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Globalization and its Socio-Economic Consequences 2019

Restructuring of International Finance for Sustainable Development of The Global Economy

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Abstract. The global crisis of 2008–2009 and its long post-crisis recession have raised questions about the future structure of the world economy. The crisis is viewed as a crash of the basic elements of the global economy's system. The international markets of financial assets failed to regulate themselves and aggravated conflicts between global and national finance. In 2010–2019 the world economy faced the risks for sustainable development. Deglobalization and dedollarization procedures questioned the previous philosophy and world economic leadership. According to the main results of a research, international financial institutions have deficiency of means for the solution of civilization problems. The world banking system, enhancing capital base according to BIS III, is defenseless against a big share in balance of derivatives and off-balance obligations. The post-crisis economy is unstable before the risks of dropping rates by 70% of the world's economy. The system's solution to problems of ensuring sustainable development relies on "three whales": change of the domestic economic policy in the direction of structural reforms for the 4.0 Revolution, ensuring productivity growth, smooth transition to a flexible exchange rate, decrease in the public and corporate debts; transition to cross-border policy without tariff wars; and focus of the world economy in civilization's problems, quitting a competition for leadership in favor of the multipolar world, orientation to quality of life and SDR as the reserve currency.

1. Introduction

The global crisis of 2008–2009 and its long post-crisis recession have raised questions about the future of the world economy. There are four matters discussed: essence of global crisis, choosing the basics for regulation of the post financial system's crisis, fundamental directions to the architecture of the global finance system in the XXI century and prospectus of Global finance that is reversibility of globalization. Changing of the World leader.

2. Methods

The paper has leaned on classical methods of data analysis and analytics of the IMF, World Bank, BIS, research and publications. The method included comparison of economic data, group of indicators and analytical tables.

3. Main results

The first matter concerns about the global financial and economic crisis of 2008–2009 and its origins: whether the first world crisis of the XXI century is a crisis caused by the financial system based on the monetarism model and technologies of the XX century or a crisis of its separate components?

The global financial system is an unstable system and it is based on the assumption that international financial markets (money, capital and foreign exchange) are regulated by the «market fundamentals» and an «invisible hand» of free competition. However, under the pressure of the system's crisis, which didn't have prudential regulation, failed.

The IMF, the major institution of global finance, has insufficient credit resources with a deficit of $500 bln. and tends to ignore the role of new emerging economies. *The world currency system* remains unstable because of the weaknesses of dollarized economies, while commodity markets are unbalanced by the fixed rate of the Yuan. *Multinational banks (MNB)* have insufficient capital adequacy according to Basel III and Free Capital, a big share of short positions in investment portfolio, $600 bln. in derivatives (87% of world GDP), out-of-balance liabilities, beside the use of depositary accounts in trading operations. Some have even been spotted money-laundering through their offshore branches and taking risks in fiduciary deals.

The markets of financial assets also have weaknesses. The money market had an insufficient level of the syndicated credit inemerging markets. Debt capital market used SPV. Forex earned money from real asset markets; ultrahigh profitability increased volumesof speculative deals turnover reached 75% ($3–4 bln. a day). On the stock market, numerous short-term operations (up to 6 months) made it more difficult to determine a fair price when estimating capitalization of companies.

Problems of national financial safety remain unsolved. There is excessive public debt: 200% against 60% forecasted by the UN, IMF and EU. Cumulative tax and gross national product ratio are 60–80% against an optimum value of 15–30%. There is also a problem of money surplus sterilization.

The second key question of post-crisis world financial system is a matter of its regulation. What should be the basis for the international financial system, national sovereignty and protectionism or international regulation? There are two possible solutions. Focus on national sovereignty does not exclude, for example, both orientation to the Basel standards of capital adequacy, and protectionist measures which were carried out by the central banks of Norway, England, Switzerland, ECB and FRS (the Dodd-Franc Act). The second solution broke against global crisis causing 10 years of recession and a new trend to deglobalization. However, 40 years of history of globalization have obvious (with all their shortcomings) good examples of the international agreements. Among them, the GATT/WTO (the average world import duties fell from 55% to 2–3%), Basel standards (I, II, III), IAS, SWIFT, Trade finance.

What are global risks in the post-crisis period. From the end of 2009 to the beginning of 2010, the majority of G20 countries announced that they had overcome the global crisis. However, the post-crisis period had its new risks.

