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Financial Wealth in Macroeconomic Dynamics

O.S. Sukharev[a], **E.N. Voronchikhina**[b]
[a] Russian Academy of Sciences, Moscow, Russia;
[b] Perm State National Research University, Perm, Russia

ABSTRACT

The article examines the financial wealth that affects macroeconomic dynamics from a comparative perspective for some countries. **The purpose** of the study is to identify changes in financial wealth and determine their impact on macroeconomic dynamics, taking into account the assessment of the impact of the level of social indicators — inequality and poverty, in particular, on changing the goals of economic development — growth rate, human development index. **The methodology** consists of empirical, structural, comparative analysis, econometric modeling, which is reduced to the construction of multiple regressions based on the Gretl 2020b software module, multiplicative models by the type of production functions. Taking into account these methods, an analysis algorithm **has been developed** to assess the impact of financial wealth on macroeconomic dynamics. The implementation of this algorithm made it possible to carry out a comparative analysis of the results for Russia, the G7 countries and China in terms of the influence of financial wealth on their development. The main **empirical result** is that financial wealth has a stronger effect on economic dynamics and social indicators of development than non-financial wealth, and is associated with the growth rate of highly developed countries. For Russia, the growth of financial wealth, albeit small, was associated with high growth rates, however, the **econometric analysis** revealed that financial wealth did not have a decisive influence on growth rates, reducing the human development index, unlike other countries, this affected the increase in this index. **The authors conclude** that the Russian economy showed the lowest sensitivity of GDP to financial wealth, but high to the Gini index, with only China and Russia having a higher sensitivity to non-financial rather than financial wealth compared to other reviewed countries. **The prospect** of using the results is to adjust macroeconomic policy, monetary and financial instruments, taking into account the sensitivity of target macroeconomic parameters to financial wealth, including the differentiation of policy instruments for each country.

Keywords: financial wealth; economic growth rate; gross domestic product; inequality; poverty; human development index; macroeconomic dynamics; comparative analysis of countries

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INTRODUCTION

Modern economic growth is largely determined not only by investments [1] but also by their distribution between financial and non-financial assets [2]. The ability of a country to develop its economy depends on the amount of wealth and its structure in the form of financial and non-financial parts. Many studies have been devoted to the problem of assessing the impact of the financial structure and investments on economic growth [1–5]. In particular, financial development is assessed by whether it is determined by the banking sector or the securities market [6]. For some countries, the stock market may increase opportunities for economic development, while the banking market may slow it down; for others there is feedback. An outcome is possible when too rapid development of the financial sector will lead to a slowdown in economic growth or provoke a crisis [7]. At the same time, the structural parameters for income and risk will be of great importance in terms of ensuring the strength of influence on economic growth in both directions. Financial cycles also affect growth [8], including in the regional context.

However, the mentioned studies, as a rule, do not concern with the study of the consistency of the set of parameters of macroeconomic dynamics, including the components of wealth that characterize economic development. Although some of them set the task of assessing the impact of financial wealth on consumption,

it is presented in the aspect of providing, for example, housing wealth i.e. includes a complex of particular questions [9–11]. A significant part of the research is devoted to studying the structure of financial wealth and its impact on savings, portfolio investment, and other individual parameters of macroeconomic development [12, 13].

The authors believe that it is necessary to talk about the relationship between financial wealth, GDP growth, changes in inequality and poverty, and the human development index. The study of the relationship between these parameters allows us to find out how much growth is associated with an improvement or deterioration in the main social indicators of development along with a change in financial activity, an increase in the dominance of the financial sector and financial wealth.

The available studies of the relationship between inequality, poverty and growth [14–16] do not cover the above range of issues, which cannot but affect the ongoing macroeconomic policy, including the regulation of financial markets by monetary instruments. Usually, the subject of study is what exactly determines growth — inequality or poverty, and how the ratio between poverty and inequality, or some kind of financial conditions, changes. Aspects are also considered — how the macroeconomic dynamics changes in crisis conditions, in particular, the COVID-19 crisis of 2020 [17, 18]. The impact of the minimum wage on the level of poverty and inequality [19], and the relationship between economic growth, financial development, and the level of corruption [20] are assessed. A significant, if not overwhelming part of research is devoted to the impact of financial assets on various aspects of economic growth and financial savings and their relationship with various decision-making options, wealth and development [21–27]. The issues of the functioning of the financial sector in the context of globalization and integration are considered [28, 29].

At the same time, it certainly matters how the structure of wealth changes — financial and non-financial assets, what is its impact on macroeconomic dynamics, including the impact on these social indicators. Some studies show that banks and financial markets do not reduce poverty [30]. However, they can influence growth rates in other countries, increasing the possibility of increasing incomes. Then the solution to the problem of poverty comes down to the existence of institutions for the distribution of the created income. However, R. Zhang and S. Naceur in their study convincingly prove that the availability, depth, efficiency and stability of the country's financial development reduce inequality and poverty, and financial liberalization increases inequality and poverty [31]. The above estimates and works clearly show convincing data on the impact of financial wealth on economic dynamics, especially in a systemic context, i.e. considering changes in social indicators and their impact on growth. This is most clearly characteristic of the Russian economy and the system of public administration. Therefore, for the formation of a new model of economic growth in Russia, such a statement of the problem, a comparative analysis of the most economically developed countries, seems to be very relevant in practical terms and significant in scientific terms.

The foregoing allows us to indicate that the aim of this study is to assess the impact of financial wealth on macroeconomic dynamics, including changes in inequality and poverty. A research method is an econometric approach that allows, based on panel data for countries selected for comparative analysis, to conduct a generalized measurement of such an impact, considering the relationship of these parameters. Econometric modeling is carried out using panel data on the example of eight countries: USA, Canada, Germany, France, UK, Italy, Japan (G7 countries), and China. Separately, for the time series, simulations were carried out for Russia, so that the results obtained for the G7 countries and China could be compared. At the stage of calculations, the Gretl 2020b software module was used. Factorial models are also applied using the classical production function modified for the research problem. Here, the same countries are selected for comparative analysis, with the exception of Japan, since the time series for this country, in particular, for the Gini coefficient,

is incomplete.[1] Multiplicative models make it possible to estimate the sensitivity of the impact of financial wealth on the value of the gross domestic product and the level of inequality, measured by the Gini coefficient. In the article, wealth is understood as a value that consists of the sum of financial and non-financial parts: non-financial wealth is a combination of tangible and intangible assets (intellectual property); under financial wealth — the totality of liquid assets, i.e. money, securities, deposits, mutual funds, etc. Financial wealth does not necessarily have a physical form, unlike non-financial wealth.[2] The given idea of the structure of wealth, divided into non-financial and financial parts, allows us to set the task of finding out the impact of these parts of wealth on economic development (in terms of GDP dynamics) together with social indicators.

Next, we designate the methodology of the analysis being carried out and present the general algorithm and the main stages of this study.

RESEARCH METHODOLOGY. IMPACT OF FINANCIAL WEALTH ON ECONOMIC DYNAMICS

Previous studies have shown that changes in the economic structure significantly affect the development of the financial system [32], which adapts to them. The strength of the relationship between financial development and growth has been found to depend for a number of countries on private lending relative to real production growth [33], and the causal relationship between financial development and growth is bidirectional depending on the length of the period [34]. On short and medium-time scales, for low- and middle-income countries, such links are not found, and for high-income countries, growth affects financial development. As you can see, many studies reflect a stronger impact of growth on financial development and not vice versa, and they do not take into account the structure of wealth in the form of its financial and non-financial parts that affect economic growth in different ways. Some studies have shown that such influence can be quite significant [2, 35]. But over time, it changes and depends on many conditions [36], in particular, on the level of economic development, insurance institutions, and the functioning of financial markets. For individual countries, the impact may differ even due to existing differences, including institutional ones, in the functioning of stock and bond markets within each country.

