exceeding returns on capital (including not only industrial capital but many other types of assets) in terms of rates, the share of rent in the national income became comparatively smaller, whereas the share of labor income increased by comparison, which led to lower income inequality. However, when the level of technical development in Japan and developed European countries approached the level of the United States, economic growth in those countries slowed down and returns on capital once again became relatively high, whereas labor income began to grow comparatively slower.

The relatively higher capital income enabled capital owners to accumulate more wealth, which, being concentrated in the hands of a small group of owners, enabled them to receive even higher capital income. Piketty cites examples of how greater wealth can increase investment returns in an asset portfolio. Greater wealth makes it possible to hire managers who know in detail the properties of all kinds of assets spread around the world, which helps to increase investment returns. Households owning smaller wealth have limited opportunities and have to use more traditional financial services and receive lesser returns on their investments.

Accumulated capital is inherited, as before, but although its concentration is comparatively high, it is still lower than a hundred years ago. In addition, the wealthiest decile is now represented by professionals to a great extent, including top managers whose incomes are largely comprised of labor compensation.

Thus, Piketty, unlike Kuznets, views significant inequality as an integral property of capitalism and its reduction during the period from World War I until the end of the 1970s as a result of fiscal policies and shocks, rather than the evolution of the market economy.

In Piketty's opinion, the growth of wealth and income for a small group of households provides reason for concern: the richest individuals at the top, even in developed democratic countries, become more powerful, gaining opportunities to control both the economic and political processes. This situation, in the author's opinion, should be corrected: incomes of rich households should be taxed

at significantly higher rates, and countries should coordinate their efforts to tax wealthy individuals so that the latter cannot avoid taxes by withdrawing capital.

#### 4. Relevance for Russia

##### 4.1. *The evolution of inequality in Russia in the context of Kuznets' paper*

The publication by Simon Kuznets and the book by Thomas Piketty, such as the vast majority of the works mentioned in the preceding sections, apply to the wealthiest countries.

Not only is Russia not currently a wealthy country, but it is not even in the club of comparatively wealthy countries, i.e., the Organization for Economic Cooperation and Development (OECD). However, Russia is not a poor country either: according to the World Bank, per capita income based on purchasing power parity in Russia exceeded USD 23,000 in 2014.<sup>1</sup>

If we consider Kuznets' curve as a proven correlation based on facts, then Russia is a medium-income country and should be placed somewhere on the section of the inverted U-curve where inequality is comparatively high, if not at the peak of inequality.

Inequality in Russia is indeed higher than in the wealthiest economies, though lower than in the vast majority of Latin American countries, including Argentina and Chile, which are very close to Russia in terms of per capita income.

Income inequality in Russia (taking into account redistribution as measured by the Gini index) has grown throughout the 2000s: the index value was 0.397 in 2001 and increased to 0.422 in 2009 (Denisova, 2012).

The inequality of labor income without taking into account redistribution, also measured by the Gini index, decreased at first, but then began to increase again: the index value was 0.459 in 2006 and 0.447 in 2007, and then income inequality decreased to 0.418 in 2009, becoming lower than income inequality allowing for redistribution, as mentioned in the paragraph above. However, in 2011, the Gini index value for income inequality increased again to 0.425.

It should be stressed, however, that the report by Denisova (2012) for the OECD (the source of the Gini index values for purposes of this article) underlined the comparatively low reliability of the data on which the index values were based. Moreover, the decade reviewed in the report is too short of a period to make any conclusions regarding the long-term evolution of inequality in Russia. Finally, the fluctuations in the Gini index values within that decade provide no reason to assert the existence of any trend. The Gini index values varied continuously during the past decade, which makes us conclude that its value for incomes allowing for redistribution is relatively high and exceeds 0.4 on average.

Russia has achieved a medium level of income; therefore, according to Kuznets' findings, the long-term growth of the Russian economy, which will recover after the stagnation and recession, should be accompanied by decreasing inequality in the long run. Almost  $\frac{3}{4}$  of Russia's population lives in cities, whereas according to Kuznets' findings, inequality declines at the stage of economic development when the majority of the population moves from villages to cities. It can be ex-

<sup>1</sup> <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD>

pected that in Russia, recovery in long-term economic growth will be followed by a reduction in income inequality.

However, the problem is that Russian cities are very unequal in terms of the standards of living: many of them have been unable to overcome a local economic crises after the shutdown of Soviet era industrial facilities. In this situation, it is not very relevant where the majority of the population lives (either in rural areas or in the cities) if there is a lack of jobs in both, and a large portion of existing jobs are inefficient and consequently do not produce sufficient income in general or do not produce sufficient income due to the weak bargaining power of workers compared with their employers' regarding labor pay.

In the context of Kuznets' assumption about the mechanism by which growth affects inequality, the current situation can be compared with an interrupted migration from agriculture to industry: parts of the population were lucky to be born in or move to comparatively wealthy and fast-developing regions, but a significant portion of the Russian population remain in crisis-ridden, underdeveloped regions. As a result, as noted particularly in the work by Zubarevich (2010), the level of inequality between regions remains high.

The problem can be partially solved by further migration to cities and regions demonstrating high rates of economic growth. However, migration in Russia is complicated by rigid limitations on liquidity: moving requires large expenses, which a significant number of Russian households cannot afford.