Risks of decreasing rates in the development of global economy. During the post-crisis period (2010–2018) average annual growth rates of the world economy was 3.44%. Substantially it became result of long, soft national and regional anti-recessionary programs of the offer off money of low interest rates and repayment of the banks' debt. In January 2017 the FED stopped the quantitative easing (QE) program and transferred to a policy of increasing discount rate. In 2018 the ECB also finished the QE (2010–2018) program of redemption of the state securities for the sum of €2.6 trillion. However, the steady growth of world economy has not been reached and has not been reached either with national, nor international programs. In 2019–2020, the IMF predicts decrease in growth rates down to 3.3% and the most important, delay of rates by 70% of national economies [1].

The current reasons of growth slowdown is the strengthening of tension in world trade by many countries with the financial conditions for business. The solution to these problems lies in the plane of a smooth transition to such monetary policy which will provide only unstable economic development of world economy in the range of 2–4.5%, the developed countries of 1–2.5% and the developing countries of 3–5%. On emerging markets and softer monetary policy financial conditions for the national capital and FDI, inflow can improve the state priming of economy. Outflow of FDI in 2015–2019 began to break balance on emerging markets which developed as a product of the global financial and economic environment and system.

Steady growth is caused by more general factors of uncertainty (a national debt up to 200% and the conflicts in world trade) and the start of solutions for civilization's problems. How to pass from steady growth to providing it with economic policy? The IMF sees three directions for such policy: (a) domestic economic, (b) cross-border policy and also (c) solidary actions for the solution of global problems.

(a) The domestic economic policy of countries has a uniform curve, no forms, methods, but *moment curve points* are approved by the most dynamic economies. We will carry the main object to their number carrying out structural reforms under the technological 4.0 Revolution and ensuring economic growth for world economy by 3.5–4%, developed economies by 2–3% and the developing economies by 4–5%; overcoming inequality inside countries and in between the countries.

(b) Cross-border policy of providing more equal conditions for the different countries. In the most general view, it is about norms improvement of financial regulation, increase in degree of transparency in questions of the state and corporate debts, fight against illegal financial flows of none observed economy. Among the mentioned problems, world trade is key (in 2018 its volume was $38.4 of trln that makes up 49% of World GDP with domination of China and the USA ($4.6 of trln and $4.2 of trln) respectively. Therefore, the trade war between them will reduce world commodity turnover by 0.2% that will lead to decrease in World GDP and cause the unbalance center in commodity and financial flows of global economy. By estimates of the IMF, growth of tariffs (this analysis covers tariffs, non-tariff measures and bilateral agreements about purchases) by 25 percentage points on all items in trade between the USA and China can lower annual GDP in volume down to 0.6% in the USA and to 1.5% in China [2].

Risk of public debt growth. There was a growth of cumulative state debt/GDP from 78% in 2007 to 118% in 2014 [3]. In 2016 the global debt made $164 trln (225%/World GDP) [4], which is higher than the national economic safety level.

Chinese economic slump. Delay of growth rates of real GDP of the world's second economy poses a serious threat to the steady growth of the global economy. Before the global crisis from 2002–2007 growth rates were 9–14%, during crisis it fell down to 9.4%, and since 2010 consistently decreased with the rate of 1% a year and were in 2018 6.6% with the forecast of the IMF for 2024 5.5% [5].

Managerial risks and regulation of the world financial and economic system. Conflicts between global and national finance increase. The global investor ignores national economic interests. Global problems (ecological, energy and food security of countries) are not solved, but might spark off trading wars and protectionism. The insufficient volume of investment to solve these global problems (at least $35 trln. about 50% of World GDP required) threatens food and energy security for developing countries and impedes growth for the developed ones. The system of global finance needs revision, updating and expansion of regulators in accordance with the international bank standards.

After the global crisis, the procedures of dedollarization and deglobalization intensified and raised the question of the leader in world economy. Will the **USA** maintain its leadership or will it be replaced by China, the EU, Japan or …? The USA, being one of the main architects of globalization, has benefited the most. The current US positions see Table 1.

