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The Dependence Between a Country's Prosperity and the Progressivity of a Private Person's Income Tax Rate Scale

Abstract. *The article is dedicated to the study of the dependence existing between a country's prosperity and the progressivity of a private person's income tax rate scale. The authors analyze the factors and identify their influence on the country's prosperity and flourishing. The research included analysis of forty randomly chosen countries. The impact of the following factors on the prosperity and flourishing of the country was considered: the gross domestic product per capita; the average, monthly salary; the Gini index; the national debt, then share of gold in the international reserve assets. The authors have determined the power of functional dependence of country's flourishing index on the index of income tax rate scale progressivity and the correlation coefficient that has been calculated. Along with the known prosperity indices of world countries used by the UN, the new income tax rate scale progressivity indices are introduced in the article. Based on the above, the authors introduce new aggregated interval social and economic indices, and namely: multifactorial country prosperity indices and multifactorial country flourishing indices. These aggregated indices were calculated for forty main world countries, for which the authors managed to find all initial indices. Analysis of the world country ratings by prosperity and flourishing indices (for 2009–2012) indicates that the values of Russia and Brazil are close. In general, in all ratings both countries are located in the lower decimal parts (in lower first and lower second parts) of corresponding indices value intervals. Besides that, it is shown that there is a positive linear trend dependence between country flourishing and tax rate scale progressivity of individuals income. Moreover, by the calculation of the selective correlation coefficients, the authors show that this linear trend dependence is linear functional to a large extent. The flat tax rate schedule adopted in Russia has a negative impact on the country's prosperity.*

Keywords: *tax, private person income, gross domestic product, monthly salary, Gini index, national debt, share of gold, progressivity index, prosperity index, flourishing index.*

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Introduction

"Another significant disadvantage of the national tax policy is its prominently expressed fiscal orientation. The social function of a taxation system, through which the state implements its social obligations and redistributes the incomes of the different social categories in order to maintain the balance in society, must also come to the fore along with the fiscal function.

"Today, the most common form of the implementation of the tax policy's social orientation in world practice is the use of the progressive income tax rate, compliant with the principles of social fairness i.e. "wealthy citizens pay more tax", both in the absolute and relative meaning. The progressive income tax rate is adopted in almost all developed world countries.

"The transition of our country towards a market economy, and the rebuilding of the mechanism for the redistribution of national income redistribution has led to the emergence of numerous social problems, the most acute of which is an excessive differentiation in household income. In 2001 the Russian Federation went back on the progressive personal income tax rate and adopted the unified tax rate of 13%. The main argument substantiating the introduction of the flat tax rate was the thesis stating that the major incomes would be removed from the shadow economy. However, practically, this reform has been only partially justified, as long as in the period since 2000 till present the social and economic disparity has been only growing — according to the data of the Federal State Statistics Services of the Russian Federation. As of the first half of 2011 the gap between the wealthy and poor citizens was 14.8 times. To compare it with the beginning of the Restructuring Age, then in that time the gap between 10% of the poorest and wealthiest citizens was assessed to be 5.1 times. Therefore, the main goal of the state in the area of taxation must be the development of a socially-orientated taxation policy, corresponding to the objective laws and patterns of the development of democratic society.

"As a measure aimed at the mitigation of the above-mentioned social problems, in 2013 the Russian Academy of Science proposed to implement progressive private income tax rate, and to introduce a wealth and sumptuary tax."

The Ministry of Finance of Russia in its letter dated November 27th, 2013 No. 03–04–05/51269 regarding the implementation of a progressive tax rate responded in the following way: "It is necessary to take into account that the introduction of the unified personal income tax rate of 13 percent for most types of income, together with the simultaneous widening of the taxpayer circle through the legalization of labour remuneration by many employers, encouraged the increase in personal income tax revenues.

"Thus, in 2011 the state budget of the Russian Federation received 1,994.8 billion roubles from personal income tax, while in 2012 the same tax revenues equalled 2,260.3 billion roubles, indicating an increase of 265.5 billion roubles.

The current personal income taxation system suggests a balanced approach, taking into account the interests of both taxpayers and the budgetary system of the Russian Federation.

Besides that, the unified tax rate of 13 percent is the main factor in the attractiveness of the Russian Federation's investment, and, significantly, it simplifies the calculation, payment and administration of tax by tax authorities."

The above quotes indicate that the opinions of the scientific community and the Russian Federation state authority regarding the necessity of the cancellation of the flat personal income tax (PIT) rate

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differ strongly. Therefore, nowadays, the researches dedicated to the identification of possible relation between various countries prosperity and PIT rate schedule progressivity are the subject of special interest. This article is exactly this kind of study.

In the first part of the article the authors describe the known *initial* indices of the prosperity of individual countries in the world used by the UN. Along with it they introduce new initial ***Index of the Scale Progressivity of Personal Income Tax (PIT) Rate.*** Those average indices from 2009 to 2012 are represented in the article.

In the second part, based on the previously considered initial indices the authors introduce two new aggregated interval social and economic indices: ***country prosperity index*** and ***country flourishing index***. These indices reflect the concept of social fairness to a greater extent than known in the ***Human Development Index***, and thus are better tools to indicate the temporary stability or instability of the country's social and economic situation.

The prosperity and flourishing indices ratings composed for the main world countries from 2009 to 2012, provided in the article, brightly reflect the author's intuitive ideas of correlation between **current** social and economic situation in the main world countries and of correlation of these social and economic situations **temporary stability**. Analysis of ratings by six indices shows that Russia and Brazil have close values of prosperity and flourishing indices. **In all** ratings, **except the rating by one 1-factor prosperity index (the exception relates only to Russia),** both countries are located in the lower **decimal** part (**in first and second** lower deciles) of corresponding indices value intervals. Switzerland is located in the **upper** decimal part (**in the ninth and tenth** upper deciles) of corresponding indices value intervals, **except the rating by five-factor prosperity index and sex-factor flourishing index**, where the **upper** decimal part is occupied by the Netherlands. In the ratings considered, the upper half of the corresponding indices value intervals is occupied by such countries as Denmark (70% of cases), the Netherlands (60% of cases), Norway (80% of cases), USA (70% of cases), Switzerland (100% of cases) and Sweden (60% of cases). It should be noted that all those countries use the progressive income tax rate scale.

The research also shows a gap between Russia and abovementioned countries **by two and half times**. Therefore, when compared with indicated prosperity and flourishing countries, Russia (along with Brazil) appears to be disadvantaged and non- flourishing and, thus, quite an unstable country in its social and economic situation. In the authors' opinion it confirms the fact that in order to ensure the prosperity and flourishing of Russia, it is necessary to implement the progressive income tax rate scale.

In the third part of the article the authors study the impact of the index of scale progressivity of an income tax rate on the prosperity or non-prosperity of a country. For this purpose the authors calculate linear trends of country prosperity indices' dependence on the index of scale progressivity of a national income tax rate.

As a result, one can come to a conclusion that **there is positive linear trend dependence between country prosperity and scale progressivity of a personal income tax rate**.

Besides that, the sample correlation coefficient of 1-factor, 2-factor, 3-factor, 4-factor and 5-factor country prosperity indices and index of the scale progressivity of a personal income tax rate are equal to 0.3715, 0.4304, 0.4118, 0.1940 and 0.4238 respectively. It means that **linear trend dependence between 1-factor, 2-factor, 3-factor, 4-factor and 5-factor country prosperity indices and index of the scale**

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The Average GDPPC Index in USA Dollars (for 2009–2012) and Average GDPPC Correlation Index (for 2009–2012):

Country	Average GDPPC Index in USA Dollars (for 2009-2012)	Average GDPPC Correlation Index (for 2009-2012)
Australia	41439	0.872
Austria	41196	0.8672
Armenia	5966	0.1255
Belarus	1428	0.3003
Belgium	37981	0.8001
Bulgaria	14633	0.3078
Brazil	**11272**	**0.2372**
Great Britain	35271	0.7432
Hungary	21002	0.4424
Vietnam	3306	0.0696
Germany	38283	0.8057
Hong Kong	48588	1.0221
Greece	26817	0.5667
Denmark	40294	0.8487
India	3547	0.0746
Ireland	41382	0.8718
Spain	31948	0.6735
Italy	32365	0.6822
Kazakhstan	12605	0.2650
Canada	40240	0.8469
China	8002	0.1680
Latvia	17995	0.3778
Lithuania	20027	0.4202
Moldavia	3187	0.0671
Netherlands	42094	0.8868
Norway	59012	1.2417
Poland	20467	0.4306
Portugal	25333	0.5340
Russia	**21489**	**0.4518**
Romania	15481	0.3258
USA	47500	1.0000
Ukraine	6909	0.1454
Finland	36820	0.7754
France	34788	0.7327
Croatia	19513	0.4109
Czech Republic	25895	0.5457
Switzerland	49722	1.0467
Sweden	40045	0.8428
Estonia	21146	0.4447
Japan	33614	0.7078

progressivity of a personal income tax rate is linear functional by 37%, 43%, 41%, 20% and 42%, respectively.

Based on the above, we can draw the unfavourable conclusion: **the flat income tax rate scale adopted in Russia negatively affects the country's prosperity**.

