

Economic Complexity and Inclusive Growth in a Climate of Outside Sanctions

Complejidad económica y crecimiento inclusivo en un clima de sanciones externas

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ABSTRACT:

Purpose of the study. Critical analysis of the use of the Economic Complexity Index to assess inequality in Russia in a climate of anti-Russian sanctions. **Methods.** A combination of the economic complexity model, the theory of sustainable inclusive economic growth, competition theory, and institutional theory. **Results.** The authors have critically conceptualized the possibility of utilizing the Economic Complexity Index in relation to Russian income distribution practices. They have identified some of the reasons why and areas where the index fails to properly reflect income inequality realities in Russia based on statistical materials and assessed the risk of declines in export diversification in a climate of anti-Russian sanctions. **Conclusion and significance.** The impact of the structure of exports on inequality is not always apparent, and the Economic Complexity Index does not take account of external institutional factors like outside sanctions. Trends suggesting a link between the degree of export diversification and inequality may not always attest to inclusive growth in the economy. **Rationale for scientific novelty.** The paper is focused on the analysis of 2 major concepts – economic complexity and sustainable inclusive growth – and explores the potential for coordinating these in combating inequality in a climate of outside sanctions. **Keywords:** economic complexity, inclusive growth, competitiveness of the economy, diversification of exports, Economic Complexity Index, income inequality, social competitiveness, anti-Russian sanctions

RESUMEN:

Propósito del estudio. Análisis crítico del uso del Índice de Complejidad Económica para evaluar la desigualdad en Rusia en un clima de sanciones contra Rusia. **Métodos.** Una combinación del modelo de complejidad económica, la teoría del crecimiento económico inclusivo sostenible, la teoría de la competencia y la teoría institucional. **Resultados.** Los autores conceptualizaron críticamente la posibilidad de utilizar el Índice de Complejidad Económica en relación con las prácticas de distribución del ingreso en Rusia. Han identificado algunas de las razones y las áreas en las que el índice no refleja adecuadamente las realidades de desigualdad de ingresos en Rusia basadas en materiales estadísticos y evaluaron el riesgo de reducciones en la diversificación de las exportaciones en un clima de sanciones contra Rusia. **Conclusión y significado.** El impacto de la estructura de las exportaciones sobre la desigualdad no siempre es evidente, y el Índice de Complejidad Económica no tiene en cuenta factores institucionales externos como las sanciones externas. Las tendencias que sugieren un vínculo entre el grado de diversificación de las exportaciones y la desigualdad pueden no siempre atestiguar el crecimiento inclusivo en la economía. **Justificación de la novedad científica.** El documento se centra en el análisis de dos conceptos principales: la complejidad económica y el crecimiento inclusivo sostenible, y explora el potencial para coordinarlos en la lucha contra la desigualdad en un clima de sanciones externas. **Palabras clave:** complejidad económica, crecimiento inclusivo, competitividad de la economía, diversificación de las exportaciones, índice de complejidad económica, desigualdad de ingresos, competitividad social, sanciones contra Rusia

1. Introduction

Despite numerous research studies and scholarly essays devoted to, as well as a major effort by certain companies to help the cause of, smoothing out income inequality and combating poverty in both developing and developed economies, the issue has yet to be resolved and there is still relevance in searching for ways to rectify this problem. Global inequality is characterized quite vividly by the following correlation: based on the 2016 report by the Credit Suisse Research Institute, 1% of the world's wealthiest households own 50.8% of all global assets (Credit Suisse Research Institute, 2016). Inter-country differences are characterized by a significant amount of differentiation in average income per capita, with household income in OECD member states being, respectively, 3.3, 11.3, and 17.7 times that in Latin America, South Asia, and Africa south of the Sahara. Inequality is becoming sustainable and reproducible, forming a "closed loop system of reproducing inequality". Only France and Japan are currently distinguished by declining levels of inequality.

A key actor in the struggle against inequality is the government, although its capacity to fully support the socially disadvantaged strata of the population is clearly not unlimited. On the one hand, due to its social orientation, the state has an obligation to provide social protection to its citizens, while, on the other hand, its lack of funding results in decreased expenditure on the social sphere, and, on the third hand, there is the need for sustainable growth in GDP to ensure boosts in the well-being of the entire population (Dubovik, 2016). So how does one compromise between these differently vectored objectives?