Table 1. Comparative advantages of the USA vs China (if other is not specified), 2019*

	Macroeconomic indicators	**USA**	**China**
Markets	Forex USD/CHY, 12/06/2019	6.9340	
GDP	GDP, constant prices, $ trln	18.91	
	GDP, current prices, $ trln	19.390	12.238
	GNP per capita, $ trln	54.225.45	15.308.71
	Share of the sectors of economy in GNP, %, 2015 Services Industries Agriculture	 76.7 21.1 1.2	 43.1 46.8 10.1
Labor	Unemployment rate, %	3.60	3.67
	Wages per hour/per year, $,	23.3/41696.93	/ 11892.27
	Labor productivity, growth, %	3.40	NA
	Demographic indicators, 2015 The population share (at the age of 15 and older), %	20	17
Prices	GDP deflator index	111.33	656.41
	Inflation rate, %, YoY	1.80	2.70
Money	Central Bank interest rate decision, %	2.50	4.35
	Banks balance sheet, $ trln	17.22	0.466
	Loans to private sector, $ trln	2.3	0.3
Trade	Current Account, $ bln, Q1	134.88	58.60
	Imports, CIF, $ trln	2.576	1.721
	Gold reserves, tones	8133.50	1864.30
	Net capital flows, $ bln	-8.1	-5.86
Government	Government budget value/GDP, %	-3.80	-4.20
	Government spending, $ trln	3.21	3.19
Business	Corp. profit, $ trln	2.00	0.26
	Market cost of publicly traded companies, $ Trln	17.14	3.408
	Competitiveness rank	1	28

Consum	Private sector credit, $ trln	9.76	
Taxes	Corporate Tax rate, %	21	25
	Personal Income Tax Rate, %	37	45
	Sales Tax rate (VAT), %	0	16
	Social security rates for: Employees / Companies	7.65 /7.65	11 / 37

*Sources: [6]; [7]; [8].

In 2019 the US GDP size (GDP, current prices) was $19.390 trillion that on one hand, allows to provide high quality of life: GDP/per capita $54.225.56., with another; stable expenses of the Government of $2.180 trillion. Rates of economic growth were 3.20% that corresponds to the average value during 1948–2019. The economy isn't overheated, it has the smallest unemployment rate in 49 years, of 3.60%. The contribution of various sectors of economy to the production of GDP reflects its readiness to enter the world of 4.0 technologies. Manufacturing industry of the USA creates 11% of national GDP. At the same time the cost of its products grows due to complicated labor (2019 $2.2 trln), and the share in GDP drops. On the contrary, services (information, communications, financial, legal) as a portrait of new technological revolution, promptly grow. In 2019 they created the cost of $12.9 trillion with a contribution to GDP of the country of 67%. The structure of economy is modern, aimed at mastering the first high-tech. The increase in productivity of labor (without agriculture) in 1Q 2019 (YoY) was 3.40%, release of 3.9%. The rate of inflation in May 2019 was 1.8%, which drops in comparison with 2018, it is significantly less than average level of 3.26% in 1914–2019 that substantially is the result of the long-term strategy of FRS of cheap money. As result the AAA sovereign rating is in the first position on global competitiveness rank among 140 countries (2018).

Essential weaknesses of the economy in 2019 in the forms of payment (-134.88 bln USD) and trade (-50.79 bln USD) deficits, budget deficit (-207.77 bln USD), and the public debt ($22.026 trln) exceeding GDP (105.4%) are hedged by USD (as world currency, reserve, steady with small volatility), historical lack of defaults of the state and big reserves of gold (8133.50 tons). At the same time, there is a real threat to a country default to the beginning of financial (budgetary, fiscal) year – by October 1, 2019 or each next year (until being state debt and budget practice of arrangement with US Congress regarding amount of a debt).

China after global crisis passed to the strategy of two markets (domestic & foreign) that yielded result (see Table 2). In 2019 China is still the first nation in population, the extent of the international liquidity, export, trade balance and the second economy of the world on GDP (GDP constant prices). China is already not just "the factory" of world brands, the Chinese companies led by Huawei, have become competitors of world leaders of High-Tech more and more.

Growth rates of the economy of China in 2018 is twice higher and it was 6.40%. Substantially it was the result of policy of modernization, Deng Xiaoping, effect of globalization and FDI. Historical background of economic development of China in the 20th century caused the low level of the technological bases of the economy, finally, very low in 1960–2019 GDP per capita (PPP) of $1662.03. Growth of the important indicator of quality of life up to $7320.09 in 2019 shows the effect of market reforms, mixed economy and turn of economic policy towards domestic demand. In this regard we will note that in 2015–2019 the share of services which already makes 57.59% in GDP of the country grows. Unemployment rate of 3.67% (1Q2019) not high in comparison with an average value of 4.09% for 2002–2019. In the People's Republic of China in 1952–2018 average nominal salary / month was 1184.76 CHY. In May 2019 – 8293.32 CHY ($1196.04), growth was 7 times greater. Great progress for the modern history of the country, but in comparison with the leading economy of the world, lag of the nominal salary in annual terms is 2.9 times less. The rate of inflation in China in 2019 is not high which is 2.7%, in comparison with the average level of 5.16% in 1986–2019 decrease was by 1.9 times. This evidence of effective work of the People's Bank of China.