Thus, the task of identifying the degree of influence of financial wealth in the context of changes in other relevant macroeconomic parameters on the target function (GDP dynamics) seems to be significant from the point of view of growth management. Its solution is reduced to the implementation of the following sequential set of steps that make up the research search algorithm.

Firstly, it is necessary to quantify the wealth structure of the analyzed countries (comparable objects), highlighting two main components — financial and non-financial wealth, bringing to the base year for comparability of estimates.

Secondly, to conduct an empirical study of the relationship between inequality, poverty, GDP and GDP growth rates on the size of financial and non-financial wealth, respectively. This will allow us to present the joint dynamics in the considered time interval and compare it across the studied objects — countries, understanding and presenting the relationships that have developed between the parameters.

Thirdly, to formulate the task of econometric modeling on panel data for the G7 countries and China and separately for Russia, in order to conduct a comparative analysis, setting the following target functions: human development index, gross domestic product, share of gross product in national wealth, economic growth rates (in terms of GDP).

Here is a general scheme of econometric research based on panel data for the G7 countries

[1] When using panel data, this circumstance is hidden, and with a factorial-multiplicative model, there are not enough points to build a model with good statistical verification.

[2] The Global wealth report 2021. Research Institute Credit Suisse. 2021. URL: https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

and China. Let us introduce the following designations:

Y — GDP, billion US dollars, in 2010 prices;

y — the GDP growth rate, %;

Y/W — the share of GDP in national wealth, %;

X_1 — the human development index;[3]

X_2 — the Gini index, %;

X_3 — the poverty level, %[4];

X_4 — financial wealth, billion US dollars, in 2010 prices;

X_5 — non-financial wealth, billion US dollars, in 2010 prices;

X_6 — the share of financial wealth in the total wealth, %;

X_7 — the share of non-financial wealth in total wealth, %.

The construction of a regression on the original data with a different number of factors based on panel data was carried out in the Gretl 2020b program. Regression model for a group of countries:

$$F(X_1. Y, Y/W, y) = b_{0i} + b_{1i}*X_2 + \\ + b_{2i}*X_3 + b_{3i}*X_4 + b_{4i}*X_5 + b_{5i}*X_6 + b_{6i}*X_7 + \varepsilon. \quad (1)$$

The factor selection method builds possible models with 2–6 factors for each of the chosen explanatory variables (X_1, Y, Y/W, y).

To identify multicollinear factors, a matrix of paired correlations is constructed.

To test the heteroscedasticity of random errors in the regression model, the Durbin-Watson statistical test was used. The test results showed the homoscedasticity of the random error variances of the models presented below in the study of regressions.

The H_0 hypothesis about the absence of residual autocorrelation was carried out using the Durbin-Watson test by comparing the DW statistics with the theoretical values of d_1 and d_u. In the models presented below, the DW values are in the interval $d_u < DW < 4 - d_u$, which indicates the absence of autocorrelation.

According to the analysis, multicollinear factors with linear pair correlation coefficients of more than 0.7 are the following factors: $X_2 - X_3$; $X_1 - y$; $X_3 - X_4$; $X_3 - X_5$; $X_3 - Y$; $X_4 - X_7$; $X_4 - X_5$; $X_4 - Y$; $X_5 - Y$.

The best models were identified by the rejection method (according to the tightness of the connection of the series, while observing other statistical criteria for checking the model), without considering collinear factors. All the models obtained for the G7 countries and China are significant according to the Fisher criterion, the regression coefficients for all factors are significant with a high coefficient of determination for all models, except for the GDP growth rate, where the regression coefficients are not significant for all factors with a low coefficient of determination.

For the Russian economy, according to the analysis, the following factors are multicollinear factors with linear pair correlation coefficients of more than 0.7: $Y/W - X_2$; $Y/W - X_6$; $Y/W - X_7$; $X_1 - Y/W$; $X_1 - X_6$; $X_1 - X_7$; $X_2 - X_4$; $X_2 - X_5$; $X_2 - X_7$; $X_3 - Y$; $X_3 - X_4$; $X_3 - X_5$; $X_4 - Y$; $X_4 - X_5$; $X_5 - Y$; $X_6 - X_7$.

The application of the method of successive elimination of collinear factors made it possible to obtain the best regression models for Russia.

The models for Russia are significant according to the Fisher criterion, and the regression coefficients for the factors are also significant with a high coefficient of determination, with the exception of one coefficient for the X_3 actor in the model for the human development index. However, this circumstance does not greatly affect the picture of both the comparative analysis of countries and the actual analysis of the relationship between the relevant parameters, since the main subject is the assessment of the impact of the financial part of wealth on economic development.

The results of the econometric analysis are presented in a separate paragraph, where the best

[3] The Human Development Index (HDI, is a summary composite measure of a country's average achievements in three basic aspects of human development: health, knowledge and standard of living. United Nations. URL: http://hdr.undp.org/en/indicators/137506# (accessed on 01.08.2021).

[4] Measured by the headcount ratio at the national poverty threshold (% of population). Represents the percentage of the population living below the national poverty threshold. National estimates are based on population-weighted subgroup estimates from household surveys. For countries for which data are from EU-SILC, the reference year is the reporting year of income, i.e. the year preceding the year of the study. World bank. URL: https://data.worldbank.org/indicator/SI.POV.NAHC?view=chart (accessed on 01.08.2021).

versions of the models by goals are immediately given, in *Table 1* for the G7 countries and China and separately for Russia.

Fourth, using production functions,[5] the GDP dynamics of these countries (with the exception of Japan) are modeled by the value of financial wealth and the Gini index, which makes it possible to identify the sensitivity of the target to financial non-financial wealth and the level of income inequality in the country. The result obtained allows not only to compare the situation in different countries but also to establish the need for changes in macroeconomic policy, which boil down to a shift in the influence of the components of national wealth on economic growth.

Fifthly, a comparative analysis of the countries included in the study for the third and fourth steps of this algorithm is carried out, showing how different the impact of financial wealth and inequality on macroeconomic dynamics in the countries under consideration.

It should be noted that the models of this class used in the above algorithm (multiplicative, by the type of production function) do not reflect a complete causal relationship, they allow you to establish the presence of the force of influence of factors and the sensitivity of the objective function to the studied factors included in the model.

For the study, the base period of 2000–2019 was taken, for which it is possible to find and include in the analysis the necessary data on the considered macroeconomic parameters and to build the necessary models.

Let us move on to the implementation of the indicated steps of the research algorithm and the application of the econometric modeling technique based on the Gretl 2020b software module. First, we present an empirical analysis of changes in financial and non-financial wealth with the corresponding indicators of economic dynamics — GDP, GDP growth rates, inequality, and poverty levels.

DYNAMICS OF WEALTH ELEMENTS AND KEY MACROECONOMIC PARAMETERS

Let us analyze according to statistics, considering in pairs the change in the types of wealth (financial and non-financial) and the corresponding macroeconomic indicators. Non-financial wealth includes objects owned by business entities that bring them real or potential benefits: fixed assets (fixed capital), inventories, values, technologies, human capital, intellectual property, know-how and other results of intellectual activity. Financial wealth includes: monetary gold, special drawing rights, cash (currency), derivatives, deposits, securities, loans, insurance technical reserves, other accounts receivable and creditor. The available data on financial and non-financial wealth[6] make it possible to establish at least a twofold superiority of financial wealth over non-financial wealth (*Fig. 1, 2*). The USA is the absolute leader in financial wealth. In terms of non-financial wealth, since about 2012, China has caught up with the United States, while remaining behind in terms of financial wealth. Russia is inferior in terms of the value of each type of wealth to all the countries under consideration (if we consider wealth by source[7]).