The lack of clear-cut benchmarks here is leading, in a climate of budget deficits arising in conjunction with falling prices on energy resources exported by Russia, to a major divergence of views as to resolving this. It may be seen through the example of Russia that, despite short-term periods of GDP growth and budget surplus based on revenue from the sale of oil and gas and resource rent, inequality has been high and rising in recent years. The income of 10% of the nation's wealthiest households has been rising 6 times faster than the median national income, while 13% of Russians have seen their income fall compared with 1989. Against a backdrop of recessionary phenomena in the economy and in light of an ongoing redivision of the world market and the latest technological challenges, the state's social function remains overriding. For instance, between 2000 and 2015 the nation's expenditure on the social sphere rose from 7.8 to 12.4% of GDP, while its consolidated budget revenue declined from 36.2 to 33.3% of GDP. In the past 25 years, real income amongst the Russian population has grown about 1.7 times on average, albeit this applies to just 23% of the population (European Bank for Reconstruction and Development, 2016). Currently, 20–25% of the nation's total revenue (before taxes) is concentrated in the hands of 1% of Russia's population (Novokmet, Piketty, & Zucman, 2017).

Among the major institutions expected to contribute to resolving the problem of poverty are the nation's businesses. Correlating input from the state, business, and civil society is a matter of particular significance for Russia and other developing nations at this time.

Worthy of special mention in this respect is the experience of the People's Republic of China, which has remained true to Confucian principles of social harmony as the basis for effective state governance. Investment in the nation's social sphere and human capital will always have long-term repercussions for its economic development. This is why, it is so important for the state to remain true to and try to fulfill its social obligations.

To enable indirect assessment of the impact of diversification in and the complexity of the economy, as a whole, and exports, in particular, in relation to inequality, scholars R. Hausmann and C.A. Hidalgo of Harvard University introduced in 2011 the so-called Economic Complexity Index (ECI). This indicator is grounded in the complexity of a nation's export product mix. Accordingly, diversity and complexity require attracting more manpower, boosts in employment and income, and declines in differentiation (Hausmann, Hidalgo, Bustos, Coscia, Chung, et. al., 2011; Hidalgo, Klinger, Barabási, & Hausmann, 2007).

In the 1980s, a GDP growth of 3% provided for an employment growth of 1%, while in the 1990s achieving the same result now required an increase of 8% in GDP. Based on data from the World Bank, if income increases 1%, the poverty level shrinks 4.3% in countries with the lowest income inequality levels and 0.6% in those with the highest ones (World Bank Group, 2016). Based on estimates by the IMF, lifting the income share of the rich by 1 percentage point causes GDP growth to decrease by 0.08 percentage points, while lifting the income share of the poor and middle class by 1 percentage point results in GDP growth increasing by as much as 0.38 percentage points in a country over five years. Statistics for the OECD attest that an increase of 0.03 percentage points in the Gini coefficient reduces economic growth by 0.35 percentage points annually. It follows that GDP growth rates alone cannot resolve the problem of inequality and poverty in both developed countries and elsewhere. The issue is also governed by the accelerated pace of technological changes and informatization in the economy, the increasingly wider use of robots to replace human labor, especially in low-level labor, and, as a result, the freeing up of a major portion of the nation's workforce. The nation is regarded as competitive if it quantitatively surpasses other nations in per-capita GDP, a key macroeconomic metric. Yet, this kind of quantitative superiority does not necessarily signify the nation is doing just great when it comes to its population's well-being and quality of life. Your nation may lead the way in production costs, but your land may be uninhabitable due to poor ecology or may be dependent from value chain counterparties, or it may be an undemocratic or corrupt state. Most of the time, you have a combination of these characteristics, which may augment the impact of negative factors.

So, to what degree does the use of economic complexity align with the assessment of inequality when it comes to Russia and how can it possibly help mitigate inequality in Russia in a climate of stiffening anti-Russian sanctions?