1. COUNTRY PROSPERITY INDICES

Country prosperity

The term "country prosperity" means a specific set of indices of the social and economic quality of life and of citizens' needs' satisfaction. In compliance with UN recommendations, "prosperity" generally includes the following indices: health, food, clothes, housing, labour and employment conditions, education (including literacy), demographic conditions, consumption and accumulation funds, social security, human rights and liberties, etc.

For international ratings of the prosperity level of countries the UN uses both specific **initial** and consolidated **aggregated** indices. Let us consider some of them.

1.1. INITIAL INDICES

1.1.1. Gross Domestic Product Per Capita

***Gross Domestic Product Per Capita* (*GDPPC*) (*for given year X*)** is calculated as a ratio between the currency purchasing power parity (PPP) of the gross domestic product and the size of the country's population, as of 01.01.X+1 ***GDPPC Correlation Index* (*for given year X*)** is calculated as a ratio between a country's GDPPC and the USA GDPPC (for given year). To a large extent those are **initial economic indices**. ***The Average GDPPC Correlation Index* (*for years X-Y*)** is calculated as an average value of the GDPPC Correlation Index for all the years since year X till year Y.

1.1.2. Average Monthly Salary

***Average Monthly Salary* (*AMS*) (*for given year X*)** is calculated based on all regis-

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tered employees in the country before tax as of 01.01.X+1. ***Average Monthly Salary Correlation Index* (*for given year X*)** is calculated as a ratio between a country's AMS and the USA AMS for given year X. To the large extent those are **initial economic indices**. The ***average indices (for X-Y)*** are calculated similarly to the previous section.

1.1.3. Gini Index

Gini Index* (*for given year X*)** allows the identification of the differences between people's welfare and differences in the so-called "compensations' detected in the policy and philosophy of the country. The ***Average Gini Index (for X-Y) is calculated similarly to the section 1.1.1.

The Gini Index is used for identifying the size of the gap between the incomes of wealthy and poor citizens. The closer the index value is to 1, the higher the social disparity level is. This is the reason why to a large extent this index is an **initial social** index specifically reflecting such an important concept for a country's population's psychological well-being: FAIRNESS.

1.1.4. Progressive and Flat Private Person Income Taxation Systems

Progressive Private Person Income Taxation System is based on the principle of tax rates increase depending on the growth in the taxpayer's income level. Progressive system implies ***progressive tax rate schedule with upper and lower limits in percentage (for given year X). Average limits of progressive income tax rate scale in percentage* (*for X-Y*)** are calculated as the independent average value of the lower and upper limit for all years since X till Y.

Flat Private Person Income Taxation System is based on the principle of a unified tax rate for all taxpayers, regardless of their income level. The flat system implies ***flat tax rate schedule*** with matching ***lower*** and ***upper limits***.

Average Monthly Salary in USA Dollars (for 2009–2012) and Average Monthly Salary Correlation Index (for 2009–2012):

Country	Average Monthly Salary in USA Dollars (for 2009-2012)	Average Monthly Salary Correlation Index (for 2009-2012)
Australia	2610	0.7999
Austria	3437	1.0534
Armenia	471	0.1444
Belarus	959	0.2939
Belgium	3035	0.9302
Bulgaria	750	0.2299
Brazil	**1800**	**0.5517**
Great Britain	3065	0.9394
Hungary	722	0.2213
Vietnam	104	0.0319
Germany	2720	0.8336
Hong Kong	1545	0.4735
Greece	2300	0.7049
Denmark	4037	1.2372
India	295	0.0904
Ireland	2997	0.9185
Spain	2352	0.7208
Italy	2445	0.7494
Kazakhstan	753	0.2308
Canada	2724	0.8349
China	656	0.2011
Latvia	1098	0.3365
Lithuania	640	0.1962
Moldavia	438	0.1343
Netherlands	2671	0.8186
Norway	3846	1.0684
Poland	1536	0.4708
Portugal	1164	0.3568
Russia	**1215**	**0.3724**
Romania	954	0.2924
USA	3263	1.0000
Ukraine	686	0.2103
Finland	2925	0.8965
France	2886	0.8845
Croatia	959	0.2939
Czech Republic	1786	0.5474
Switzerland	4956	1.5189
Sweden	3023	0.9265
Estonia	1267	0.3883
Japan	2522	0.7729

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Average Gini Index (for 2009–2012)

Country	Average Gini Index (for 2009-2012)
Australia	0.352
Austria	0.291
Armenia	0.267
Belarus	0.284
Belgium	0.330
Bulgaria	0.282
Brazil	**0.547**
Great Britain	0.330
Hungary	0.312
Vietnam	0.356
Germany	0.283
Hong Kong	0.434
Greece	0.343
Denmark	0.278
Israel	0.392
India	0.334
Ireland	0.343
Spain	0.347
Italy	0.360
Kazakhstan	0.289
Canada	0.326
China	0.425
Latvia	0.366
Lithuania	0.376
Moldavia	0.287
Netherlands	0.258
Norway	0.258
Poland	0.341
Portugal	0.342
Russia	**0.840**
Romania	0.300
USA	0.408
Turkey	0.390
Ukraine	0.263
Finland	0.269
France	0.298
Croatia	0.337
Czech Republic	0.252
Switzerland	0.337
Sweden	0.250
Estonia	0.360
Japan	0.380

Average Foreign Debt Index (for 2009–2012)

Country	Average Foreign Debt Index (for 2009-2012)
Australia	0.2225
Austria	0.7175
Armenia	0.3400
Belarus	0.4125
Belgium	0.9725
Bulgaria	0.1600
Brazil	**0.6525**
Great Britain	0.7850
Hungary	0.7900
Vietnam	0.5125
Germany	0.8025
Hong Kong	0.3375
Greece	1.5250
Denmark	0.4375
India	0.6925
Ireland	0.9525
Spain	0.6875
Italy	1.2025
Kazakhstan	0.1100
Canada	0.8525
China	0.3950
Latvia	0.3700
Lithuania	0.3650
Moldavia	0.2500
Netherlands	0.6425
Norway	0.4975
Poland	0.5425
Portugal	1.0075
Russia	**0.1150**
Romania	0.3075
USA	0.9900
Turkey	0.4125
Ukraine	0.3675
Finland	0.4875
France	0.8425
Croatia	0.4475
Czech Republic	0.3900
Switzerland	0.4850
Sweden	0.3900
Estonia	0.0700
Japan	2.2300

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Average Income Tax Rate Scale Limits in Percentage and Average Income Tax Rate Scale Progressivity Index (for 2009–2012):

Country	Average Income Tax Rate Scale Limits in Percentage	Average Income Tax Rate Scale Progressivity Index (for 2009-2012)
Australia	17.0-45.0	1.45
Austria	21.0-50.0	1.41
Argentina	9.0-35.0	1.59
Armenia	15.0-35.0	1.40
Belarus	12.0	1.00
Belgium	25.0-50.0	1.33
Bulgaria	10.0	1.00
Brazil	**7.5-27.5**	**1.57**
Great Britain	0-45.0	2.00
Hungary	26.9	1.00
Vietnam	5.0-35.0	1.75
Germany	14.0-45.0	1.52
Hong Kong	2.0-17.0	1.78
Greece	0-42.0	2.00
Denmark	5.5-15.0	1.46
India	10.0-30.0	1.50
Ireland	20.0-41.0	1.34
Spain	24.75-52.0	1.36
Italy	23.0-43.0	1.30
Kazakhstan	10.0	1.00
Canada	15.0-29.0	1.32
China	3.0-45.0	1.88
Latvia	24.0	1.00
Lithuania	15.0	1.00
Moldavia	7.0-18.0	1.44
Netherlands	5.85-52.0	1.80
Norway	28.0-49.0	1.27
Poland	18.0-32.0	1.28
Portugal	14.5-48.0	1.54
Russia	**13.0**	**1.00**
Romania	16.0	1.00
USA	0-39.6	2.00
Ukraine	15.0-17.0	1.06
Finland	6.5-31.75	1.66
France	5.5- 41.0	1.76
Croatia	12.0-40.0	1.54
Czech Republic	22.0	1.00
Switzerland	0-11.5	2.00
Sweden	0-57.0	2.00
Estonia	21.0	1.00
Japan	5.0-50.0	1.81

Average Share of Gold in International Reserves (for 2009–2012)

Country	Average Share of Gold in International Reserves (for 2009-2012)
Australia	0.0800
Austria	0.5580
Armenia	0
Belarus	0.2500
Belgium	0.3800
Bulgaria	0.1000
Brazil	**0.0100**
Great Britain	0.1300
Hungary	0
Vietnam	0
Germany	0.7100
Hong Kong	0
Greece	0.7900
Denmark	0
India	0.0800
Ireland	0.1500
Spain	0.3300
Italy	0.700
Kazakhstan	0.1400
Canada	0
China	0.0200
Latvia	0.0500
Lithuania	0.0300
Moldavia	0
Netherlands	0.5900
Norway	0
Poland	0.0500
Portugal	0.8700
Russia	**0.0800**
Romania	0.1
USA	0.7400
Ukraine	0.0500
Finland	0.2200
France	0.6800
Croatia	0
Czech Republic	0.0100
Switzerland	0.1800
Sweden	0.1200
Estonia	0.0300
Japan	0.0300

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***Income Tax Rate Scale Progressivity Index* (*for given year X*)** is calculated as the ratio between the upper schedule limit and the average value between the upper and lower schedule limit (providing that the schedule limits have not changed throughout a year). To a large extent this index is an **initial social** index, specifically reflecting a concept which is so important for a country's population psychological well-being: FAIRNESS. The ***Average Income Tax Rate Scale Progressivity Index* (*for given year X*)** is calculated as the average progressivity index value for all years since X till Y.