At the same time, points of weakness of economy are low GDP/per capita (58% of the average world level), the low salary, record budget deficit due to decline in income of the state, decrease in profit of the enterprises in 14 branches of economy of all forms of ownership, 28th place in the list of global competitiveness, a high rate on the companies of social taxes (37% vs 7.65% in the USA).

Anyway China is ahead of the US in export volumes ($2.14 trln., 1st place in the world export of securities at 11.7%), foreign reserves ($3.1 trln.) and total investments, with the positive balance of payments and state debt to GNP ratio 2.3 times less than the American (see Table 2).

Table 2. Comparative advantages of China vs the USA (if other is not specified), 2019*

	Macroeconomic indicators	**China**	**USA**
GDP	GDP growth rate, YoY, %	6.40	3.20
Labor	Population, mln	1.419 819.622	328.950
Prices	Core inflation rate, %, YoY	1.7	2.0
Money	Forex reserves, $ trln	3.1	0.127
Trade	Balance of trade, $ bln	41.66	-50.8
	FDI, $ bln	54.6	50.9
	Retail sales, YoY, %	7.2	3.1.
	Exports, FOB, $ trln	2.1385	2.0685
	External Debt, $ trln	19.7	19.8
	The current balance of payments, $ bln, including % of GDP	586 0.4	-134.4 (Q1) -2.4
	Total investments/GDP, %	54.2	12.4
Government	State debt, $ trln	NA	22.02
	State debt/GDP, %	47.6	105.4
	Government revenues, $ bln	250.33	232.06
	Government budget deficit, $ bln	-10.43	-207.77
	Foreign reserves, $ trln	3.1	0.127
Business	Industrial production, YoY, %	5.4	0.9
Consumer	Bank lending rate, %	4.35	5.5
	Personal saving, %	37.10	6.20

*Sources: [9]; [10]; [11].

Other US competitors include Japan with the $4.9 trln. GDP (6.48 % world GDP (PPP) and its recession lasting since the 90s and the EU zone, on a threshold of the second wave of the crisis due to the debts of Mediterranean countries. However, the slow recession of the European economy turned out to be more painful and difficult, than in the US as countries were attempting to shift to the new technological mode of production. Germany ($3.7 trln, 4.9% world GDP) and France ($2.8 trln., 3.7% world GDP) [7, 12] are burdened by the obligations to preserve the European Union and maintain the Euro and, thus, cannot become new world economic leaders yet.

We identify the following criteria of leadership: (1) Size of the economy (GDP), (2) Quality of life (*GDP/per capita*, *Quality of Life Index*, *Purchasing Power*, *Index Security, Index Health Care, Cost of Living, Real Estate Price per Income*, *Time in Traffic*, *Jam Pollution Index*, *Climate Index*), (3) Global competitiveness (*Productivity*, *global innovation index*), (4) Currency (*weight*, *SDR basket*, *share in global payment*, *volatility*).

Based on the size of the economy (GDP nominal) in 2016, 2020, 2030 and 2050 there are 4 countries among leaders – the USA, Japan, China and India [13]. Quality of life is traditionally estimated with GDP per capita with the same leaders of the USA, China, and Japan. If we include such indicators as *quality of life, purchasing capacity, safety, health services, life cost and ecology*, then it would be Denmark, Switzerland and Australia. Global competitiveness of the national economy depends on the competitiveness of businesses, quality of corporate government, production efficiency and management. Here the leaders are Switzerland, Singapore, and the USA [14]. The major indicator of business competitiveness is labor productivity calculated as GDP (PPP)/per hour. According to this indicator, the leaders are Norway, Luxembourg and the USA. The world economy in the XXI century will be based on technological innovation. The Global Innovation Index of 2015 shows that in *R&D (Research and Development)* the leading countries are South Korea, Israel, Finland, Sweden and Japan; *in the innovative production* – Switzerland, Ireland, Singapore, Germany, Austria; in the *quantity of High-Tech companies* – Unites States, China, Japan, South Korea, Canada; in *higher education* – South Korea, Russia, Finland, Israel, Ukraine; *scientific research* – Finland, Iceland, Denmark, Israel, Singapore [15].