2. Methods

Traditional comparative advantage theories have associated a country's competitive potential and specialization with the special nature of its core national institutions and the degree to which it is endowed with labor, capital, natural resources, and financial resources (Blaug, 1994; Samuelson, 1953). The effective management of these fundamental factors makes it possible to put together production complexes and modify the nation's export specialization. In the 1930s, scholar S. Kuznets proposed the use of a nation's per-capita GDP as an aggregated indicator for assessing economic efficiency (Kuznets, 1955). This indicator has been employed extensively since then, but in recent years it has periodically been subject to criticism (Stiglitz, 2015; Stiglitz, 2016; Coyle, 2016). However, the times when nations competed to outdo each other in indicators of economic growth are now long gone. A country is attractive to live in, and in this sense is competitive and a good choice for people, if its population does not suffer from all kinds of inequality and discrimination. This way to look at things makes it possible to speak of the importance of social competitiveness. In this regard, there may be relevance in the use of novel approaches to researching the subject. There are alternative theories that are focused on GDP's export component – and not only in terms of volumes and quantities but inclusive of the structure of a nation's exports as well. In 1943, P.N. Rosenstein-Rodan demonstrated that industrial or structural transformations within a nation's economy will always have an effect on the way income is distributed within that nation (Rosenstein-Rodan, 1943). Most research into income differentiation has divided the economy into the agrarian, industrial, and service sectors. Scholars A.O. Hirschman (1945) and O.C. Herfindahl (1950) prioritize constructing integrated indicators of differences, diversity, and concentration. K. Frenken, F. Van Oort, and T. Verburg T. (2007) provide an answer to the question about the impact of the diversity of related and unrelated products on economic growth. P.P. Saviotti and K. Frenken (2008) have investigated the potential for diversifying export production operations into related, affined (in terms of raw materials, components, or technologies), or remotely related products. R.A. Boschma and S. Iammarino (2009) have looked into the interrelationship between Italy's economic growth, trade links, and diversity of accompanying traded goods. ECI developed by R. Hausmann and C.A. Hidalgo makes it possible to explore the structure of a nation's export production operations and assess its effect on a number of social indicators. Despite the diversity of indexes utilized by researchers today, many share the same indicators, employ reasonable components, and, in whatever way, are target-driven. For instance, the Human Development Index (HDI) factors in life expectancy at birth, literacy, and GNI per capita (PPP US\$). The Global Competitiveness Index (GCI) is made up of 114 variables, of which 34 (e.g., foreign debt, budget deficit, lifespan, etc.) come from publicly available sources and the rest from a special survey of company executives (the Executive Opinion Survey). The 2016–2017 competitiveness rankings place Russia 43rd among 138 countries (GCI = 4.5), and the ones published a year earlier rank the nation 45th (4.4) among 140 nations. To compare, the 2016–2017 report ranks Switzerland 1st (5.8), China 28th (5.0), and Yemen 138th (2.7) (World Economic Forum, 2017). The Happy Planet Index (HPI) is based on 3 major components – subjective life satisfaction, life expectancy at birth, and "ecological footprint" per capita. The Index of Economic Freedom scores nations on 10 broad factors of economic freedom, i.e. the degree to which the government intervenes in the activity of various business entities. The merits of a particular index consist in how informative it is, how well it reflects the essence of the area in question – education, the business environment, health care, well-being, as well as how well the indicator lends itself to management.

The authors of ECI have managed to represent more subtly the complexity of a nation's exported product mix and remediate certain imperfections of previous measurement systems. The ECI makes it possible to construct graphs in the product space and assess the "remoteness" of a particular product from the center, and that signifies the economy's degree of development and level of diversification (Hidalgo et al., 2007). Next, the index can be used to evaluate the formation and distribution of income for various nations. What makes the economic complexity indicator particularly valuable is that, based on materials obtained, the authors R. Hausmann and C.A. Hidalgo have put together the so-called Atlas of Economic Complexity. The product space here is represented by different colors, which reflects the diversity of products, markets, technologies, and sectors. If the graphs' vertices are in a single solid color, e.g. black, that is testimony to the nation's exports being lop-sided, e.g. its major focus is on oil. One and the same color may also signal the creation of a relevant institutional environment that is facilitative of the emergence and development of new industries and production networks, conducive to political stability, and may help reduce the nation's dependence on the sale of natural resources (Hausmann et al., 2011). Scholar F. Bourguignon suggests exploring the issue of inequality through the use of a special model – the "poverty – growth – inequality" triangle (Bourguignon, 2004), while M. Ravallion looks into the interrelationship between economic growth and poverty reduction (Ravallion, 2013). Both authors have pointed out the social orientation of inclusive growth. That being said, alongside social imperatives, inclusiveness presupposes improvement in the quality of life for absolutely all strata of the population, as well as reduction in income inequality and boosts in the accessibility of education, health care, and food (Ranieri & Ramos, 2013). In addition to the above characteristics, certain authors supplement inclusive growth with the need for structural transformations in the economy factoring in "green principles". In this regard, it is relevant to consider environmentally sustainable inclusive growth (OECD, the World Bank, & the United Nations, 2012; Maksimova & Bondarenko, 2017).

The ECI system factors in the number of products exported by a nation and their complexity. Its authors elegantly prove that nations where the indicator is easily filled with information are characterized by good macroeconomic indicators, are deeply integrated into global value chains, possess innovative technology, have decent prospects for tapping into novel adjacent production operations, and are more

competitive. The affinity of technologies employed makes it possible to forecast and discover new export opportunities.

