
Convergence and divergence processes of countries economic development under globalization

Iryna Shemakhina

Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

To cite this article:

Shemakhina Iryna. Convergence and divergence processes of countries economic development under globalization. International Science Journal of Management, Economics & Finance. Vol. 2, No. 3, 2023, pp. 13-20. doi: 10.46299/j.isjmef.20230203.02.

Received: 03 28, 2023; **Accepted:** 04 06, 2023; **Published:** 06 01, 2023

Abstract: The article analyses the degree of national economies interconnection and interdependence on the basis of calculation of the dynamics of β -deviation and δ -deviation indicators of the group of developed countries and the group of developing countries for the period 1995-2021. It is proved that the processes of divergence between countries, the asymmetry of their development and the growth of global disproportions, as well as the processes of convergence, manifested in the formation of individual clusters, are taking place simultaneously, which requires additional in-depth studies at the country level.

Keywords: globalization, deglobalization, convergence, divergence, global imbalances, economic development, integration, COVID-19, invasion to Ukraine.

1. Introduction

The current global crisis has prompted a rethinking of the idea of globalization and the global economy. Previously, attention was focused on the positive effects of globalization, which contributes to strengthening trade ties, increasing foreign direct investment, the convergence of the levels of socio-economic development of countries. In modern conditions, globalization processes have acquired a qualitatively new character and are accompanied by a divergence of development trajectories of the economies of different countries.

2. Object and subject of research

The deepening of global imbalances and the volatility of economic development of countries has led to the relevance of the question of whether the convergence, rather than differences in their economic development, is really occurring - convergence. An important consequence of the COVID-19 pandemic was the transition of the world to a new transformational stage with a reorientation towards deglobalization, which actualizes the problem of convergent-divergent countries development.

3. Literature analysis

The problems of uneven development of national economies have always attracted the attention of scientists and scholars. P. Solow analysed the causes of absolute and conditional convergence of the two economies on the basis of the dynamics of the labour force capitalization level, as the main factor in the convergence of poor and rich countries [13].

Proponents of the neoliberal model of globalization, such as J. Stigler and F. Fukuyama, noted that at the present stage of globalization countries have new opportunities for development associated with the cross-border distribution of information, knowledge, new technologies, which allows more efficient use of resources [6; 14]. Their views have undergone considerable criticism from representatives of unorthodox institutionalism. However, E. Reinert notes that countries diverge along different trajectories in economic development, which requires effective institutional-organizational ordering, since globalization is asymmetrical in nature [11].

P. Barro and X. Sala-i-Martin pointed out that at the turn of the XX-XXI centuries the diffusion of national economies took place [2]. W. Baumol, R. Nelson and I. Wolf concluded that some countries form a kind of dynamic convergence clubs, based on common ideas on the foreign policy implementation [3]. D. Quah and L. Pritchett obviated the existence of simultaneously convergent and divergent processes of countries economic development [9; 10].

Skripnik S., Protsevyat O., Voronova O., Yakusheva O., Onishchenko V., Abodunrin O., Oloe G., Adesola D. and others analyzed the problems of different trajectories of economic development of different countries, the dependence of countries on the dynamics of world processes, the need to restructure the global space in the context of the growing uneven development of countries, are also devoted to the study of the theory of convergence-divergence of global development [1; 8; 12; 16].

Modern scientific literature devotes considerable attention to the study of the problems of the contradictory nature of globalization, its positive and negative consequences for various countries, as well as such negative trends of globalization as convergence and divergence in the national economies development. However, despite a considerable amount of fundamental theoretical works in this field, the problems of quantitative determination of the countries integration into separate groups degree, integral assessment of the processes of convergence and divergence of developed and developing countries are still insufficiently highlighted.

4. Target of research

Target of research is to prove the parallel unfolding of integration and disintegration processes, to assess the consequences of globalization processes for the countries in the conditions of deepening of modern global crisis, caused by COVID-19 pandemic and Russian invasion to Ukraine.

5. Research methods

The quantitative assessment was based on the calculation of the coefficients of β -deviation and δ -deviation of the two groups of countries – the group of developed countries and the group of developing countries for the period 1995-2021.

Statistical data from the UNCTAD provided the information base for the study.

6. Research results

At the present stage, the concept of convergent-divergent development has been rethought by scholars in the context of the importance of the divergence of the trajectories of the economies of different countries and the growing global imbalances. And in the context of the worsening crisis caused by the coronavirus pandemic and Russia's invasion of Ukraine, this problem has acquired a qualitatively new character.