National currency is a very sensitive indicator of stability and strength of national economy. The most significant indicators are the transaction currencies, international liquidity, reserves and the SDR basket. On October 1st, 2016 weights of the five currencies in the new SDR basket were: U.S. dollar with 41.73%, Euro with 30.93%, Chinese Renminbi with 10.92%, Japanese yen with 8.33% and Sterling Pound with 8.09%. Compared to the previous period the USD lost in weight from 44% to 41.73%. For the first time CHY was included in SDR basket and won third position ahead of Euro, JPY and GBP. Markets value currencies through SWIFT, by carrying out basic calculations on real and financial asset markets. The USD share amounts to 44.64%, Euro – 28.30%, GBP – 7.92% [16]. The major reserved currencies are the USD, Euro, JPY, GBP and CHF as they are less volatile and more stable according BIS REER [17].

4. Discussion

For our research we will be limited to some generalizations to the directions of scientific discussions. The Bretton Woods Institutes noting 75 years and being some of the architects of the global economy, allocate three main problems: economic growth, tension in world trade and the lack of confidence between national and global finance (National and international Institutes). The IMF in the official documents and researches, sees urgent therapy in own reformation [18] and world cooperation for extraction of advantages in cross-border flows of the capital and goods [19]. The World Bank offers innovations in rules of the WTO in the multilateral system of trade [20].

Other key institute of global finance is BIS. It looks for a better balance between monetary policy, structural reforms, fiscal policy and macro prudential measures [21]. One of the central problems in the world of academic agenda issustained economic growth which is considered through a prism of world, regional and national economies. What researches attract interest? Intercountry inequality as essential brake of World economy [23]; stability of all EU Member States as key to the economic growth of all Union [24]; use of opportunities of the global transport systems [25] and a flexible monetary policy in the conditions of high volatility of international commodity and foreign exchange markets [26] for country economic growth.

Problems of change of the technological bases of the economy of 4.0 technology are the cornerstone of the true and future aspects of macro and microeconomics. Generalization of effects of digital technologies, smart-contracts, chain networks deserves attention [27] and product decision-making information systems [28]. The science, the international institutes and the markets were in illusion that the global economy is capable not to allow global recession. Illusions took place. Therefore, the subject of crisis is relevant today. In this regard a certain interest represents researches about effects of a harvest on recession in the USA and China, relending of the private sector [29] and financial aid programs of the IMF during Asian crises [30].

5. Conclusion

A quick analysis shows that today there is no absolute leader in the world economy. Many countries possess comparative advantages (as it can be seen in the comparison between China and the USA), but only on some positions [31]. The age of the absolute domination of one super state is over. The structure of the global economy and finance will not be based on the domination of one country and a single currency. The international economic and financial organizations will play a major role as global institutes and regulators. We do not exclude the possibility of the establishment of the world government by the end of the XXI century. In the interim period we might expect an aggregated SDR with a basket formed by 15–20 currencies and appearance of local currencies on the wave of deglobalization and dedollarization [32].

Nevertheless, today the USA, EU, Japan, Great Britain, China, Russia, India perform a special role and responsibility. The world economy might receive a new impulse of growth if the USA overcomes financial imbalances caused by the three deficits: budget, balance of payments and state debt; and becomes «a world workshop» of new high technologies. Japan as the third world economy might repeat its "economic miracle" with the development of High-tech. China, BRICS and other countries of emerging markets with high balance of payments surpluses and extensive foreign reserves might become key sources of world economic growth too, if they re-orient production towards domestic demand and consumption [33]. The IMF and the World Bank group should be focused on maintaining global financial stability, searching and supporting new sources of growth of the world economy and solving civilization's problems of mankind.

References

1. K. Laggard, A delicate moment for the global economy: Three priority areas for action. International monetary fund. Available at: https://www.imf.org/ru/News/Articles/2019/03/29/sp040219-a-delicate-moment-for-the-global-economy (accessed: 18.04.2019).
2. World Economic Outlook, 2019.