The interrelationship between a nation's production structure and social differentiation is governed by the following factors. It is clear that manufacturing a minor set of simple exported goods requires simpler jobs, most of which are low-paid. It is worth noting that in developing nations the emergence of new jobs and specialties leads to an increase in the size of the middle class, which results in a reduction in the income gap and inequality (Milanovic, 2012). Whereas in developed countries technicalization and the discontinuation of certain specialties lead to increased unemployment among low-level workers and greater inequality. Another reason is associated with the complexity of knowledge used in the manufacture of exported products. If it is simple products with low added value, you will, accordingly, need standard knowledge that does not require much education or a college degree. Consequently, the cost of human capital in the nation is low, labor productivity, and, accordingly, the productivity of human capital, is low, and pay is low. All this does little to motivate workers to create professional networks and augment the role of labor unions, which could advocate for increases in pay, and, ultimately, does not lead to reductions in economic inequality (Hartmann et al., 2017). A new measurement system was introduced recently – the Inclusive Development Index (IDI). The index is based on 3 major groups of indicators characterizing growth and development, inclusion, intergenerational equity, and sustainability. On this indicator, Russia is currently ranked 13th among 78 developing economies. According to experts from the World Economic Forum, this measurement system does the more full-blooded and comprehensive job reflecting the development of an economy oriented toward man. Not all strata of the population take their due part in providing for quantitative GDP growth or economic growth, which in the long run results in a surplus of manpower in the labor market and an increase in inequality. By contrast, an orientation toward inclusive economic growth presupposes the engagement of the entire population in fostering growth in global GDP, which should result in improvements in the standard of living, reductions in the income gap, and boosts in the well-being of all of society, not just particular elites within it. In other words, improvements in the well-being of the low-income strata of the population will not have to cause declines in the well-being of citizens with higher income.

3. Results

In the ECI, Russia dropped from 29th spot in the recessional 1998 to 55th in the post-recessional 2009 (Table 1).

Table 1
Dynamics of Indicators of Economic Complexity (32) and the Gini Coefficient for Russia (29)

Year	Rank	ECI value	Delta	Gini coefficient value	Percentage of the population falling below the poverty line, January–December
2016	-	-	-	0.414	13.5
2015	45	0.21483	+6	0.412	13.3
2014	51	0.0799	-4	0.416	11.2
2013	47	0.27423	+5	0.419	10.8
2012	52	0.08221	-1	0.420	10.7
2011	51	0.03703	-9	0.417	12.7
2010	42	0.38705	+13	0.421	12.5
2009	55	0.02577	-12	0.421	13
2008	43	0.28412	-0	0.421	13.4
2007	43	0.35041	-0	0.422	13.3
2006	43	0.4367	-1	0.415	15.2
2005	42	0.46881	-5		17.8
2004	37	0.4918	-2	0.409	17.6
2003	35	0.52633	-2	-	20.3
2002	33	0.57342	+2	0.387	24.6
2001	35	0.533	-4	-	27.5
2000	31	0.60883	+7	0.395	29
1999	38	0.47264	-9	-	28.4
1998	29	0.65513	+6	0.394	23.4
1997	35	0.45247	-1	-	20.8
1996	34	0.59491	+12	0.387	22.1
1995	46	0.27489	+7	-	24.8

1994	-	-	-	0.409	22.4
1992	-	-	-	0.289	33.5

Ever since they started to calculate the ECI, the way has always been led by Japan, with an ECI of over 2. Russia's ECI has always been below 1, which, in the view of the ECI's authors, is testimony to Russian exports being poorly diversified and is a key reason behind the nation's typically high inequality levels. That being said, it should be noted, based on Table 1, that the nation's quite steady performance in terms of economic complexity in the period 2002–2004 was accompanied by spikes in inequality, while declines in its ECI score were accompanied by declines in the Gini coefficient starting in 2007. Note that the nation's net exports peaked in 2009 and 2015, registering at 5.2% and 6.2% of GDP respectively. In 2009, Russia had its lowest ECI ranking, placing 55th (ECI = 0.02577 and inequality = 0.421), while in 2015 its ECI score improved to 0.21483, and its inequality performance = to 0.412. R. Hausmann and C.A. Hidalgo substantiate once again that a universal tool for combating inequality has yet to be worked out. Along with other assumptions, the economic complexity indicator presupposes the openness of an economy. As a WTO member, Russia has to follow the rules of that international organization, which do not provide for sanctions to be brought to bear on a nation. However, in a climate where Russia and a number of other nations are facing this kind of restrictions there is a need to employ other measures of survival, like import substitution, which contravenes WTO regulations. The model by R. Hausmann and C.A. Hidalgo does not factor in the fact that a policy of import substitution changes things significantly. This may be due to that the active pursuit of a policy of import substitution presupposes the robust accumulation of specific knowledge and assets in relevant sectors of the economy. In other words, one brings into play the "young" sector argument from the theory of protectionism. Due to their "age", "young" sectors cannot compete on an equal footing with similar sectors in other countries, which makes their share in the nation's exports just negligible. If these "young" sectors are technologically complex at that, their contribution to the ECI indicator is normally just too low or none altogether (Dubovik & Ermolaev, 2017). The ECI requires lots of statistical data on all goods and across different countries. This kind of detailed information is available on online resources dealing with customs-based statistics on exports and imports. However, the structure of exports may differ significantly from that of production, as not all goods manufactured in the country are exported. The indicator also does not factor in services, although these make up as much as 50% of GDP in certain countries. The indicator's qualitative aspect is also characterized by the fact that the term 'complexity' does not work the same way for all goods, with a 4-digit HS classification taking account of the complexity of exported goods only, whereas, say, cars may differ in complexity. Thus, the ECI indicator does not do a sufficiently good job factoring in a nation's dynamic comparative advantages forming based on its strategic trade policy.