It should be noted that only the US and China[8] how significant growth in these two types of wealth. This, among other things, determines their impact on the global economy and finance.

Figures 3 and *4* show a clear empirical relationship between the components of wealth

[5] This approach is the most acceptable, since it is widely used and convenient in solving the problem of estimating the sensitivity of the parameters included in the model. According to the principle of the presumption of the theory of J. Commons, the theory or model that explains a larger set of aspects with less means will be considered the most acceptable and adequate. In relation to the problem posed, a sufficient form of the model was chosen, which is not too complicated, but gives an answer to the question about the influence of factors.

[6] The Global wealth report 2021. Research Institute Credit Suisse. 2021. URL: https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html; Росстат. URL: https://www.gks.ru/bgd/free/B 99_10/IssWWW.exe/Stg/ d000/i000390r.htm (accessed on 01.08.2021).

[7] The Global wealth report 2021. Research Institute Credit Suisse. 2021. URL: https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

[8] The Global wealth report 2021. Research Institute Credit Suisse. 2021. URL: https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

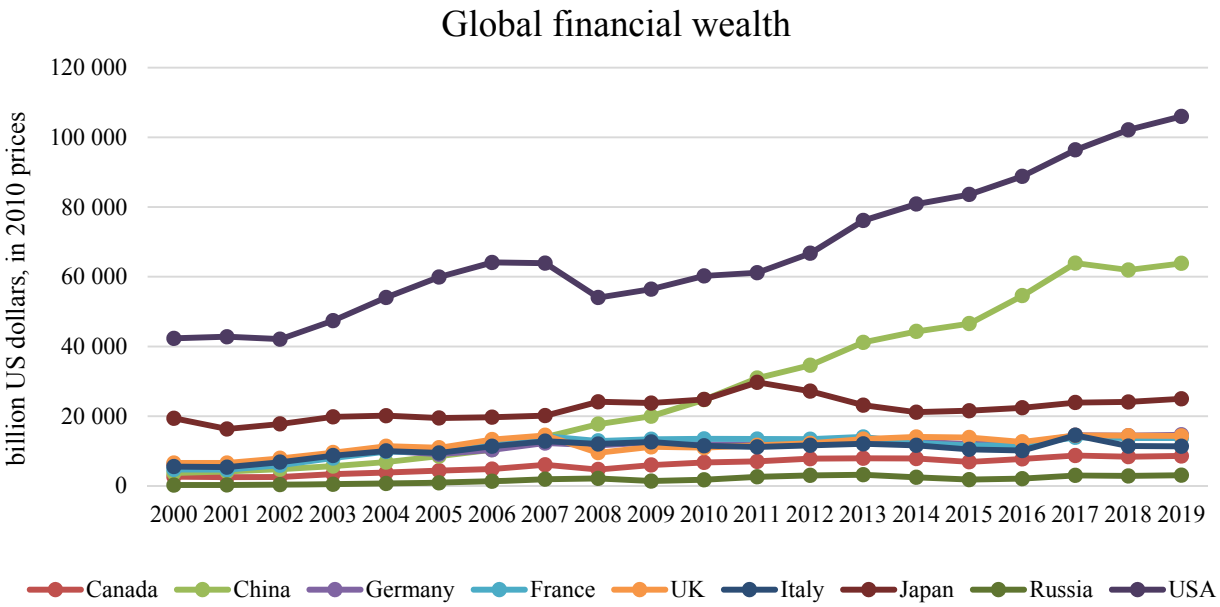

Fig. 1. **Financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors. URL: https://www.investopedia.com/terms/f/financialasset.asp; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

and countries' gross domestic product in 2010 prices.

Based on the presented data, it can be seen that a higher gross domestic product corresponds to a large amount of financial and non-financial wealth in the considered time interval 2000–2019. The United States and China are in the lead. For example, with the same financial wealth, China's GDP exceeds that of Japan, and Germany's GDP is equal to that of Italy and the UK (*Fig. 3*). Among these countries, Russia ranks lowest in terms of financial wealth and GDP. The same applies to the relationship between GDP and non-financial wealth (*Fig. 4*).

With the same value of non-financial wealth, Japan's GDP exceeds that of Germany, France, and Italy (*Fig. 4*).

It should be noted that the relationship between GDP and financial wealth is described for the countries under consideration by a convex curve relative to the abscissa axis, while GDP and non-financial wealth is described by a concave curve.

For each country, the structure of wealth matters — the ratio between financial and non-financial wealth and the sensitivity to them of the gross domestic product and other development parameters.

The *Appendix* shows pairwise empirical ratios of GDP growth rates, the Gini coefficient and the poverty level of countries with financial and non-financial wealth (*Fig. 1–6 of the Appendix*).

In general, we can say that there is no close relationship between the growth rate and the size of wealth, both financial and non-financial. For example, Russia with a low value of financial and non-financial wealth showed very high growth rates until 2008. The United States with a high value of financial and non-financial wealth demonstrates lower growth rates (*Fig. 1, 2 of the Appendix*). At the same time, for the group of countries under consideration, it can be noted that, on average, higher financial wealth does not correspond to significantly lower or higher growth rates (*Fig. 1 of the Appendix*). *Fig. 1 of the Appendix* clearly shows the size of financial wealth, up to which the growth rate in a number of countries increases with the growth of financial wealth, then decreases. Nevertheless, there is some relationship with the pace and is already visible at the level of empirical analysis. *Fig. 2 of the Appendix* also shows that more non-financial wealth corresponds on average to lower growth rates. This relationship is due to the influence of two countries — China and Russia, since if we remove the data for these countries in

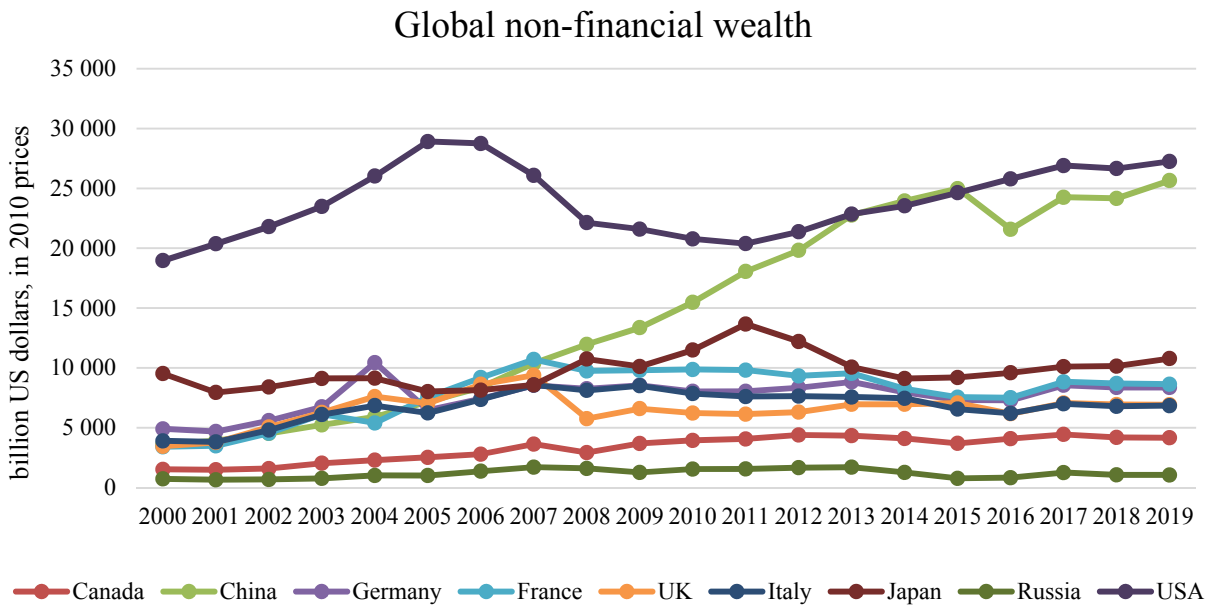

Fig. 2. **Non-financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors. URL: https://www.investopedia.com/terms/f/financialasset.asp; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