3. J. Lipssky, Fiscal policy challenges in the post-crisis world. International monetary fund. Available at: https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp032110 (accessed: 18.04.2019).
4. IMF Fiscal Monitor: Capitalizing on good times (April 2018). Available at: https://www.imf.org/ru/Publications/FM/Issues/2018/04/06/fiscal-monitor-april-2018 (accessed: 12.06.2019).
5. IMF DataMapper. WEO. Real GDP growth. Annual percent change. China People Republic. Available at: https://www.imf.org/external/datamapper/NGDP_RPCH @WEO/USA%20accessed%2014/05/2019/CHN (accessed: 12.06.2019).
6. Trading economics, (2019).
7. World Bank data. Available at: www.www.worldbank.org/data?qterm=country (accessed: 14.03.2015).
8. Intertrade statistics. Available at: www.wto.org/eng/statis_e/is2014_e/its14_ worldtrade_dev-e.htm#top (accessed: 14.03.2015).
9. Trading economics. China, USA. Available at: https://tradingeconomics.com/china/calendar; https://tradingeconomics.com/united-states/calendar. (accessed 12.06.2019).
10. Worldometers. Available at: https://www.worldometers.info/world-population/china-population/ (accessed:14.06.2019).
11. Population USA. Available at: http://www.usapopulation.org (accessed 14.06.2019).
12. World Bank. Available at: www.worldbank.org. (accessed: 18.03.2012).
13. International Monetary Fund. World Economic Outlook (October-2016). Centre for Economics and Business Research (Cebr).
14. World Economic Forum, Report (2016).
15. Coy P. The Bloomberg innovation index. Available at: https://www.bloomberg.com/graphics/2015-innovative-countries/ (accessed: 12.06.2019).
16. Swift. Avaliable at: www.swift.com
17. BIS. Real effective exchange rates, Broad (60 economies) indices. Available at: https://stats.bis.org/statx/srs/table/i2?m=B (accessed 19.03.2019).
18. A. Tooze, In the postcrisis world, the Fund must move beyond its role as lender of last resort. *Finance & Development* **56** (2019).
19. R. Rajan, Global cooperation is needed to reap the benefits and avoid the pitfalls of cross-border capital flows. *Finance & Development* **56** (2019)
20. P.K. Goldberg, Policy can play a role in shaping the future of the ailing multilateral trade system. *Finance & Development* 56 (2019)
21. BIS. Annual economic report 2019. Available at: https://www.bis.org/publ/arpdf/ar2019e.htm. (accessed 06.07.2019).
22. M. Fuller, P. Dwivedi, Assessing Changes in Inequality for Millennium Development Goals among Countries: Lessons for the Sustainable Development Goals. *Social Sciences* **8** (2019)
23. G.H. Popescu, C. Alpopi, M. Comanescu, C.F. Ciurlau, Through a glass darkly: The political foundations of sustainable European monetary union, *Economics, Management and Financial Markets* **12,** 70-75 (2017)

24. D.C. Esty, Toward a sustainable global economy: an initiative for G20 leadership. *Addleton Academic Publishers* **5** (2017)
25. N. Zhuravleva, Managerial challenges in Russian railways privatization and restructuring in the context of integration into global transport systems. *Ekonomicko-manazerske spectrum* **11** (2017)
26. M. Bikar, M. Sedliacikova, The change of the trajectory towards growing economy: The evidence from Russia. *Ekonomicko-manazerske spectrum* **12** (2018)
27. C. Tuffnell, P. Kral, P. Durana, T. Krulicky, Industry 4.0-based manufacturing systems: Smart production, sustainable supply chain networks, and real-time process monitoring, *Journal of Self-Governance and Management Economics* **7**, 7-12 (2019)
28. C. Lafferty, Sustainable Industry 4.0: Product decision-making information systems, data-driven innovation, and smart industrial value creation, *Journal of Self-Governance and Management Economics* **7**, 19-24 (2019)
29. W. White, How to put the global economy on a sustainable growth path? *Observer* **279** (2010)
30. H. Y. Shin, The IMF's financial programming, financialization, and stagnant corporate investment in Korea after the Asian financial crisis. Economics. *Management and Financial Markets* **12** (2017)
31. B. Chapman, U.S.–China economic and security review commission: Emerging factor in Western Pacific strategic policy analysis, *Geopolitics, History, and International Relations* **10**, 7–29 (2018)
32. W. Kisiała, K. Suszyńska, Economic growth and disparities: an empirical analysis for the Central and Eastern European countries, *Equilibrium. Quarterly Journal of Economics and Economic Policy* **12**, 613–631 (2017)
33. M. Skare, M. Porada-Rochoń, Financial and economic development link in transitional economies: A spectral Granger causality analysis 1991–2017, *Oeconomia Copernicana* **10**, 7–35 2019