Since the imposition of anti-Russian sanctions, foreign trade statistics have demonstrated a number of changes of both a positive and negative nature (Table 2). Thus, for instance, in the period from January to October 2016 Russian exports dropped by 21.5% compared with the same period in 2015. The most significant factors behind the decline were not so much geopolitical ones as falling global prices on hydrocarbons, with sales to CIS member states dropping by 44.9% over the 2 years and to nations beyond the CIS even a bit more – by 46.6%. Based on data from the Bank of Russia, in the period January–May 2017 the nation's current account surplus on the balance of payments was \$27.0 billion, a 1.7 times increase on the same period the previous year. In part, this may be explained by the strengthening of the nation's trade balance surplus as a consequence of advanced growth in exports following some improvement in the situation in the world market for fuel-and-energy products. Concurrently, the nation witnessed a rise in the deficit on the balance of services, wages, and secondary income. However, the above factors had much less impact on the size of the current account of the balance of payments. The nation's exports and imports posted a slow-down in growth in June 2017, with exports rising by 22.8% year-on-year and imports by 30.2% (Analytical Center for the Government of the Russian Federation, 2017, August).

Table 2
Contribution of Demand Components to Russia's GDP Increase, 2007–2015, %

	2007	2008	2009	2010	2011	2012	2013	2014*	2015*
GDP increase, %, inclusive of:	8.5	5.2	-7.8	4.5	4.3	3.5	1.3	0.7	-3.7
Consumption	7.1	5.5	-2.6	2.5	3.6	4.2	2.5	0.8	-5.4
<i>Household expenditure</i>	6.3	4.9	-2.5	2.8	3.4	3.7	2.3	0.8	-5.2
Net exports	-2.5	-2.8	5.2	-2.0	-4.0	-1.6	0.5	1.8	6.2
<i>Exports</i>	2.1	0.2	-1.5	2.3	0.1	0.4	1.3	0.2	1.0
<i>Imports</i>	-4.6	-3.0	6.7	-4.3	-4.1	-1.9	-0.8	1.7	5.1
Statistical discrepancy	-0.2	-0.1	0.0	-0.2	0.0	0.0	-0.1	0.0	-0.7

Note. Data on increases in GDP and its components for the period 2012–2015 have been recalculated by Rosstat using a new methodology. *Since 2014 – inclusive of Crimean Federal District. Data from Bulletin of the social and economic crisis in Russia, Foreign trade: change in structure and dynamics, 2016.

A no less important and serious factor in the worsening of inequality is the outflow of capital from Russia. "Capital flight" from Russia has accelerated 1.7 times: from \$10.3 billion in 2016 to \$22.4 billion in the 1st half of 2017. The most significant effect on these dynamics came from business dealings from the 1st quarter of 2017, with net capital outflow then slowing down significantly in April–May. As regards the structure of outflow capital, compared with the year 2016, a major focus has been on operations by the banking sector related to placing foreign assets and repaying foreign liabilities. By contrast, there are sectors that appear to facilitate *bringing* funds into the economy, being oriented toward net capital inflow. A fresh study by F. Novokmet, T. Piketty, and G. Zucman, which explores inequality in Russia, stresses the non-transparency of official Russian statistics on income and discusses the possible reasons behind this kind of propensity to disguise things. The scholars note that 75% of Russia's national income – \$60.8 trillion – is currently held offshore. The authors also point out a greater income gap compared with what is reported by official sources (Novokmet et al., 2017). In the

report, the scholars are at a loss as to why inequality is not being combated in Russia through such universally recognized areas as instituting progressive taxation, **restricting oligarchs' profit margin, and nationalizing the country's strategic sectors. It is also recommended that state officials be more modest in their expenditure.**

Apart from manageable or internal factors at a microlevel, a significant impact comes from certain outside influences, beyond control, both at a macrolevel (e.g., geopolitical instability or falling energy prices) and on a global scale (e.g., change of "techno-economic paradigm, natural disasters, terrorism, or epidemics).