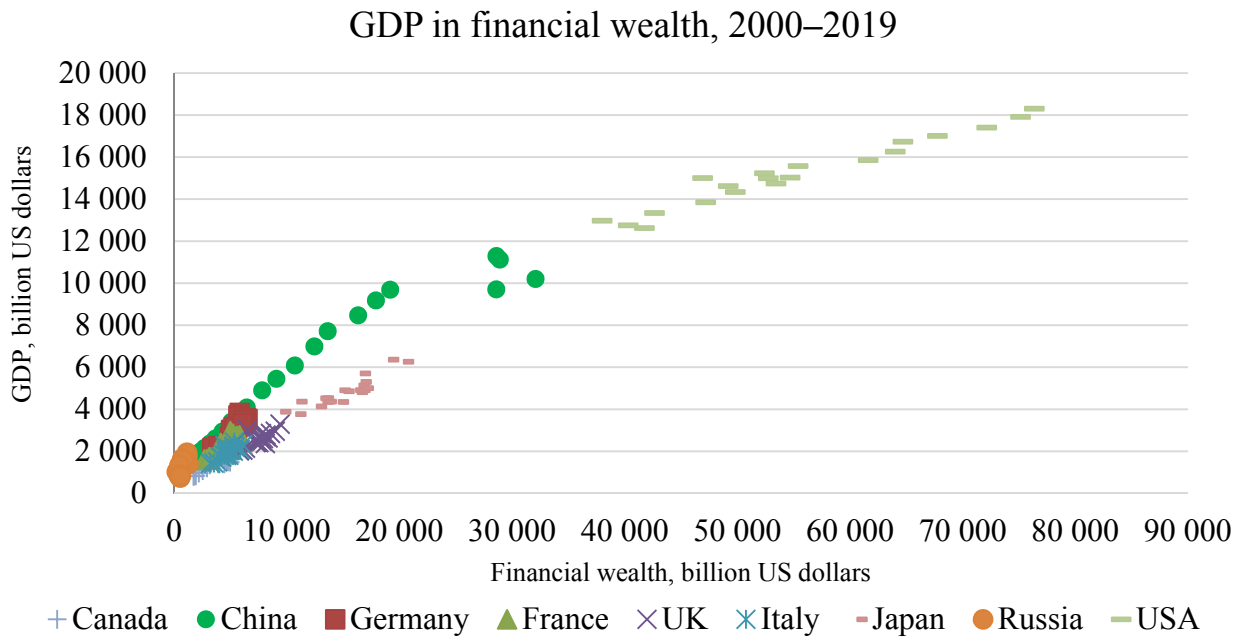

Fig. 3. **GDP and financial wealth of the G7 countries, China and Russia in 2010 prices**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

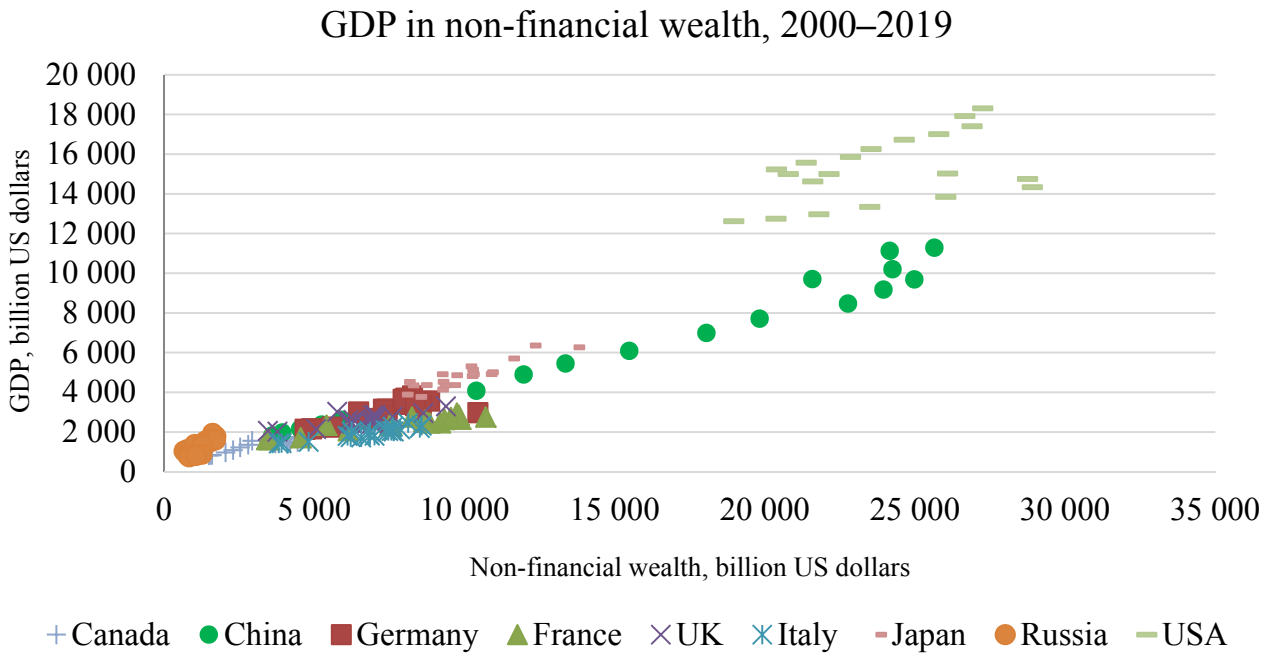

Fig. 4. **GDP and non-financial wealth of the G7 countries, China and Russia in 2010 prices**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

Fig. 1, 2 of the Appendix, there is no relationship in the scatter of points between the growth rate and the size of financial and non-financial wealth (the scatter of points along the ordinate — the growth rate is from 0 to 5%). It can be seen that with the same growth rates in different countries there is a different combination of financial and non-financial wealth. However, the influence of the Chinese economy on world development has become very significant, therefore, by including this country in the panel data of the econometric study, we will see in the next paragraph that a large share of financial wealth still has a positive effect on the growth rates of the group of countries under consideration. Although the share of non-financial wealth has a weak downward effect for the same group of countries, which is quite consistent with the empirical analysis (*Fig. 1, 2 of the Appendix*).

A study of the relationship between the level of inequality and financial and non-financial wealth (*Fig. 3, 4 of the Appendix*) shows that more financial as well as non-financial wealth corresponds to a higher level of inequality in the countries under consideration. Although in one country there may not be such a noticeable relationship. However, there are various types of wealth up to $ 10 trillion in which an increase in wealth does not show a clear relationship with an increase in inequality in the Gini coefficient. If we exclude Russia, China and the United States from consideration, then for the G7 group of countries there is a relationship that the inequality in the Gini coefficient increases with the growth of financial wealth, but with the growth of non-financial wealth, such a relationship is not confirmed by empirical points.