Since January 1st 2001, i.e. since the enactment of Chapter 23 Private Person Income Tax of TC RF, the Russian Federation has implemented a unified basic **PIT** rate of 13%. This rate is used for the taxation of salary and other payments for the purpose of labour remuneration, compensations under agreements of a civil nature, etc. The basis for income tax is the salary. Income tax on salary is generally paid by hired employees. Data on the payment of dividends tax and average monthly dividends of private persons themselves are kept secret.

1.1.5. National Debt

***National Debt* (*for given year X*)** (of a country with convertible currency) comprises the debt by central government, regional and local governmental authorities and the debt of corporations with governmental participation in proportion to the governmental share in the equity capital of the latter as of 01.01.X+1. ***Foreign Debt Index* (*for given year X*)** is calculated as the ratio between national debt (for given year X) and the GDP (for the given year X). ***Average Foreign Debt Index* (*for X-Y*)** is calculated as average national debt index value for all the years since X till Y.

To a large extent these are the **initial economic** indices specifically reflecting such an important concept important for a country's population's political and economic well-being: FOREIGN EXPLOITATION.

1.1.6. Share of Gold in International Reserve Assets

International Reserve Assets of Russia comprise monetary gold, special drawing rights, a reserve position at the International Monetary Fund, assets in foreign currency and other reserve assets. Assets in foreign currency include currency assets of the Bank of Russia and the Russian Federation Government in the form of: cash; bank deposits at the non-resident banks with rating equal or higher than A (according to the Fitch IBCA and Standard and Poor's classification) or A2 (by Moody's classification); and state securities issued by non-residents of similar rating.

***Share of Gold in International Reserve Assets* (*for given year X*)** is calculated as the ratio between monetary gold value (expressed in dollars) and the value (expressed in dollars) of all international reserve assets of Russia as of 01.01.X+1 (i.e. January 1st of the following year). ***Average Share of Gold in International Reserve Assets* (*for X-Y*)** is calculated as the average gold share value for all the years since X till Y.

To a large extent the gold share is the **initial economic** index specifically reflecting such an important concept for a country's population's political and economic: TACTICAL SOUNDNESS OF FOREIGN ECONOMIES.

1.2. AGGREGATED INDICES

1.2.1. Hyman Development Index

Human Development Index (HDI) was introduced by the Pakistani economist Mahbub ul-Haq in 1990. Sometimes it is used as a byword for such concepts as "quality of life'; "level of life". HDI is an **aggregated social and economic** index of the level of a human development in a country.

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The index measures the achievements of a country achievements in three main ways.

1. Health and lifespan, measured by the life expectancy index at birth.

2. Access to education, measured by the literacy level of the adult population and the aggregated gross education coverage coefficient.

3. The quality of life measured by the size of the gross domestic product (GDP) per capita in USA dollars by purchasing power parity (PPP).

Those three indices are standardized in the form of three numerical values from 0 to 1. HDI is a geometric mean of these standardized indices, i.e. cube root of their product.

1.2.2. Multifactorial Prosperity and Flourishing Indices

The Human Development Index considered above is an important aggregated index. Along with it we are going to introduce other **aggregated social and economic** indices that are better tools for the representation of the temporary stability or instability of a country's social and economic situation.

***1-Factor Country Prosperity Index* (*1-FCPI*) (*for X-Y*)** is calculated as average GDPPC Correlation Index. ***2-Factor Country Prosperity Index (2-FCPI*) (*for X-Y*)** is calculated as average GDPPC Correlation Index multiplied on Average Monthly Salary Correlation Index.

***n-Factor Country Prosperity Index (n-FCPI*) (*for X-Y.*)** is calculated as average GDPPC Correlation Index multiplied on Average Monthly Salary Correlation Index, divided on Average Gini Index and multiplied or divided on the following (*n-3*) average indices (for X-Y). **Two first initial indices in this formula are economic, the third one is social.** The aggregated index indicated is calculated at $n \geq 3$.

This aggregated index serves for comparison between countries, and for confirmation of the functional dependence (trend) between the country's prosperity index and the national income tax rate scale progressivity index.

2-Factor Country Flourishing Index (2-FCFI) (for X-Y) is calculated as the average GDPPC Correlation Index multiplied by the average income tax rate scale progressivity index. ***3-Factor Country Flourishing Index (3-FCFI) (for X-Y)*** is calculated as the average GDPPC Correlation Index multiplied on the Average Monthly Salary Correlation Index and multiplied by average income tax rate scale progressivity index.

n-Factor Country Flourishing Index (n-FCFI) (for X-Y.) is calculated as the average GDPPC Correlation Index multiplied by the Average Monthly Salary Correlation Index, divided by the Average Gini Index, multiplied by the average income tax rate scale progressivity index, and multiplied or divided by the following (*n-4*) average indices (for X-Y**). The first two indices in this formula are economic, the second and the third ones are social.** The aggregated index indicated is calculated at $n \geq 4$.

This aggregated index serves for comparison between countries.

As an additional *n*-factor in the aggregated indices described above, we are going to use such countries' average indices as the average foreign debt index, and average share of gold in the international reserves.

It should be noted, that similar aggregated indices can be calculated also for each separate year X. However, interval indices that are introduced are **more evened out**.

2. RATING OF WORLD COUNTRIES BY PROSPERITY AND FLOURISHING INDICES (FOR 2009–2012)

In order to calculate the aggregated interval indices provided below we used previously calculated average initial numerical indices also shown below. The table below contains all the prosperity and flourishing indices

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Country	1-, 2-, 3-, 4- and 5-Factor Prosperity Indices					2-, 3-, 4-, 5- and 6-Factor Flourishing Indices				
Australia	0.8722	0.6977	1.9821	8.9082	0.7242	1.2662	1.0128	2.8774	12.9321	1.0514
Austria	0.8672	0.9135	3.1392	4.3752	2.4414	1.2215	1.2867	4.4216	6.1625	3.4387
Armenia	0.1255	0.0181	0.0679	0.1996	0.0000	0.1757	0.0254	0.0950	0.2794	0.0000
Belarus	0.3003	0.0883	0.3108	0.7534	0.1857	0.3003	0.0883	0.3108	0.7534	0.1857
Belgium	0.8001	0.7442	2.2552	2.3189	0.8738	1.0668	0.9923	3.0070	3.0921	1.1651
Bulgaria	0.3078	0.0708	0.2509	1.5683	0.1576	0.3078	0.0708	0.2509	1.5683	0.1576
Brazil	**0.2372**	**0.1309**	**0.2392**	**0.3666**	**0.0023**	**0.3728**	**0.2057**	**0.3760**	**0.5762**	**0.0036**
Great Britain	0.7432	0.6982	2.1156	2.6951	0.3450	1.4864	1.3963	4.2313	5.3902	0.6899
Hungary	0.4424	0.0979	0.3138	0.3972	0.0012	0.4424	0.0979	0.3138	0.3972	0.0012
Vietnam	0.0696	0.0022	0.0062	0.0122	0.0000	0.1217	0.0039	0.0109	0.0213	0.0000
Germany	0.8057	0.6716	2.3733	2.9573	2.0923	1.2291	1.0246	3.6204	4.5114	3.1918
Hong Kong	1.0221	0.4840	1.1151	3.3041	0.0000	1.8290	0.8661	1.9955	5.9126	0.0000
Greece	0.5667	0.3994	1.1645	0.7636	0.6039	1.1333	0.7989	2.3290	1.5272	1.2077
Denmark	0.8487	1.0499	3.7768	8.6327	0.3237	1.2420	1.5366	5.5273	12.6339	0.4738
India	0.0746	0.0067	0.0202	0.0292	0.0025	0.1119	0.0101	0.0303	0.0437	0.0038
Ireland	0.8718	0.8007	2.3344	2.4508	0.3635	1.1719	1.0764	3.1381	3.2946	0.4886
Spain	0.6735	0.4854	1.3989	2.0348	0.6894	0.9127	0.6579	1.8959	2.7577	0.9343
Italy	0.6822	0.5112	1.4201	1.1809	0.8243	0.8889	0.6662	1.8505	1.5389	1.0741
Kazakhstan	0.2650	0.0612	0.2117	1.9241	0.2767	0.2650	0.0612	0.2117	1.9241	0.2767
Canada	0.8469	0.7071	2.1689	2.5441	0.0071	1.1164	0.9320	2.8590	3.3537	0.0094
China	0.1680	0.0338	0.0795	0.2013	0.0033	0.3150	0.0634	0.1491	0.3774	0.0062
Latvia	0.3778	0.1271	0.3473	0.9388	0.0472	0.3778	0.1271	0.3473	0.9388	0.0472
Lithuania	0.4202	0.0824	0.2193	0.6008	0.0200	0.4202	0.0824	0.2193	0.6008	0.0200
Moldavia	0.0671	0.0090	0.0314	0.1255	0.0001	0.0966	0.0130	0.0452	0.1807	0.0001
Netherlands	0.8868	0.7260	2.8138	4.3794	2.5764	1.5941	1.3049	5.0578	7.8720	4.6311
Norway	1.2417	1.3266	5.1420	10.3356	0.0000	1.5804	1.6885	6.5447	13.1552	0.0000
Poland	0.4306	0.2027	0.5945	1.0959	0.0548	0.5512	0.2595	0.7610	1.4027	0.0701
Portugal	0.5340	0.1905	0.5571	0.5530	04818	0.8202	0.2927	0.8557	0.8493	0.7400
Russia	**0.4518**	**0.1682**	**0.2003**	**1.7416**	**0.0136**	**0.4518**	**0.1682**	**0.2003**	**1.7416**	**0.0136**
Romania	0.3258	0.0953	0.3175	1.0326	0.1056	0.3258	0.0953	0.3175	1.0326	0.1056
USA	1.0000	1.0000	2.4510	2.4757	1.8340	2.0000	2.0000	4.9020	4.9515	3.6681
Ukraine	0.1454	0.0306	0.1162	0.3163	0.0153	0.1545	0.0325	0.1235	0.3361	0.0162
Finland	0.7754	0.6952	2.5843	5.3011	1.1424	1.2870	1.1538	4.2891	8.7982	1.8960
France	0.7327	0.6481	2.1748	2.5814	1.7657	1.2922	1.1429	3.8353	4.5523	3.1138
Croatia	0.4109	0.1208	0.3584	0.8008	0.0000	0.6322	0.1858	0.5514	1.2321	0.0000
Czech Republic	0.5457	0.2987	1.1853	3.0392	0.0410	0.5457	0.2987	1.1853	3.0392	0.0410
Switzerland	1.0467	1.5898	4.7175	9.7268	1.7314	2.0934	3.1796	9.4350	19.4536	3.4627
Sweden	0.8428	0.7808	3.1232	8.0083	0.9354	1.6855	1.5616	6.2465	16.0166	1.8707
Estonia	0.4447	0.1727	0.4797	6.8526	0.1987	0.4447	0.1727	0.4797	6.8526	0.1987
Japan	0.7078	0.5470	1.4395	0.6455	0.0192	1.2868	0.9946	2.6173	1.1737	0.0350