In the early 21st century, amid high economic growth rates, Russia demonstrated positive dynamics of reduction in poverty, with the income gap amongst a significant portion of the population shrinking – although, at the same, time, the number of super-rich citizens increased at a much higher rate (currently, Russia ranks 15th globally in the number of millionaires in the nation). The nation experienced an increase in the size of the middle class, with the income of 40% of the most disadvantaged citizens increasing faster than that of the rest. In other words, this kind of economic growth met the requirements of inclusiveness. The subsequent worsening of the investment climate, halting of reform, and restraining of economic diversification and reindustrialization may be regarded as key barriers to ensuring inclusive growth and social progress in recent years. On the one hand, the imposition of anti-Russian sanctions is facilitating the diversification of the economy, and, consequently, its inclusiveness, and, on the other hand, is narrowing the potential for expanding the export product mix. The sanctions are significantly restraining and inhibiting the development and use of high technologies within Russia's raw materials sector. This appears to be a major paradox today.

Regarding Russia's income dynamics, despite positive dynamics of increase in nominal pay (an April 2017 increase of 6.7% on the same period the previous year – 39,253 rubles), real disposable household income has been on the decline. 7 months into 2017, real disposable household income shrank by 1.4% versus a drop of 2.3% in May, with real pay growing 3%. Table 3 displays the dynamics of Russia's household income observed in the last few years (Analytical Center for the Government of the Russian Federation, 2017, February).

Table 3
Dynamics of Household Income and the Consumer Price Index in Russia in Per-Year Terms, 2013–2016, %

		2013	2014	2015	2016	7 months into 2017
Income	nominal	11.7	7.1	10.6	1.0	
	real disposable	4.0	-0.7	10.6	1.0	-1.4
Pay	nominal	11.9	9.1	5.1	7.8	
	real	4.8	1.2	-9.0	0.7	3.0
Pensions	nominal	9.7	8.8	11.2	3.4	
	real	2.8	0.9	-3.8	-3.4	
CPI	on average as of January–December period	6.8	7.8	15.1	7.1	3.7

Further, one is witnessing not only an accelerated stratification of society but an increase in poverty levels and impoverishment among the population – and that is despite the fact that from 2000 to 2016 the share of the population falling below the poverty line reduced from 29% to 13.9%, which had to do with both cost-of-living adjustments and non-transparent statistical data (Table 1) (Ministry of Economic Development of the Russian Federation, 2017). This may be due to several factors. Firstly, there are increases in pay only, while the other types of income are being ignored. Secondly, about a third of the population work "in the shadows" and are paid "under the table". Thirdly, official statistics compare the income of 10% of the poorest households with that of 10% of the richest ones, with the concept of household in Russia being a bit different from that of an average household in the West. Fourthly, there is an increase in the stratum of top-level managers who aside from their base salary also enjoy all kinds of pay increases and bonuses that oftentimes are not comparable to the size of their base salary. Fifthly, Russian society now has so-called "working poor" families – families whose major source of income is wages that are not big enough to provide for even basic living needs.

Among the post-Soviet states, Russia has led the way in income differentiation and poverty levels (Table 4) (Eurasian Economic Commission, 2016).

Table 4
Population Differentiation and Poverty Levels in Certain Post-Soviet Nations at Year-End 2015

	Gini coefficient	R/P 10%	Poverty level
Armenia	0.374	16.4	29.8
Belarus	0.276	6.1	5.1
Kazakhstan	0.278	5.6	2.7
Kyrgyzstan	0.408	11.8	32.1
Russia	0.412	15.6	13.3