Considering that inequality and poverty are closely related (*Fig. 7 of the Appendix*), i.e. as inequality grows, poverty grows and vice versa (for a given group of countries), the relationship between the level of poverty and financial and non-financial wealth (*Fig. 5, 6 of the Appendix*) resembles the relationship between inequality and the same components of wealth. *Fig. 5, 6 of the Appendix*, reflecting the empirical values of the parameters, show that a higher value of both financial and non-financial wealth corresponds in the country comparison to a higher level of national poverty — China and the United States (*Fig. 5 of the Appendix*). In relation to non-financial wealth, such a relationship is not confirmed

Table 1

Regression models based on panel data from the G7 countries, China and Russia, 2000–2019

No.	Regression target	Models based on panel data from G7 countries and China	Models in Russia
1	Human development index	$X_1 = 1.36 - 0.01*X_2 - 0.009*y + 0.09*X_6 - 0.25*X_7$ (2)	$X_1 = 0.86 - 0.0007*X_3 - 0.08*X_6 - 0.002*y$ (6)
2	Gross domestic product	$Y = -6523 + 5781*X_1 + 0{,}61*X_7$ (3)	$Y = 4636 - 5823*X_1 + 0.99*X_5$ (7)
3	Gross Domestic Product in National Wealth	$Y/W = 0.38 - 0.36*X_1 - 0.004*X_3 + 0.31*X_6 + 0.24*X_7$ (4)	$Y/W = 42.5 - 28.4*X_1 - 0.33*X_2 - 0.14*X_3$ (8)
4	GDP growth rate	$y = 28.5 - 31*X_1 + 0.02*X_2 + 0.00002*X_6 - 0.000009*X_7$ (5)	$y = -1.93 + 7.2*X_1 + 1.4*X_2$ (9)

Source: compiled by the authors.

even by empirical points; rather, with the growth of non-financial wealth, there is some reduction in the level of poverty (*Fig. 6 of the Appendix*).

Thus, financial wealth at the present stage very strongly determines the economic development of the leading countries, slowing down growth rates, increasing inequality and poverty, or at least making it difficult to reduce them. At the same time, as a rule, it works to increase the gross domestic product. At least, such conclusions are visible in the analysis of specific empirical data and comparative analysis of countries.

In addition to comparative empirical analysis, it is useful to assess the impact of macroeconomic parameters on the goals of economic development, in particular, the human development index, GDP growth rate, GDP value, and its share in the country's wealth. Let us conduct an econometric study of the influence of a number of relevant factors, including financial and non-financial wealth, on development goals.

ECONOMETRIC ESTIMATES OF CHANGES IN MACROECONOMIC DYNAMICS

The target parameters of economic development were regression variables depending on a number of selected factors included in the basic econometric model (1). Further econometric analysis, which is reduced to the selection of the most reliable models by the rejection method, made it possible to obtain the best models based on panel data for the G7 countries and China [models (2)–(5)], separately for Russia [models (6)–(9)], summarized in *Table 1*.[9]

Analysis of the obtained models in *Table 1* makes it possible to single out qualitative assessments of the influence of relevant factors on the regression variable, the target parameter of macroeconomic dynamics. *Table 2* reflects the comparative estimates.

The conducted econometric modeling and analysis of its results make it possible to identify the most important differences in the relationship of macroeconomic parameters with a clarification of the impact of financial and non-financial wealth on economic development in these countries (a group of G7 countries with China and Russia separately).

Firstly, for the G7 countries and China, an increase in the share of financial wealth in its total value has a positive effect on the human development index, in contrast to Russia, where a similar change causes a deterioration in the human development index (see *Tables 1, 2*). At the same time, growth rates restrained the increase in this indicator both in this group of countries and in Russia. Non-financial wealth and inequality had a constraining effect on a group of countries, and the level of poverty on Russia.

[9] In this study, statistical hypotheses were tested that showed the acceptability of models selected by the rejection method. The calculations were carried out on the Gretl 2020b software module. To save space, statistics on models are not given in the article.

Table 2

Comparative assessment of the influence of factors (according to *Table 1*) on the target development parameters

No.	Target development parameter	Assessment for G7 countries and China	Assessment for Russia
1	Human development index	An increase in the share of financial wealth in its total value has a positive effect on the human development index. At the same time, inequality and high growth will slow it down	An increase in the share of financial wealth has a negative impact on the human development index. At the same time, poverty rates and growth rates slow down the growth of the human development index
2	Gross domestic product	Determined by the human development index and non-financial wealth in its total value	Determined by the value of non-financial wealth and limited by the human development index
3	Gross Domestic Product in National Wealth	Depends on the share of financial wealth, less than non-financial wealth. The decrease is facilitated by the level of poverty and the growth of the human development index (more rapid growth of the denominator — wealth rather than the product)	The level of poverty, inequality and the human development index in the studied interval acted in the direction of reducing this target parameter
4	GDP growth rate	Increasing inequality and the share of financial wealth has a positive impact. The slowdown is due to the growth of the human development index and non-financial wealth	Positive impact of the human development index and the level of inequality. The influence of financial wealth or wealth structure on the pace was not revealed

Source: compiled by the authors.

Secondly, in developed countries and China, the human development index is positively related to GDP; in Russia, this relationship is negative over the interval under consideration; the increase in the human development index was accompanied by the absence of significant GDP growth.

Thirdly, the share of GDP in wealth, as well as the growth rates of the group of countries under consideration, are positively related to the share of financial wealth in its value; for Russia, no such dependence was found. The poverty level reduces the target indicator in the form of the share of GDP in the value of wealth for all considered objects, and in Russia there is also a level of inequality. For the G7 countries and China, the human development index is negatively related to growth rates, in Russia the relationship is positive, the level of inequality also had a positive impact on growth rates. For the G7 countries and China, this influence is less pronounced.

Thus, the analysis allows us to conclude that financial wealth (its share in the total value) in developed countries has a positive effect on the human development index, the share of GDP in wealth, and growth rates. For the Russian economy, the impact on the human development index is negative, and other target parameters of dynamics are not revealed, with the exception of GDP, for which the value of financial wealth has a positive impact [formula (7), *Table 1*].

An important point and the next stage of the research algorithm is to assess the sensitivity of GDP to changes in financial wealth. It is useful to use the classical production functions to obtain it.

GDP SENSITIVITY TO FINANCIAL WEALTH AND INEQUALITY

Given the trends in increasing financial wealth [2], it seems natural to set the task of determining its impact on changes in the main macroeconomic indicator — the country's gross domestic product.

Let us take the following multiplicative function as the main model: $Y = A F^a G^b$, where Y — the GDP value, billion US dollars, in 2010 prices; F — financial wealth, billion US dollars, in 2010 prices, G — Gini index, %; A — the coefficient of the model; a, b — indicators that allow assessing the sensitivity of the goal to a factor sign — financial wealth and the level of inequality.

Tables 3 shows a model for the above countries (excluding Japan, since the scores in the Gini coefficient, as already noted, are not enough for such a model).

The results of *Table 3* confirm that financial wealth in the considered time interval has a more significant impact on the gross domestic product than the level of inequality in all developed countries except Russia. Moreover, in the Russian economy, with the same change in factors, the level of inequality had a much more significant impact on the value of GDP than financial wealth. Only in Canada, the impact of inequality on GDP was also stronger than in other G7 countries and China, however, high levels of inequality constrained GDP growth, which is reflected in the model presented in *Table 3*.

Thus, a further increase in inequality in Canada will act in the direction of lowering the value of the gross domestic product. This indicates a certain exhaustion of opportunities in the field of stratification of society by income in the period under study. Russia during this period showed GDP growth with rising inequality, high sensitivity to changes in inequality. In other countries, GDP was more sensitive to financial wealth than to inequality. At the same time, Italy and Germany showed the greatest sensitivity of GDP to financial wealth. This may well indicate the specifics of the creation of monetary and financial institutions of the European countries of the Rhine capitalism, as well as the subordination of the development of the financial sector and financial institutions to the tasks of development and wealth improvement. At the same time, the sensitivity of GDP to changes in inequality in Italy is higher than in Germany, and to financial wealth, which may mean that there are differences in the organization of methods for regulating the monetary sphere and financial institutions. The sensitivity of Russia's GDP, despite the most significant growth in financial investments [2], is 2 times lower than in the United States, and even lower than in European countries. This may mean that there is a significant difference between the development of the financial sector and the increase in financial wealth and the development of the economy. For a promising model of economic growth, such a gap is a very non-trivial problem, since the emerging and growing disproportion must be corrected to ensure competitive growth.