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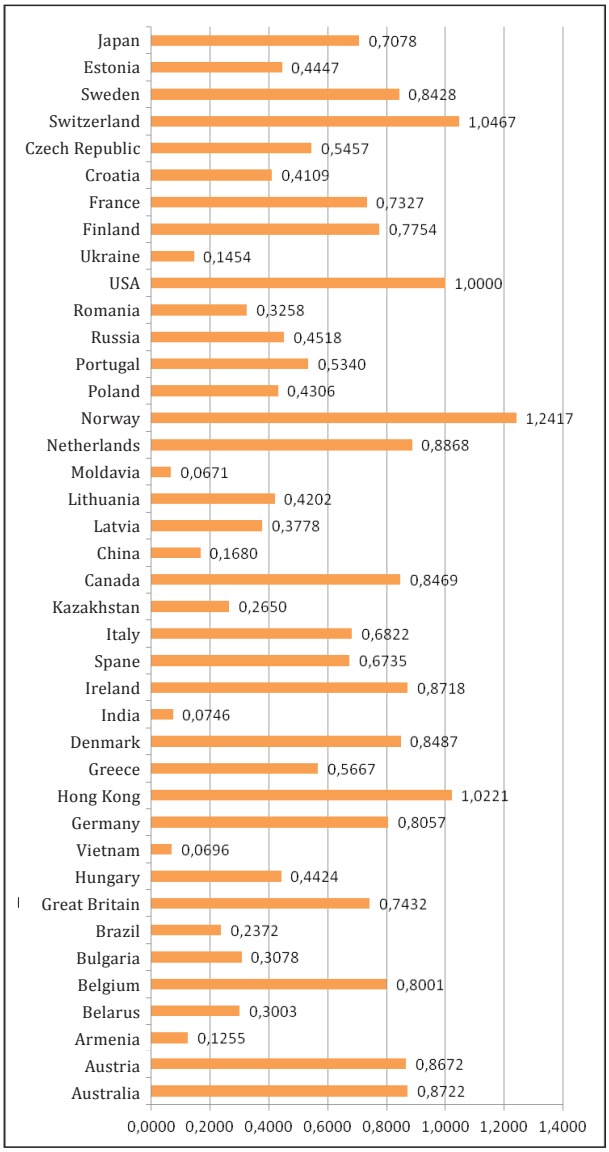

Fig. 1

calculated by countries, with an indication of the sequence consisting **of ten numbers** separated by a vertical dash for each country: 1-, 2-, 3-, 4- and 5-Factor Prosperity Indices and 2-, 3-, 4-, 5- and 6-Factor Flourishing Indices respectively.

It should be noted that four figures after the point should not misinform the reader regarding the accuracy of the listed data. In the opinion of the authors, the accuracy of the statistical data can be evaluated at best to be in the range of 5–10% of each number. Consequently, this is also the accuracy of the final list data.

Well-being indices from this list and the average income tax rate scale progressivity index from the section 1.1.4 are used in the next part of the article.

2.1. RATING OF WORLD COUNTRIES BY PROSPERITY INDICES (FOR 2009–2012)

2.1.1. Rating by 1-Factor Prosperity Index (for 2009–2012)

1-Factor Country Prosperity Index (1-FCPI) (for X-Y) is calculated as the average GDPPC Correlation Index (fig. 1).

In this rating the lowest index value of 0.0696 is shown by Vietnam, while the highest value of 1.2417 — by Norway. The difference between them is equal to 1.1721. Let us divide the interval of 0.0696–1.2417 into ten parts (deciles). The lowest decile intervals (first and second) are 0.0696–0.1868 and 0.1868–0.3040, while the highest (tenth and ninth) decile intervals are 1.2417–1.1245, 1.1245–1.007. The median is equal to 0.6557.

The **lowest (first and second) intervals** include Armenia, Belarus, **Brazil — 0.2372,** Vietnam, India, Kazakhstan, China, Moldavia and Ukraine. **The lower (fourth) interval includes Russia — 0.4518.**

The **uppest (tenth and ninth) intervals** include Hong Kong, Norway, Switzerland. The **upper half** includes Australia, Austria, Belgium, Great Britain, Germany, Hong Kong, Denmark, Ireland, Spain, Italy, Canada, Netherlands, Norway, USA, Finland, France, Switzerland, Sweden, and Japan.

2.1.2. Rating by 2-Factor Prosperity Index (for 2009–2012)

***2-Factor Country Prosperity Index (2-FCPI*) (*for X-Y*)** is calculated as average GDPPC Correlation Index multiplied on Average Monthly Salary Correlation Index.

In this rating the lowest index value of 0.0022 is shown by Vietnam, while the highest value of 1.5898 — by Switzerland. Difference between them is equal to 1.5876.

DOI: 10.7256/1339-3057.2014.4.13566

Fig. 2

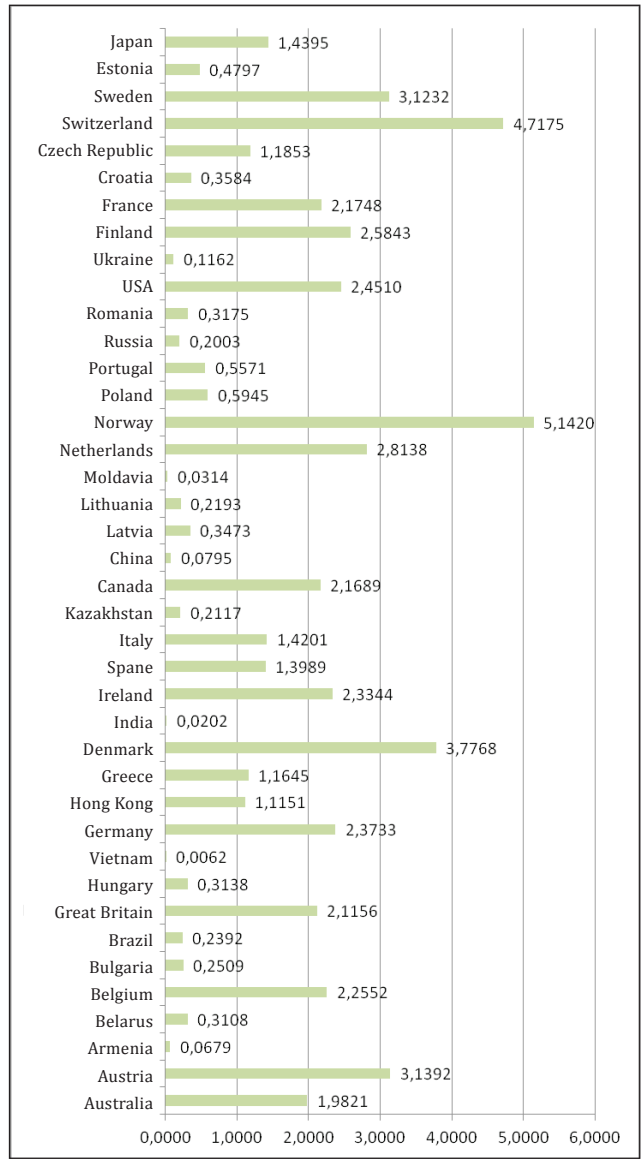

Fig. 3

Let us divide the interval of 0.0022–1.5898 to ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0022–0.1610 and 0.1610–0.3198, while the **highest (tenth and ninth)** decile intervals are 1.5898–1.4310 and 1.4310–1.2722. The median is equal to 0.796.