In particular, the Norwegian economist, representative of the institutional direction E. Reinert emphasizes in his research that the economic development of the world's countries diverges along different trajectories, which requires effective institutional and organizational ordering, since globalization is asymmetrical by nature: some countries specialize in activities with increasing returns, and these are mainly developed countries that fully use the positive effects of globalization,

while other countries specialize in activities with decreasing returns, that is, in fact, poverty. These countries continue to become poorer and experience the asymmetric impact of globalization.

The scientist argues that the ideas of the founders of economic theory, in particular A. Smith and D. Ricardo, are not effective in the modern world. In particular, the concepts of relative advantage and the free market, according to which each entity specializes in what it does best and exchanges the results of its work with others, resulting in equilibrium, are false. Emphasizing that these very concepts of the free market and specialization are the basis for the recommendations of current IMF and WB advisors to developing countries, D. Reinert argues that a country with an advantage in agriculture is better off with an inefficient domestic industry than with none. Moreover, it should first be given the opportunity to develop (through government intervention), since it is industry that creates wealth [11, p. 80-85].

Studying the experience of Mongolia, E. Reinert gives an interesting example: on the advice of WB experts, 90% of the industry in this country was destroyed in just 2-3 years, bread production decreased by 71%, books and newspapers - by 79%, only alcohol production and bird feather collection grew. Subsequently, J. Sachs, one of the authors of shock therapy, an adviser to the Ukrainian and Russian governments, and since 2000 a special adviser to the UN Secretary-General on anti-corruption, suggested that the Mongols specialize in the production of computer programs. However, he did not take into account the fact that only 4% of households in the country have access to electricity outside the capital Ulaanbaatar [11, p. 211-220].

The Spanish economist J. Sala-i-Martin, together with the American economist R. Barro, developed a model of technology diffusion, according to which underdeveloped countries borrow technologies from developed countries on the basis of convergence between them. The scientists proved that conditional convergence is possible only if the structural parameters of the economies are the same and if developing countries have real opportunities to imitate the technology of the leading country [2].

In this regard, it should be noted that global economic development and economic growth can lead to the prosperity of individual national economies based on their convergence. That is, globalization results in the process of "diffusion" of national economies. This process of interdependence of growth of national economies is called "new convergence" and is manifested in a structural shift, the meaning of which is that since about the 90s of the twentieth century, the growth rate of per capita income in developing countries has been increasing and significantly exceeding the growth rate of the corresponding indicator in developed countries, which indicates that there is a convergence of developed countries and emerging and developing countries [7, p. 16].

Ukrainian economist, academician of the National Academy of Sciences of Ukraine, O. Bilorus also made a significant contribution to the development of the theory of globalization, in particular, the processes of neo-convergence, which means post-industrial global convergence of countries on the basis of mutual development and mutual influence, rather than unilateral attempts by some countries to catch up with others, i.e., vanguard countries. Among the foundations of the new convergence, the scientist identifies the following: the homogeneity of the markets of the countries of the world, their integration into the global environment on the basis of healthy competition, free movement of human resources and capital, awareness of universal values, the rule of law, democracy, the need to protect the environment, improving social standards of living, etc [4, p. 47].

To confirm that convergence and divergence occur simultaneously, we analysed the GDP growth rates of two groups of countries, developed and developing countries, for the period 1995-2021 (last available data in UNCTAD reports). The β -divergence indicator was calculated as the difference between the GDP growth rate of developed countries and the GDP growth rate of developing countries. According to the analysed statistics, the GDP of the group of developing countries grew faster than that of developed ones, which confirms the positive value of the β -deviation coefficient and indicates the existence of a positive alignment trend of the two groups of countries development levels [15].

Table 1. Dynamics of the β -deviation indicator of the group of developed countries and the group of developing countries for the period 1995-2021.

Year	GDP growth, %		β -deviation, %
	Developed countries group	Developing countries group	
1995	4,60	2,61	2,00
1996	6,17	2,79	3,38
1997	5,57	3,41	2,16
1998	2,95	2,77	0,18
1999	3,22	3,58	-0,35
2000	5,43	4,07	1,36
2001	3,16	1,68	1,48
2002	4,14	1,62	2,52
2003	5,82	2,15	3,67
2004	7,92	3,28	4,63
2005	7,34	2,82	4,52
2006	8,10	3,10	5,00
2007	8,56	2,73	5,84
2008	5,72	0,49	5,23
2009	3,50	-3,49	6,99
2010	7,99	2,83	5,16
2011	6,51	1,77	4,74
2012	5,48	1,26	4,22
2013	5,40	1,39	4,01
2014	4,94	1,91	3,03
2015	4,50	2,21	2,29
2016	4,26	1,73	2,53
2017	4,80	2,42	2,38
2018	4,55	2,32	2,23
2019	3,52	1,82	1,70
2020	-1,75	-4,43	2,68
2021	6,69	4,96	1,74

Source: United Nations Conference on Trade and Development (UNCTAD). Data Centre. URL: <https://unctadstat.unctad.org>

It is also important to note that in 2020, the percentage change in GDP became negative in both groups of countries (-1.75% in developed ones and -4.44% in less developed ones). Moreover, in 2009 it was negative in less developed countries (-3.49%), while developed countries GDP was increasing.