CONCLUSIONS

Summing up, we note that the impact of financial wealth on macroeconomic dynamics, represented by GDP, is not the same in different countries, which reflects the specifics of the interacting institutions of the financial system of each country, the genesis and evolution of financial markets. And these conditions require separate consideration and study for each object of the study. This position means that the transfer of financial policy prescriptions from one country to another or the implementation of any unification without additional justification for its expediency can be an absolutely useless waste of efforts in the field of financial and macroeconomic policy.

Firstly, the study showed that the Russian economy is significantly different in terms of the impact of financial wealth on economic development from the G7 countries and China. In particular, an increase in the share of financial wealth in the total acted to reduce the human development index. Sufficiently developed institutions of the financial sector abroad strongly determine the development of transactional types, which is largely due to the positive change in this indicator. The low share of financial wealth and low sensitivity

Table 3

Dependence of GDP on the amount of financial wealth and the level of inequality for the countries under consideration

Country	Model	Model statistics
UK	$Y = 3.2\ F^{0,78}\ G^{-0,06}$	$R^2 = 0.63$ $R^2_{adj} = 0.59$ F-test = 15 $DW = 1.59 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 5.27$ $\chi 2^{crit.} = 30.1$
Germany	$Y = 0.23\ F^{0.86}\ G^{0.62}$	$R^2 = 0.86$ $R^2_{adj} = 0.85$ F-test = 53 $DW = 2.15 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 2.21$ $\chi 2^{crit.} = 30.1$
Italy	$Y = 0.07\ F^{0.88}\ G^{0.79}$	$R^2 = 0.73$ $R^2_{adj} = 0.7$ F-test = 22 $DW = 1.59 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 1.49$ $\chi 2^{crit.} = 30.1$
Canada	$Y = 14153\ F^{0.72}\ G^{-2.4}$	$R^2 = 0.92$ $R^2_{adj} = 0.91$ F-test = 92 $DW = 2.31 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 0.88$ $\chi 2^{crit.} = 30.1$
China	$Y = 2.7\ F^{0.78}\ G^{0.12}$	$R^2 = 0.9$ $R^2_{adj} = 0.87$ F-test = 196 $DW = 1.72 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 1.23$ $\chi 2^{crit.} = 30.1$
Russia	$Y = 0.0003\ F^{0.24}\ G^{3.7}$	$R^2 = 0.73$ $R^2_{adj} = 0.7$ F-test = 23.4 $DW = 1.67 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 3.25$ $\chi 2^{crit.} = 30.1$
USA	$Y = 25\ F^{0.49}\ G^{0.28}$	$R^2 = 0.93$ $R^2_{adj} = 0.92$ F-test = 110 $DW = 1.39 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 1.28$ $\chi 2^{crit.} = 30.1$
France	$Y = 2.3\ F^{0.73}\ G^{0.24}$	$R^2 = 0.88$ $R^2_{adj} = 0.86$ F-test = 59 $DW = 2.41 \in [1.41; 2.39]$ White test: $\chi 2^{calcul.} = 2.18$ $\chi 2^{crit.} = 30.1$

Source: compiled by the authors.

to it also emphasize the weak influence on the development of the relevant types of activities in relation to the Russian economy.

Secondly, only China and Russia show a greater sensitivity of GDP to non-financial rather than financial wealth. Moreover, in Russia the determining factor of dynamics is the level of inequality. Other countries are more sensitive specifically to financial wealth, both in terms of the non-financial part of wealth and the level of inequality.

These circumstances are clearly not considered when developing macroeconomic policy measures, using monetary and financial instruments. In particular, the growth of financial wealth in developed countries has a positive effect on the main development goals — GDP, growth rates, human development index. Russia shows the opposite effect, or no significant association with financial wealth.

Consequently, the revealed relationship between policy goals and measures, including influencing factors, requires expanding approaches in the field of managing macroeconomic dynamics, creating institutions of monetary and macroprudential policy.

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APPENDIX

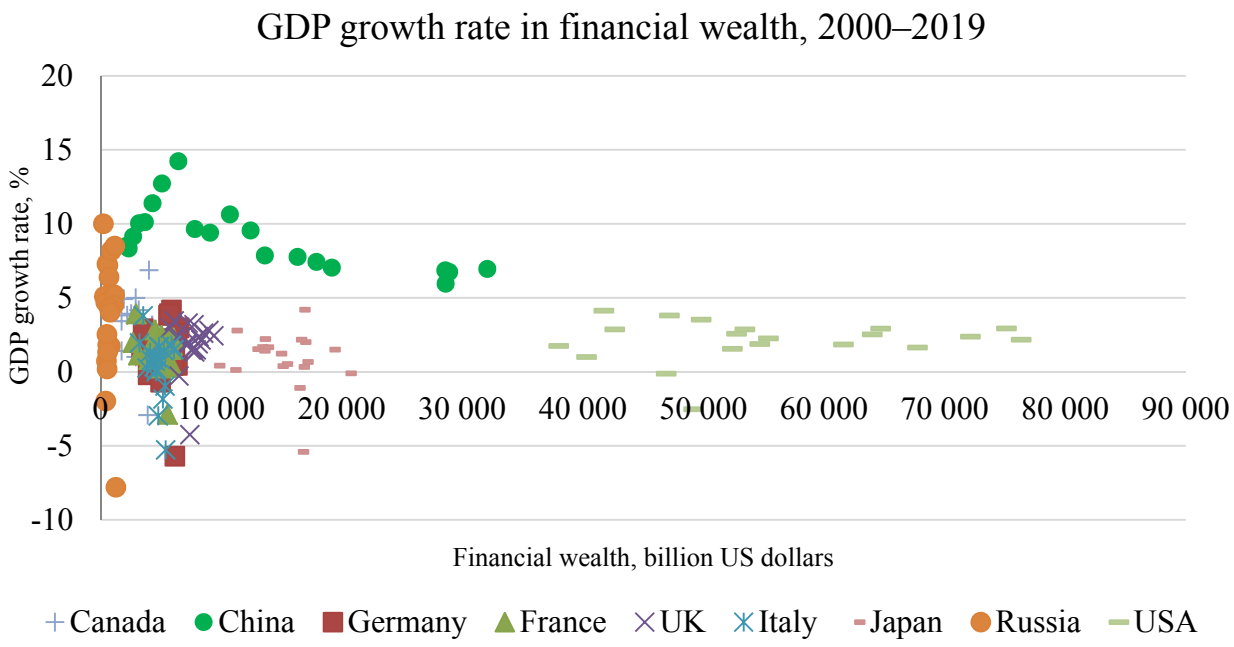

Fig. 1. **GDP growth rates and financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