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria, **Brazil-0.1309,** Hungary, Vietnam, India, Kazakhstan, China, Latvia, Lithuania, Moldavia, Poland, Portugal, **Russia–0.1682,** Romania, Ukraine, Finland, Croatia, Czech Republic, Estonia.

The **highest (tenth and ninth)** intervals include Norway, Switzerland. The **upper half** includes Austria, Denmark, Ireland, Norway, USA and Switzerland. Fig. 2.

2.1.3. Rating by 3-Factor Prosperity Index (for 2009–2012)

***3-Factor Country Prosperity (3-FCPI*) (*for 2009–2012*)** is calculated as Average GDPPC Correlation Index multiplied by Average Monthly Salary Correlation Index and divided on Average Gini Index (for 2009–2012). Fig. 3.

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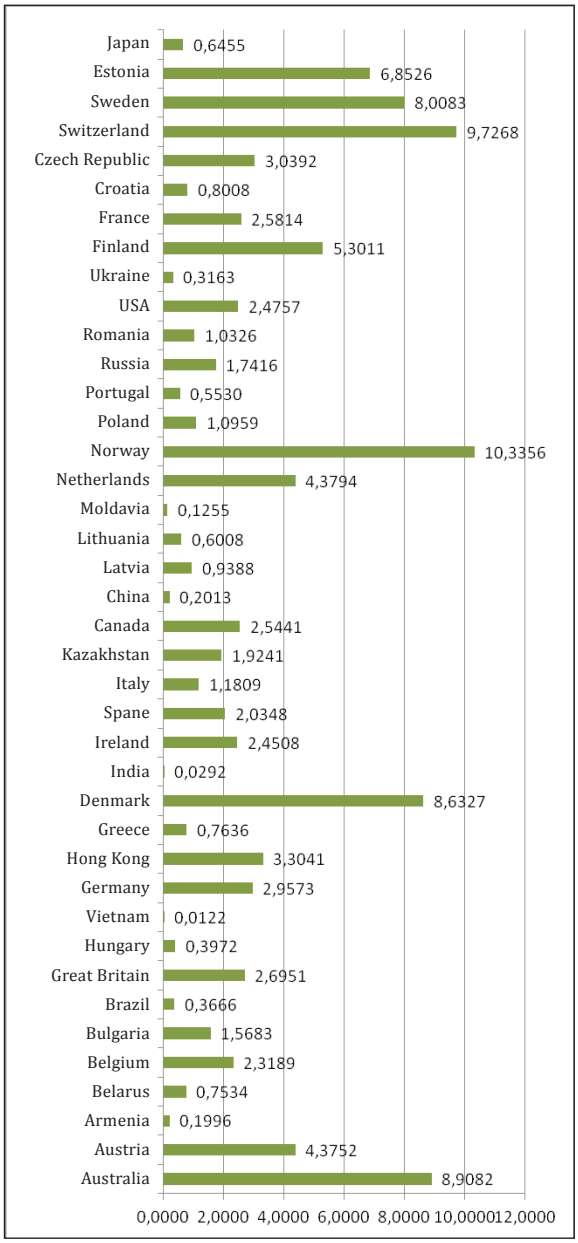

Fig. 4

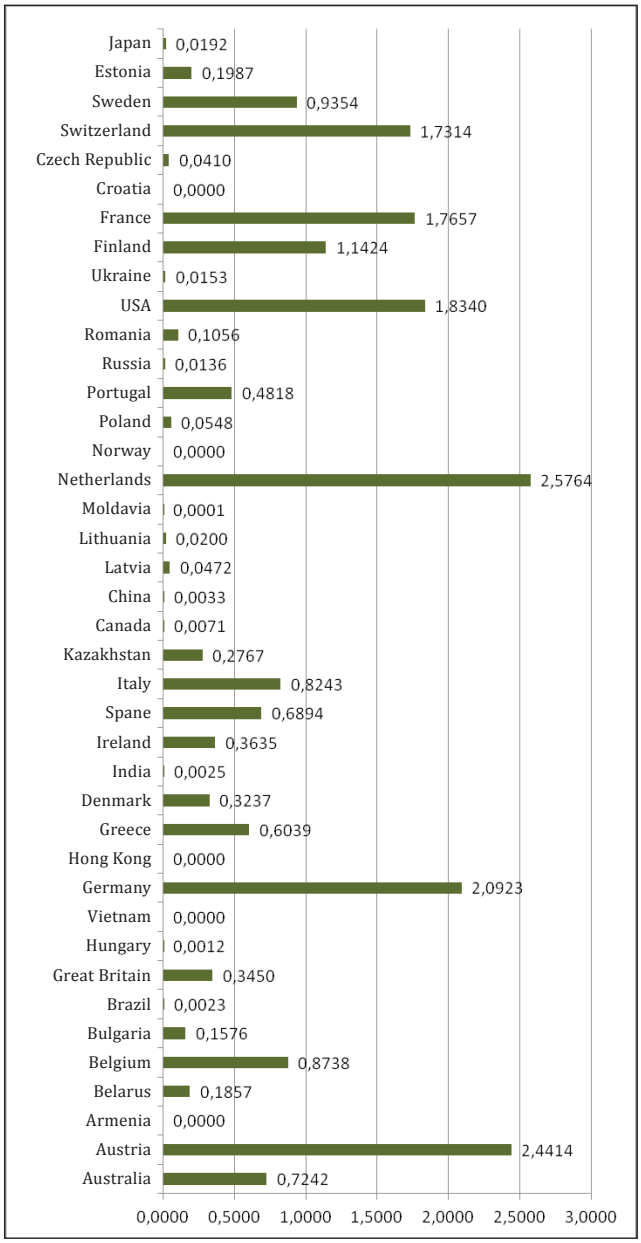

Fig. 5

In this rating the lowest index value of 0.0062 is shown by Vietnam, while the highest value of 5.1420 — is by Norway. The difference between them is equal to 5.1358. Let us divide the interval of 0.0062–5.1358 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0062–0.5198 and 0.5198–1.0334, while the **highest (tenth and ninth)** decile intervals are 5.1358–4.6222 and 4.6222–4.1086. The median is equal to 0.796.

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria, **Brazil — 0.2392,** Hungary, Vietnam, India, Kazakhstan, China, Latvia, Lithuania, Moldavia, Poland, Portugal, **Russia — 0.2003,** Romania, Ukraine, Croatia, Estonia.

The **highest (tenth and ninth) intervals** include Norway, Switzerland. The **upper half** includes Austria, Denmark, the Netherlands, Norway, Switzerland and Sweden.

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2.1.4. Rating by 4-Factor Prosperity Index (for 2009–2012)

4-Factor Country Prosperity Index (4-FCPI) (for 2009–2012) is calculated as the average GDPPC Correlation Index multiplied by the Average Monthly Salary Correlation Index, divided by the Average Gini Index and **divided** by the National Debt Index (for 2009–2012).

In this rating the lowest index value of 0.0122 is shown by Vietnam, while the highest value of 10.3356 — is by Norway. The difference between them is equal to 10.3234. Let us divide the interval of 0.0122–10.3356 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0122–1.0445 and 1.0445–2.0768, while **the highest (tenth and ninth)** decile intervals are 10.3356–9.3033 and 9.3033–8.2710. The median is equal to 5.1739.

The **lowest (first and second) intervals** include Armenia, Belarus, **Brazil-0.3666,** Hungary, Vietnam, Greece, India, Spain, Italy, Kazakhstan, China, Latvia, Lithuania, Moldavia, Poland, Portugal, **Russia-1.7416,** Romania, Ukraine, Croatia, Japan.

The **highest (tenth and ninth)** intervals include Australia, Denmark, Norway and Switzerland. The **upper half** includes Australia, Denmark, Norway, Finland, Switzerland, Sweden, and Estonia. Fig. 4.

2.1.5. Rating by 5-Factor Prosperity Index (for 2009–2012)

5-Factor Country Prosperity Index (5-FCPI) (for 2009–2012) is calculated as the average GDPPC Correlation Index multiplied by the Average Monthly Salary Correlation Index, divided by the average Gini Index, **divided** by the National Debt Index, and multiplied by the Share of Gold in the International Reserves (for 2009–2012). Fig. 5.

In this rating the lowest index value of 0 is shown simultaneously by several countries, and namely by: Armenia, Vietnam, Hong Kong, Norway and Croatia, while the highest value of 2.5764 — is by the Netherlands. The difference between them is equal to 2.5764. Let us divide the interval of 0–2.5764 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0–0.2576 and 0.2576–0.5152, while **the highest (tenth and ninth)** decile intervals are 2.5764–2.3188 and 2.3188–2.0612. The median is equal to 1.2882.

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria, **Brazil-0.0023,** Great Britain, Hungary, Vietnam, Hong Kong, Denmark, India, Ireland, Kazakhstan, Canada, China, Latvia, Lithuania, Moldavia, Norway, Poland, Portugal, **Russia-0.0136,** Romania, Ukraine, Croatia, Czech Republic, Estonia, Japan.

The **highest (tenth and ninth) intervals** include Austria, Germany, and the Netherlands. The **upper half** includes Austria, Germany, the Netherlands, USA, France and Switzerland.