From Soviets to Oligarchs: Inequality and Property in Russia, 1905–2016' (Novokmet et al., 2017) is a recent study that offers some interesting insights on the subject. On the one hand, the ECI indicator reflects the complexity of the nation's exports and the degree to which they are saturated and its economy is diversified. On the other hand, the study notes the fact that the Russian Federation had a large trade balance surplus over a lengthy period of time, from 1990 to 2015, but, at the same time, the size of its accumulated foreign assets was somewhat modest. Among the reasons pointed out by the authors is the channeling of capital to offshore jurisdictions, which now hold as much as 60.75 trillion rubles. The veracity of data on inequality in Russia is also somewhat dubious, although during the period 1989–2016 Russia's national income per capita at purchasing power parity increased from €16,000 to 24,000 (Novokmet et al., 2017). Most tax and financial statistics appear to be discrepant, lack transparency, and lack agreement with each other. The loyalty of

oligarchs to state policy and their regular involvement with the government may be forcing the latter to manipulate statistical data and display tolerance toward the growing income differentiation (Table 1). Note that in 2000 the Gini coefficient for Russia was 0.395, while in 2016 it was 0.414. Russia has witnessed a substantial degree of income mobility. For instance, people who were in the bottom tercile of the income distribution during the 1990s have moved up into the middle and top tercile, with the middle group splitting up by half into the rich and poor and 22% from the richest tercile getting into the poorest tercile (European Bank for Reconstruction and Development, 2016).

In inequality, Russia has caught up with Western nations, passed China, and reached the national 1917 level. According to the 2014 Global Wealth Report by the Credit Suisse Research Institute, 84.8% of Russia's national wealth is concentrated in the hands of 10% of the population (in the US – 74.6%, China – 64%, and Japan – 48.5%). This may be associated with such a process characteristic of most transitional economies as the government fusing with the oligarchate – here it is not about industrial capital fusing with banking capital (like it used to be at the outset of capitalism) but capital that was robbed during the barbaric period of privatization and illegally appropriating and distributing the nation's resource rent. Besides, there are concerns regarding statistics transparency and data source discrepancies, like, for instance, is the case with the current, all-too-common, drop in inflation as a consequence of changes being made to its key indicators (Novokmet et al., 2017).

4. Discussion

By no means to justify the concerns regarding the assessment of inequality in Russia highlighted in the above report, it is worth noting the fact that in 2014 certain sectors of the Russian economy, and later certain companies and persons, became the object of economic sanctions, which should be regarded as discriminatory measures (Decree of the President of the Russian Federation No. 208, 2017). The nation's risk management strategy presupposes activities on working out, implementing, and assessing the effectiveness of actions aimed at countering the sanctions. Among the most logical options for the state is a policy of import substitution. The imposition of these sanctions has helped to expose certain hidden problem areas, reveal the nation's true potential, and, as a consequence, help it boost product diversity. Still, it is pretty hard to properly assess the potential consequences of this kind of sanctions on a short-term horizon. Long-term results may be required to be able to tell how significant the impact of sanctions is, for up to this point the expectations for a decrease in inequality thanks to the diversification of the domestic economy have not been realized yet. One of the inferences from the application of the model arrived at by the authors of ECI is that countries that export complex products have lower levels of income inequality than those exporting simpler products (Hartmann et al., 2017). This conclusion could, however, be challenged. Take Belarus, for instance. Subsequent to the introduction of anti-Russian sanctions, the nation has witnessed a major boost in its export potential, with its export product mix expanding. During the period January–April 2017, the nation's exports to Russia grew 9.8% in physical terms relative to the same period the previous year (National Bank of the Republic of Belarus, 2017). Having said that, no improvement has been detected with respect to indicators of inequality, with the Gini coefficient rising from 0.276 to 0.279 between 2015 and 2016 and from 0.256 to 0.279 in the period 2005–2016, while in Russia it went up from 0.409 to 0.414. The rate of growth in the size of real pay in percentage from the previous year dropped between 2012 and 2016 from 121.5 to 96.0 (European Bank for Reconstruction and Development, 2016). The thing is that Belarus's exports are dominated not by output that is produced but by output that is re-exported. Besides, most official statistics on inequality are not readily available to the public or are presented in rather soft-pedaled form. For instance, no data on unemployment levels in the Republic of Belarus are provided in the official statistical survey of Eurasian Economic Union member states. This may require approaching the various aspects of inequality in a differentiated fashion.