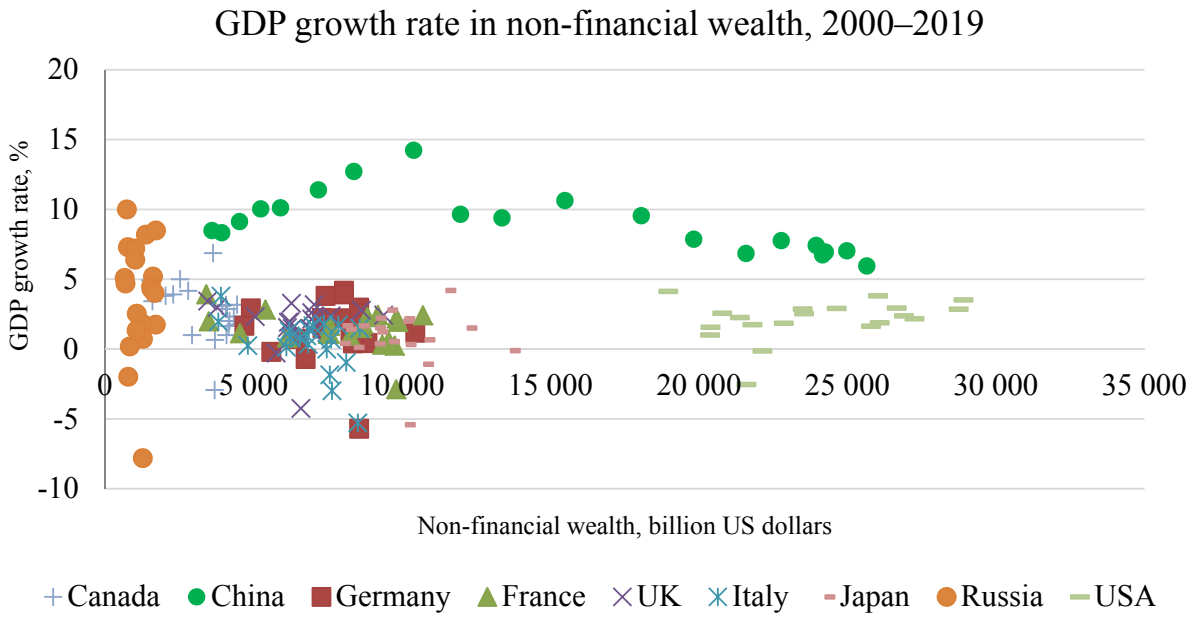

Fig. 2. **GDP growth rates and non-financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

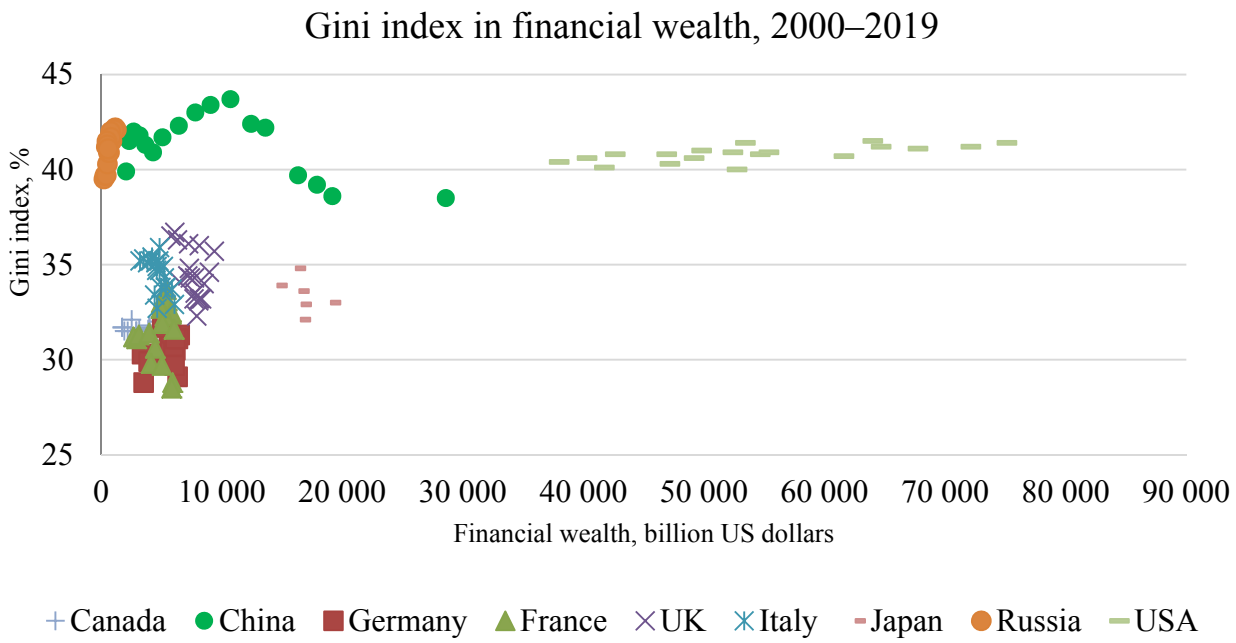

Fig. 3. **Gini index and financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/SI.POV.GINI?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

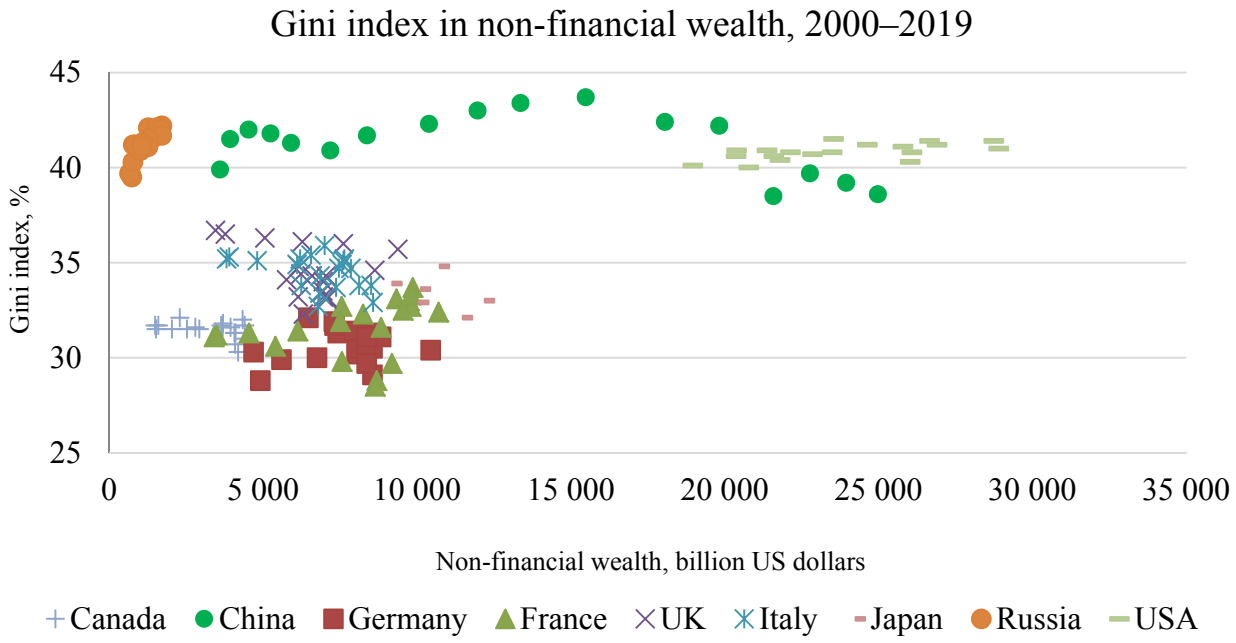

Fig. 4. **Gini index and non-financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/SI.POV.GINI?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