2.2. RATING OF WORLD COUNTRIES BY FLOURISHING INDICES (FOR 2009–2012)

2.2.1. Rating by 2-Factor Flourishing Index (for 2009–2012)

2-Factor Country Flourishing Index (2-FCFI) (for X-Y) is calculated as the average GDPPC Correlation Index multiplied by the average income tax rate scale progressivity index.

In this rating the lowest index value of 0.0966 is shown by Moldavia, while the highest value of 2.0934 — is by Switzerland. The difference between them is equal to 1.9968. Let us divide the interval of 0.0966–2.0934 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0966–0.2963 and 0.2963–0.4960, while the **highest (tenth and ninth)** decile intervals are 2.0934–1.8937 and 1.8937–1.6940. The median is equal to 1.095.

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria,

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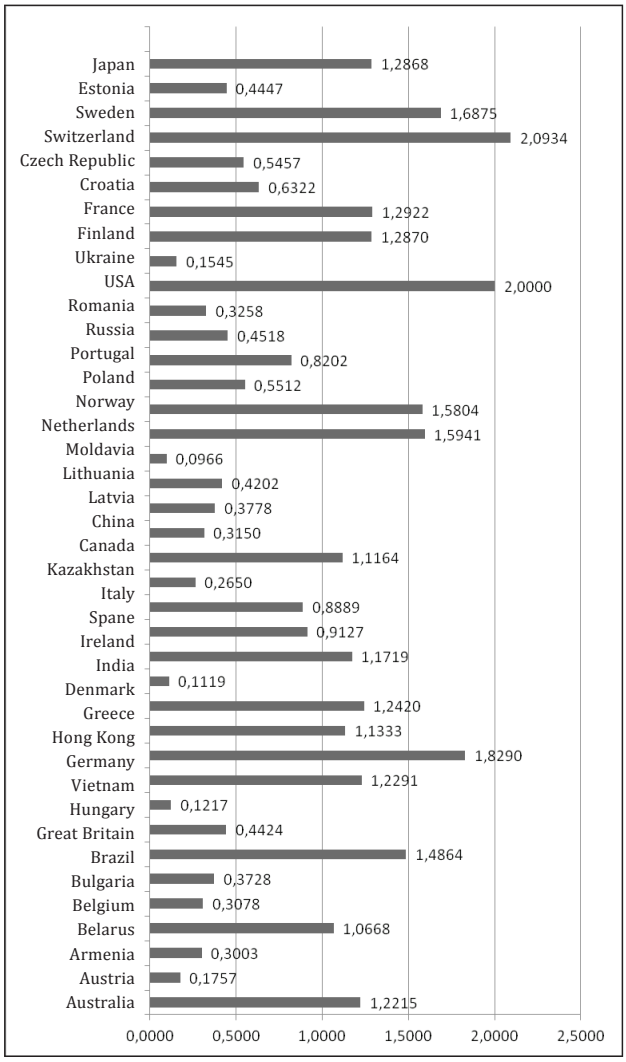

Fig. 6

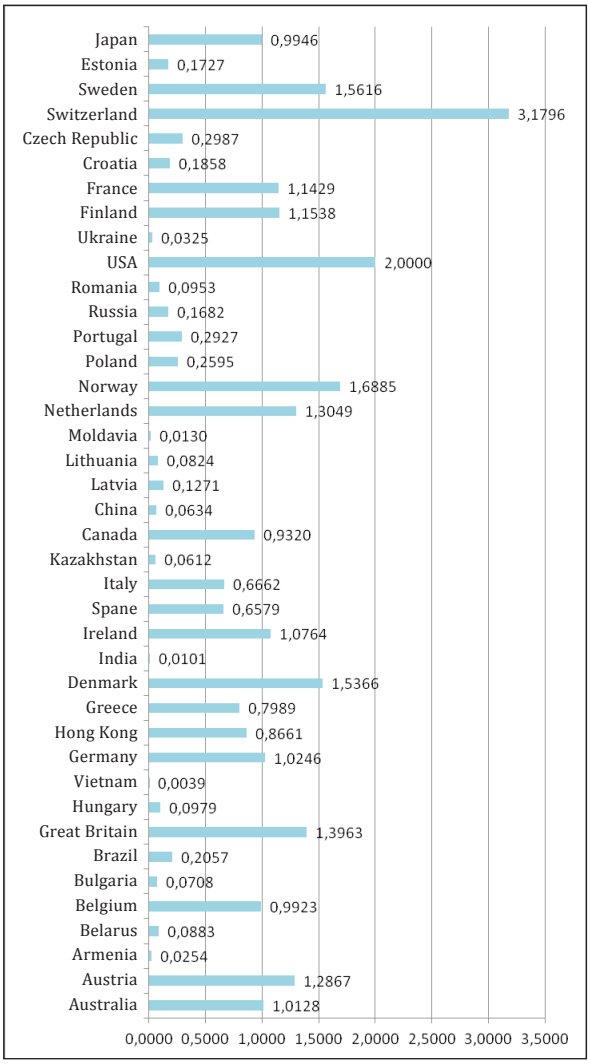

Fig. 7

Brazil-0.3728, Vietnam, India, Kazakhstan, China, Latvia, Lithuania, Moldavia, **Russia-0.4518,** Romania, Ukraine and Estonia.

The **highest (tenth and ninth) intervals** include Hong Kong, USA, Switzerland. The **upper half** includes Austria, Great Britain, Germany, Hong Kong, Greece, Denmark, Ireland, Canada, the Netherlands, Norway, USA, Finland, France, Switzerland, Sweden and Japan. Fig. 6.

2.2.2. Rating by 3-Factor Flourishing Index (for 2009–2012)

3-Factor Country Flourishing Index (3-FCFI) (for X-Y) is calculated as the average GDPPC Correlation Index multiplied by the Average Monthly Salary Correlation Index and multiplied by the average income tax rate scale progressivity index. Fig. 7.

In this rating the lowest index value of 0.0039 is shown by Vietnam, while the highest value of 3.1796 — is by Switzerland. The difference between them is equal to 3.1757. Let us divide the interval of 0.0039–3.1796 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0039–0.3215 and 0.3215–0.6391, while the **highest (tenth and ninth)** decile intervals are 3.1796–2.86203 and 2.86203–2.5441. The median is equal to 1.5918.

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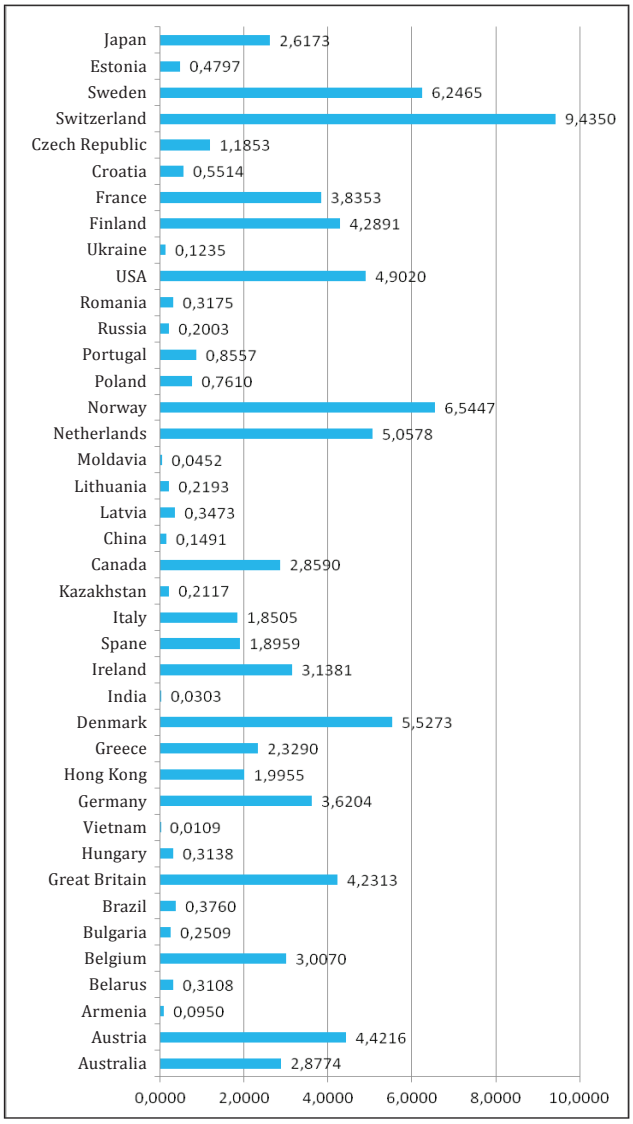