In addition, in all likelihood, migration alone cannot solve the inequality problem: the current rates of economic growth in wealthy regions are not enough to employ the entire excess workforce willing to leave crisis-ridden regions. Sustainable economic growth should be either more even geographically (which requires investments in less wealthy regions) or even faster in fast-growing regions (to take in more migrants from other Russian regions).

However, the largest problem is the growth rate of the Russian economy, which is likely to remain negative in the near future. In addition, it is difficult to predict how long the recession and stagnation will last. In certain countries, those periods last many years and even decades, sometimes causing those countries to lose their status in the world income hierarchy. For example, Argentina, one of the richest countries in the first third of the 20th century, moved to the group of middle-income economies due to the protracted period of reduced growth rates. If, in the long run, the Russian economy continues to stagnate or even shrink, while the rest of the world continues to grow, we cannot preclude the possibility of Russia losing its status as a middle-income country. In this situation, inequality may be reduced, but not because the poor become rich but because the rich lose their status.

#### *4.2. Evolution of inequality in Russia in the context of Piketty's paper*

In the context of Thomas Piketty's work, inequality in Russia is more likely to increase than decline. The reason for this also lies in the low anticipated rates of economic growth, although the mechanism by which growth rates influence inequality differs from that proposed by Kuznets. To discuss the prospects of inequality in the Russian economy in the context of Piketty's paper, we need to compare the rates of economic growth with returns on capital.

If economic growth rates were high enough (which is quite possible considering the technological backwardness of the Russian economy), labor income could rise faster than personal wealth can accumulate. The growth rates of wealth, including income from any assets, would be lower than labor income growth rates in this case. Consequently, inequality would at least not increase.

However, because of the danger of maintaining low rates of economic growth, we should expect income inequality to increase: labor income would stagnate, whereas returns on various property (including real estate, financial assets, capital, and natural resources) would be higher. The large volume of capital leads to greater returns, and capital owners can pay for financial services to amass well-diversified and more profitable financial portfolios. In addition, less affluent investors can afford only a standard asset portfolio, whereas middle class and poor individuals can afford only a bank account.

Regarding the inequality of capital, which is reviewed in the central part of Piketty's work in 2013 according to the Global Wealth Report published by Credit Suisse (2013), over the past several years, the level of inequality in wealth distribution in Russia became the highest in the world if we do not take several small Caribbean economies into account. In his book, Piketty points to the limited reliability of this report. However, it is difficult to find other evaluations of capital inequality for the economy of Russia. According to the Global Wealth Report, whereas the wealth of billionaires around the world accounts for 1%–2% of total household capital, 110 billionaires living in Russia controlled 35% of the national wealth in 2013. The number of billionaires has also broken records in Russia: whereas one billionaire corresponds to every USD 170 billion of wealth in the world, in Russia one billionaire corresponds to every USD 11 billion. One percent of the richest people in Russia own 71% of the capital, whereas the accumulated wealth of 94% of Russian adults is below USD 10,000.

According to Piketty's findings, part of the returns on wealth owned by the top income percentile will be re-invested. The income and wealth of these individuals will continue to grow, which, taking into account the low rate of economic growth, will lead to greater inequality.

We should also pay attention to the extremely low level of wealth for the vast majority of Russia's population identified in the Global Wealth Report.

The accumulated wealth owned by 94 out of every 100 of Russian citizens is less than USD 10,000, and most of this wealth consists of assets that are more likely to be used by individuals to serve their basic needs (such as living in their own apartments) than converted into more liquid forms of wealth (e.g., bank accounts); thus, the bargaining power against employers—which is weak even without taking this possibility into consideration—becomes even weaker for 94 out of every 100 adults in Russia. The insignificant amount of accumulated wealth (most likely illiquid) makes Russian citizens dependent on the labor income paid by their employers. In contrast, employer bargaining power is becoming comparatively stronger, because if an employee quits her job, she will have very little accumulated capital at her disposal and limited opportunities to receive a loan due to the underdeveloped financial market. As a result of their weak bargaining power, employees agree to lower pay and worse labor conditions.

The small amount of accumulated capital owned by the vast majority of households could be another reason for income inequality, along with the dif-

difficulties arising by migrating from depressed to fast-growing regions, difficulties in conducting business as an alternative to hired labor, the underdeveloped social security system, etc.

## 5. Conclusions

In 1955, Simon Kuznets published a paper asserting that the correlation between economic growth and income inequality resembles an inverted U-shaped curve. This conclusion influenced a great number of scholars, for whom the correlation asserted by Kuznets became the criterion by which they judged their own assumptions and results. However, Kuznets' assertion was difficult to test: to this end, one needs to track the changes in the level of inequality in an economy that managed to move from poverty to a high level of development. Thomas Piketty succeeded in this to a large extent, by tracking changes in the level of inequality in several developed countries over a much longer period than Kuznets. Piketty obtained a different picture of the correlation between economic growth and income inequality. In particular, instead of falling levels of inequality at the high income stage, Piketty discovered the opposite result, i.e., an increase in inequality.

The author of "Capital in the 21<sup>st</sup> Century" is concerned that rising inequality will lead to an increase in the influence of wealthy individuals, who may use their influence to change the political and economic institutions in their favor. To avoid this result, Piketty suggested fiscal measures that could slow down the growth of inequality.

Since the Russian economy has been stagnating in recent years, it is highly likely that the problem of rising inequality mentioned by Piketty will be relevant for it. The reaction to increasing inequality should be a redistributive policy. The specific form of such income redistribution is a topic for a separate discussion.

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