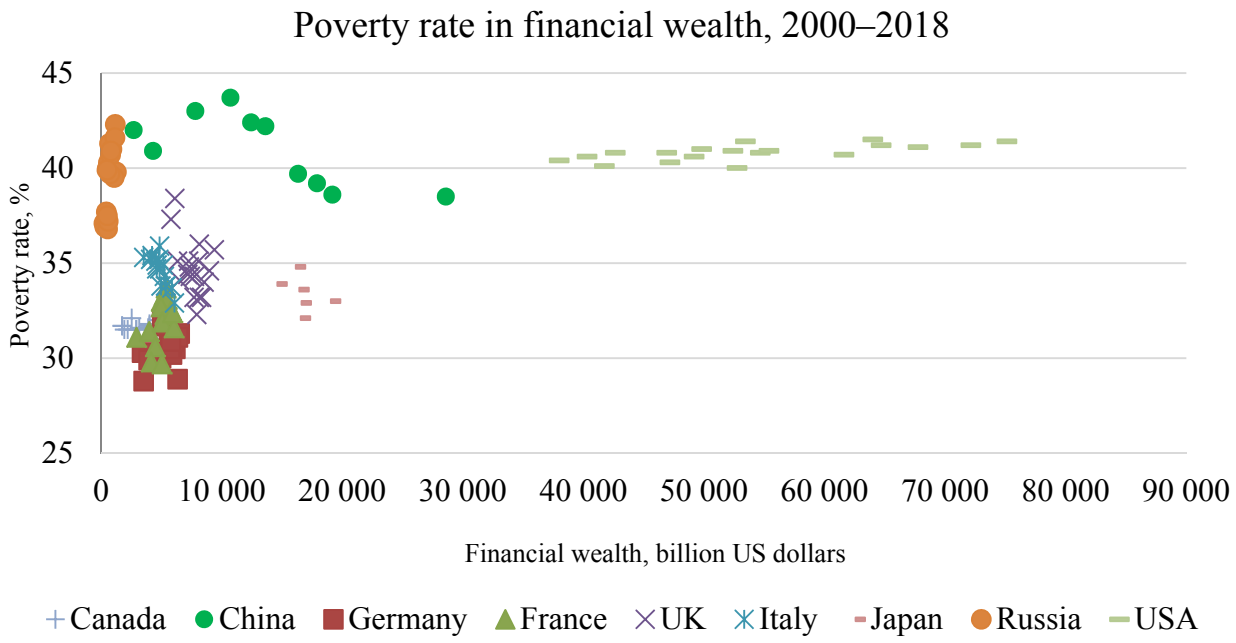

Fig. 5. **Poverty rate and financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/SI.POV.NAHC?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

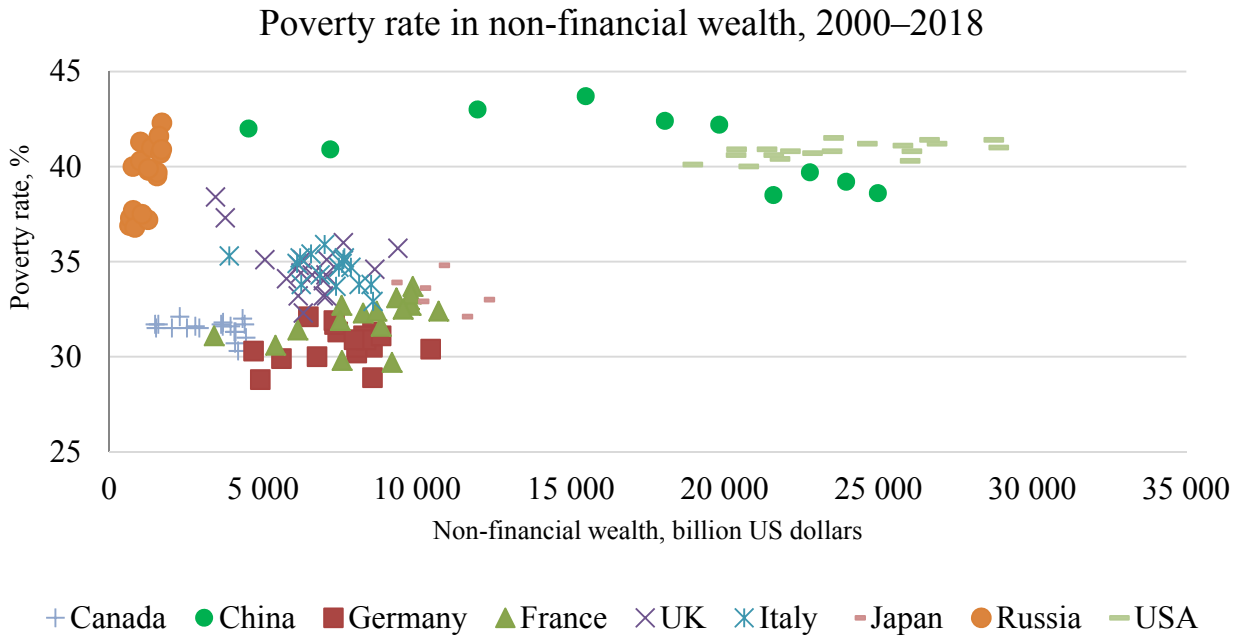

Fig. 6. **Poverty rate and non-financial wealth of the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/SI.POV.NAHC?view=chart; https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html (accessed on 01.08.2021).

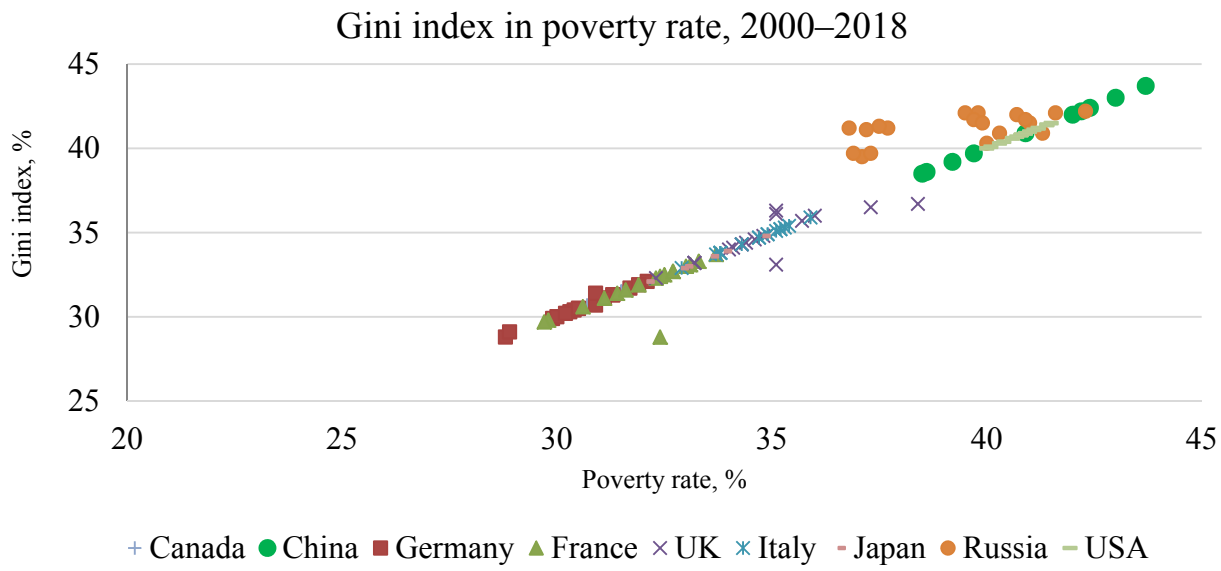

Fig. 7. **Poverty rate and Gini index for the G7 countries, China and Russia**

Source: compiled by the authors based on World Bank's data. URL: https://data.worldbank.org/indicator/SI.POV.GINI?view=chart (accessed on 23.03.2022).

ABOUT THE AUTHORS

Oleg S. Sukharev — Dr. Sci. (Econ.), Prof., Chief Researcher, Institute of Economics, Russian Academy of Sciences, Moscow, Russia
https://orcid.org/0000-0002-3436-7703
Corresponding author
o_sukharev@list.ru

Ekaterina N. Voronchikhina — Cand. Sci. (Econ.), Assoc. Prof., employee of the Perm State National Research University, Perm, Russia
https://orcid.org/0000-0001-7033-5832
voronchikhina.katya@yandex.ru

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