Fig. 8

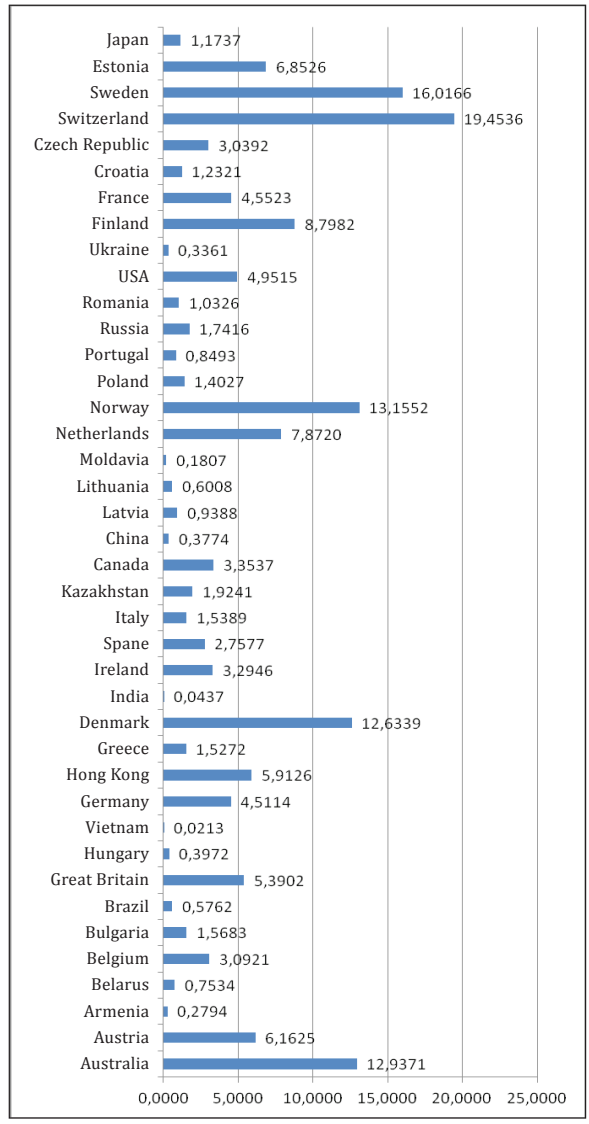

Fig. 9

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria, **Brazil — 0.2057,** Hungary, Vietnam, India, Kazakhstan, China, Latvia, Lithuania, Moldavia, Poland, Portugal, **Russia — 0.1682,** Romania, Ukraine, Croatia, Czech Republic, Estonia.

The **highest (tenth and ninth) intervals** include Switzerland. The **upper half** includes Norway, USA and Switzerland.

2.2.3. Rating by 4-Factor Flourishing Index (for 2009–2012)

4-Factor Country Flourishing Index (4-FCFI) (for 2009–2012) is calculated as the average GDPPC Correlation Index multiplied by the average Monthly Salary Correlation Index, divided by the average Gini Index, and multiplied by the average income tax rate scale progressivity index (for 2009–2012).

In this rating the lowest index value of 0.0109 is shown by Vietnam, while the highest value of 9.4350 — is by Switzerland. The difference between them is equal to 9.4241. Let us divide the interval of 0.0109–9.4350 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0109–0.9533 and 0.9533–1.8957, while the **highest (tenth and ninth)** decile intervals are

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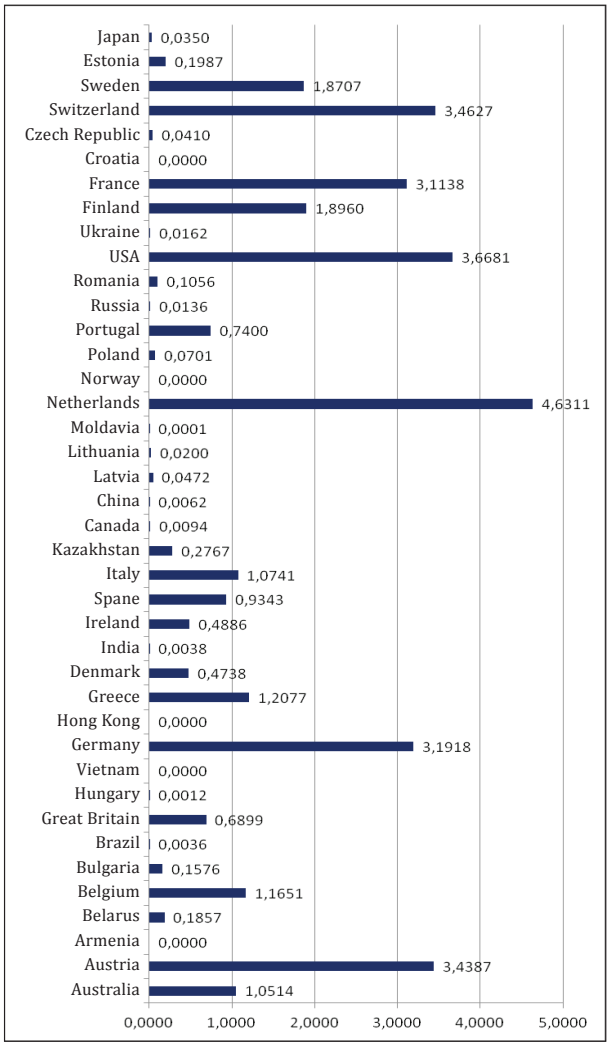

Fig. 10

9.4350–8.4926 and 8.4926–7.5502. The median is equal to 4.7230.

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria, **Brazil — 0.3760,** Hungary, Vietnam, India, Italy, China, Latvia, Lithuania, Moldavia, Poland, Portugal, **Russia — 0.2003,** Romania, Ukraine, Croatia, Czech Republic, Estonia.

The **highest (tenth and ninth) intervals** include Switzerland. The **upper half** includes Denmark, the Netherlands, Norway, USA, Switzerland and Sweden. Fig. 8.

2.2.4 Rating by 5-Factor Flourishing Index (for 2009–2012)

5-Factor Country Flourishing Index (5-FCFI) (for 2009–2012) is calculated as the average GDPPC Correlation Index multiplied by the Average Monthly Salary Correlation Index, divided by the average Gini Index and multiplied by the average income tax rate scale progressivity index and **divided** by the average National Debt Index (for 2009–2012). Fig. 9.

In this rating the lowest index value of 0.0213 is shown by Vietnam, while the highest value of 19.4536 — is by Switzerland. The difference between them is equal to 19.4323. Let us divide the interval of 0.0213–19.4536 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0.0213–1.9645 and 1.9645–3.9077, while the **highest (tenth and ninth)** decile intervals are 19.4536–17.5104 and 17.5104–15.5672. The median is equal to 9.7375.

The **lowest (first and second) intervals** include Armenia, Belarus, Belgium, Bulgaria, **Brazil — 0.5762,** Hungary, Vietnam, Greece, India, Ireland, Spain, Italy, Kazakhstan, Canada, China, Latvia, Lithuania, Moldavia, Poland, Portugal, **Russia — 1.7416,** Romania, Ukraine, Croatia, Czech Republic, Japan.

The **highest (tenth and ninth) intervals** include Switzerland, Sweden. The **upper half** includes Australia, Denmark, Norway, Switzerland and Sweden.

2.2.5. Rating by 5-Factor Flourishing Index (for 2009–2012)

6-Factor Country Flourishing Index (6-FCFI) (for 2009–2012) is calculated as the average GDPPC Correlation Index multiplied by the Average Monthly Salary Correlation Index, divided by the average Gini Index, and multiplied by the average income tax rate scale progressivity index, **divided** by the average National Debt Index, and multiplied by the Average Share of Gold in International Reserves (for 2009–2012).

In this rating the lowest index value of 0 is shown simultaneously by sev-

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Comparative Analysis of the Prosperity and Flourishing Indices of Brazil and Russia

Country	1-, 2-, 3-, 4- and 5-Factor Prosperity Indices					2-, 3-, 4-, 5- and 6-Factor Flourishing Indices				
Brazil	0.2372	0.1309	0.2392	0.3666	0.0023	0.3728	0.2057	0.3760	0.5762	0.0036
Russia	0.4518	0.1682	0.2003	1.7416	0.0136	0.4518	0.1682	0.2003	1.7416	0.0136

eral countries, and namely by: Armenia, Vietnam, Hong Kong, Norway and Croatia, while the highest value of 4.6311 — is by the Netherlands. The difference between them is equal to 4.6311. Let us divide the interval of 0–4.6311 into ten parts (deciles). The **lowest (first and second)** decile intervals are 0–0.4631 and 0.4631–0.8992, while the **highest (tenth and ninth)** decile intervals are 4.6311–4.1680 and 4.1680–3.7049. The median is equal to 2.3156.

The **lowest (first and second) intervals** include Armenia, Belarus, Bulgaria, **Brazil–0.0036,** Great Britain, Hungary, Vietnam, Hong Kong, Denmark, India, Ireland, Kazakhstan, Canada, China, Latvia, Lithuania, Moldavia, Norway, Poland, Portugal, **Russia — 0.0136,** Romania, Ukraine, Croatia, Czech Republic, Estonia, Japan.

The **highest (tenth and ninth) intervals** include the Netherlands. The **upper half** includes Austria, Germany, the Netherlands, USA, France and Switzerland. Fig. 10.

2.2.6. Summarizing the Analysis of the Ratings Provided

The analysis of each prosperity and flourishing indices rating provided above shows that all ratings clearly reflect the following:

1. The authors' preliminary idea of correlation between **current** social and economic situation of the main world countries;

2. The authors' preliminary idea about the correlation of these social and economic situations' **temporary stability**.

Especially clearly they reflect the dramatic **differentiation** between the developed and developing countries.

Unfortunately, Russia relates to the "developing" country group. Among all the developing countries it is most suitable to compare Russia with Brazil. First of all, these countries are close by size of population (population of Brazil in 2013 grown to 200 million people, while the population of Russia has been reduced to 144 million people). Secondly, Russia and Brazil are the countries with raw export-orientated economy.

A comparison of all the prosperity and flourishing indices provided above for Brazil and Russia shows the obvious **similarity** of these countries. The total of all **ten indices** for Brazil is equal to 2.5105, while the total of all **ten indices** for Russia is equal to 5.151. It obviously shows, that **Russia still has a better social and economic situation than Brazil has**.