The period of profound stratification is characterized by inequality across all areas – social, information (as a result of robotization and digitalization), educational, professional, gender, confessional, and economic. Special attention should be devoted to interregional gaps in income. Apart from income inequality, one is increasingly witnessing the widening of opportunity inequality as well. The authors of the theory of economic complexity have extended their views beyond the production sector. Suggestions have also been made regarding the possibility of forecasting the nation's need for institutions of learning, professions, specialists, and programs. Through the example of Russian colleges, one could note the low demand for high-level technical specialties witnessed in the past 20+ years. That being said, to be able to get out of this vicious circle of the low complexity of production and exports, the nation specifically needs specialists with a "complex" high-tech education. The Russian educational landscape is currently increasingly witnessing mergers and acquisitions among colleges, which is leading to reductions in curricula and personnel and the standardization of graduates. In the quest for rankings, one may end up with declines in the quality of training, increases in the number of reports, duplicate documentation, and the actual educational process getting formalized. In 2015, the Teaching and Learning International Survey found Russia to be among the world's most bureaucratized nations when it comes to the education system. In pursuit of per-capita funding, the school system has to balance between its educational and social functions, and standardization and homogenization may rule out the variability of education and shut out the potential for unlocking learners' individual abilities. Graduates from low-income families have fewer opportunities to prepare for their exams properly, which may put them on an unequal footing with their peers from well-to-do families. This may result in the "unequal opportunity trap" and give rise to inequality in education.

Despite the emergence of new theories and methods, not all inferences and conclusions drawn from them would work and could be of benefit for Russia. The issue of how to reduce inequality in a climate of stiffening anti-Russian sanctions remains one of the most critical today.

5. Conclusion

Existing theoretical knowledge and the findings from the latest research into inequality in a climate of sanctions restrictions lead to the following conclusions:

- The economic complexity model substantiates that the use of the per capita GDP indicator appears to be insufficient for assessing income inequality and there is a need for indicators that factor in the qualitative characteristics of the population's standard of living and well-being. The income gap between developed and developing nations is apparent. Besides, lacking in objectivity is the way the model compares income in Western European countries with lower differentiation levels and densely populated Asian states. Since the ECI is calculated based on the Gini coefficient, it does not factor in the source of income – whether it derives from investment, employment, or subsistence farming (bartering). Thus, for instance, in lowly populated Sweden, 5% of households get profit off 77% of all shares in the nation. The index is also sensitive to the number of income categories. The more categories there are, the lower the aggregation level for income groups and the higher the Gini coefficient.

- A summarization of discussions on combating inequality available in the literature leads to the conclusion that the search for effective tools and metrics for managing economic inequality continues, and yet, to date, no universal method has been established to this end and a compromise has yet to be found between economic growth and inequality. Despite long-term sustainable economic growth in developed countries, income differentiation is increasingly on the rise. Besides, since a major portion of the world's population does not take part in economic growth, which is also a source of inequality, it appears to make sense to focus on indicators of sustainable inclusive economic growth.

- Amid the mounting pressure of sanctions and a recessionary situation in the Russian economy, the government is urged to reconsider its existing policies and look for new avenues for growth. Revenue from the sale of oil and gas is still the backbone of the Russian economy. Institutional restrictions like sanctions are likely to narrow the potential for assessing economic development using the ECI. The Inclusive Development Index does the more objective and comprehensive job reflecting the development of an economy that is oriented toward man.

- One gets to expand the product space and economic diversification via interlinked areas. The nation's economic development is impeded due its limited involvement with global value chains. In a climate of sanctions restrictions, it may help to build not only production chains but production networks, as well, across available space. Networks presuppose not only production processes per se but services provided by suppliers and related to marketing, logistics, finance, and social infrastructure.

- Russian realities suggest that to reduce inequality it will not be enough to only rely on constant effort from the state – there is the need to also combine the efforts of civil society, the business community, nongovernmental organizations, as political slogans alone will not help much. Inequality depends on how fast the nation develops its major institutions. In the area of Russia's social policy, of significance is one taking personal responsibility for planned activities and employing specific, real-world quantitative benchmarks. Based on estimates by scholar T. Piketty, 75% of Russia's national income is currently held in offshore jurisdictions. Putting these funds back into the economy will help boost the people's well-being, enhance the nation's social infrastructure, and reduce inequality. Poverty in Russia is currently characterized by traits that are both similar to those in post-Soviet nations and those that are distinctive and inherent only to it. It is distinguished by being inhomogeneous. There is a separate category – “the working poor”, with a much more significant reason behind inequality being unequal opportunities – those related to education, in particular.

- Economic complexity, as a holistic indicator, is more relevant for inter-country income inequality comparisons, i.e. comparing countries that have more or less similar economic indicators. But, when it comes to comparing different regions or cities within the nation with different population sizes, other assessment criteria may be required. As regards Russia, any of its regions may be compared with an entire European country, i.e. average European figures do not provide an objective picture of inequality across countries. None of the metrics for criteria within this methodology fits Russian realities (particularization by structure of the population, employment, various types of households, or geography). The concept of household as applied to Russia is distinct significantly from the one adopted for Western nations. Therefore, all these indicators calculated per household are not comparable with metrics for Russia.

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