However, **in all** the ratings, **except the rating by one 1-factor prosperity index (the exception relates only to Russia),** both countries are located in the **lowest** decimal part (**in the first and second** lower deciles) of corresponding indices value intervals. Switzerland is located in the **highest** decimal part **(in the ninth and tenth** upper deciles) of corresponding indices value intervals, **except the rating by five-factor prosperity index and sex-factor flourishing index,** where the upper decimal part is occupied by the Netherlands. In the ratings we have been considering the upper half of the corresponding indices value intervals

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is occupied by such countries as Denmark (70% of cases), the Netherlands (60% of cases), Norway (80% of cases), USA (70% of cases), Switzerland (100% of cases) and Sweden (60% of cases). It should be noted that all those countries use the progressive income tax rate scale.

It shows a gap between Russia and the abovementioned countries **to the extent of two and half times the size**. Therefore, when compared with the prosperity and flourishing countries we have indicated, Russia (along with Brazil) appears to be disadvantaged and not growing, and, thus, quite an unstable country in its social and economic situation in the long-term perspective.

The low Tax Rate Schedule Progressivity Index 1 in Russia contributes significantly to the decreasing of flourishing indices.

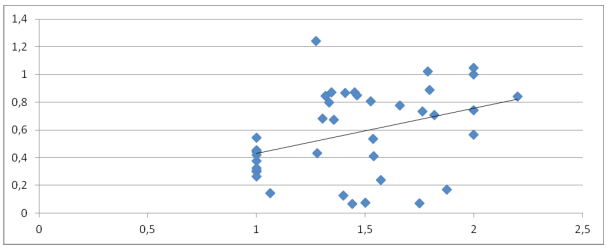
In the authors' opinion it confirms the fact that in order to ensure the prosperity and flourishing of Russia, it is necessary to implement the progressive income tax rate scale in the earliest possible timeframe.

3. DEPENDENCE OF COUNTRY PROSPERITY INDEX ON INCOME TAX RATE SCALE PROGRESSIVITY INDEX

3.1. LINEAR DEPENDENCE TRENDS OF MULTIFACTORIAL COUNTRY PROSPERITY INDICES ON INCOME TAX RATE SCALE PROGRESSIVITY INDEX

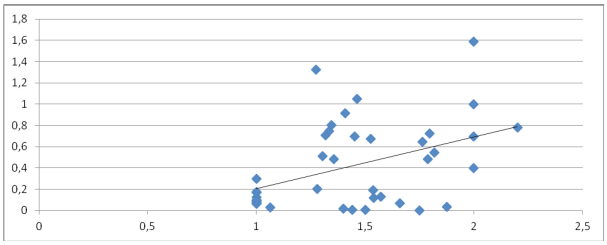
In order to identify the linear dependence trends of multifactorial country prosperity indices on income tax rate scale progressivity index, let us consider the random values X and Y. And namely, X is always PIT rate schedule progressivity index, while Y is the different n-factor prosperity indices for n=3, 4, 5, on a sequence basis. In the system of axis as indicated we set up a corresponding point for each country. Then for the cluster of points we obtain we sort out the best approximating straight line, hereafter referred to as the *given cluster linear trend*, by the least square method.

3.1.1. Linear Trend for 1-Factor Prosperity Index (for 2009–2012)



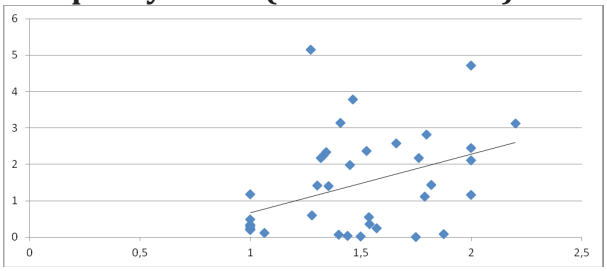
Approximate equation for 1-Factor Country Prosperity Index Linear Trend is $y=0.3x+0.2$, where numerical indices are calculated within the accuracy of ± 0.1. The key index here is $k=0.3\pm 0.1$. As long as it is greater than zero, **the positive linear trend dependence of country prosperity index on income tax rate scale progressivity index takes place.**

3.1.2. Linear Trend for 2-Factor Prosperity Index (for 2009–2012)



Approximate equation for 2-Factor Country Prosperity Index Linear Trend is $y=0.5x-0.3$, where numerical indices are calculated within the accuracy of ± 0.1. The key index here is $k=0.5\pm 0.1$. As long as it is greater than zero, **the positive linear trend dependence of country prosperity index on income tax rate scale progressivity index takes place.**

3.1.3. Linear Trend for 3-Factor Prosperity Index (for 2009–2012)



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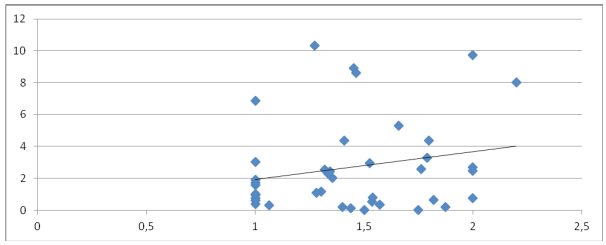
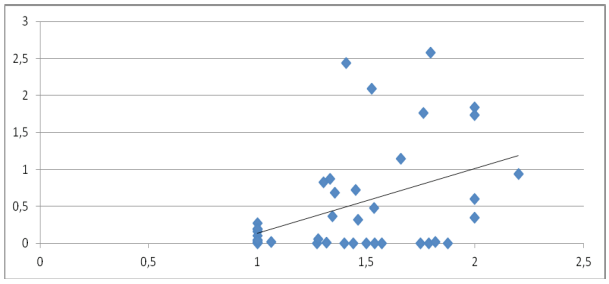
Approximate equation for 3-Factor Country Prosperity Index Linear Trend is *y=1.5x-0.8*, where numerical indices are calculated within the accuracy *±0.1.* The key index here is *k=1.5±0.1.* As long as it is greater than zero, **the positive linear trend dependence of country prosperity index on income tax rate scale progressivity index takes place.**

3.1.4. Linear Trend for 4-Factor Prosperity Index (for 2009–2012)



Approximate equation for 4-Factor Country Prosperity Index Linear Trend is *y=1.65x+0.35*, where numerical indices are calculated within the accuracy *±0.1.* The key index here is *k=1.65±0.1*. It **confirms** the drawn above conclusion regarding the existence of the indicated linear trend dependence.

3.1.5. Linear Trend for 5-Factor Prosperity Index (for 2009–2012)



Approximate equation for 5-Factor Country Prosperity Index Linear Trend is *y=0.8x-0.6*, where numerical indices are calculated within the accuracy *±0.1.* The key index here is *k=0.8±0.1*. It **further** confirms the drawn above conclusion regarding the existence of the indicated linear trend dependence.

3.2. STRENGTH OF FUNCTIONAL DEPENDENCE OF COUNTRY PROSPERITY INDEX ON INCOME TAX RATE SCALE PROGRESSIVITY INDEX

In order to determine the strength of the functional dependence of the country prosperity index, as *Y* random value, on the scale progressivity index of the income tax rate, as *X* random value, we have to perform the following calculations:

1) *Sample means Mch* (*X*) *and Mch* (*Y*);

2) *Sample mean square deviations* σ*ch* (*X*) = (*Mch* ((*X*–*Mch* (*X*)) 2)) 0,5 *and* σ*ch* (*Y*) = (*Mch* ((*Y*–*Mch* (*Y*)) 2)) 0,5;

3) *Sample correlation moment of pair* (*X, Y*) μ*ch* (*X, Y*) =*Mch* ((*X*–*Mch* (*X*)) (*Y*–*Mch* (*Y*)));

4) *Sample correlation coefficient of pair* (*X, Y*) *rch* (*X, Y*) = μ*ch* (*X, Y*)/(σ*ch* (*X*) σ*ch* (*Y*)).

Sample equation of regression straight line Y on X is *y*–*Mch* (*Y*) =*rch* (*X, Y*) σ*ch* (*Y*) (*x*–*Mch* (*X*)) /σ*ch* (*X*).

Equation of regression straight line by prosperity indices is the following:

By 1-factor index	*y=0.3343x+0.0934*
By 2-factor index	*y=0.5016x-0.3003*
By 3-factor index	*y=1.6178x-0.9381*
By 4-factor index	*y=1.6315x+0.3565*
By 5-factor index	*y=0.9078x-0.7838*

In mathematical statistics it is considered that the closer the module |*rch* (*X, Y*) | of sample correlation coefficient id to 1, the stronger functional dependence between random values *X* and *Y* is.

For 1-factor, 2-factor, 3-factor, 4-factor and 5-factor prosperity indices the sample correlation coefficient equals to 0.3715, 0.4304, 0.4118, 0.1940 и 0.4238 respectively.

It means that **linear trend dependence between 1-factor, 2-factor, 3-factor, 4-factor and 5-factor country prosperity indices and index of the scale progressivity of a personal income tax rate is linear functional by 37%, 43%, 41%, 20% and 42%, respectively**.

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Based on the above, we can draw the unfavourable conclusion: **the flat income tax rate scale adopted in Russia negatively affects the country's prosperity.**

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