The β -deviation indicator reached its maximum value in 2009 (6.99) and then sharply decreased, but slightly increased in 2020 (2.68). It indicates that global shocks did not contribute to the convergence of economies with different development levels in the context of their β -convergence (Figure 1) [15].

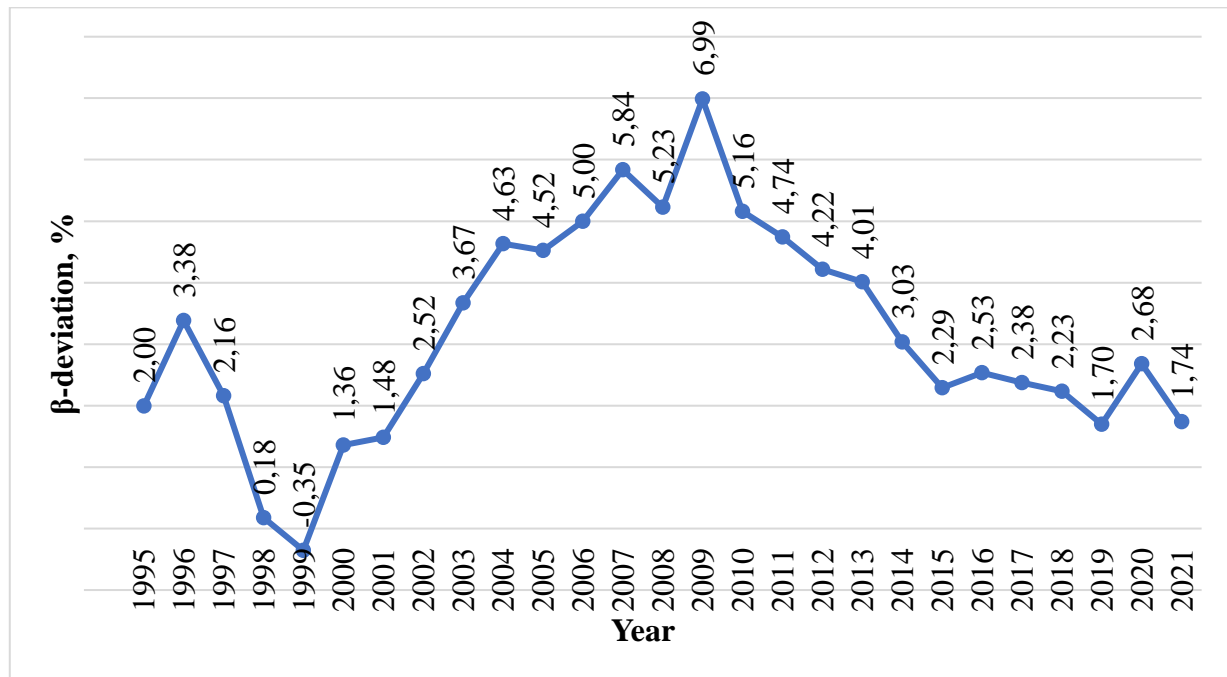


Figure 1. Dynamics of β -gap value between the group of developed countries and the group of developing countries, %, 1995-2021.

Source: United Nations Conference on Trade and Development (UNCTAD). Data Centre. URL: <https://unctadstat.unctad.org>

We also calculated the value of δ -deviation as the difference between the GDP per capita of the group of developed countries and the GDP per capita of the group of developing countries. According to the results of the calculations in Table 2, the GDP per capita in both groups of countries generally tended to increase over the period under consideration, as the δ -deviation value. The constant growth of the δ -deviation indicates the divergence of national economies and the growing gap between developing and developed countries, as well as the increasing differentiation of average GDP between countries.

Table 2. Dynamics of the δ -deviation indicator of the group of developed countries and the group of developing countries for the period 1995-2021.

Year	GDP per capita, \$		δ -deviation, \$
	Developed countries group	Developing countries group	
1995	1 246,44	20 894,55	19 648,12
1996	1 338,04	20 932,87	19 594,84
1997	1 394,98	20 433,35	19 038,38
1998	1 326,30	20 378,35	19 052,05
1999	1 308,74	21 279,79	19 971,05
2000	1 391,11	21 570,19	20 179,08
2001	1 360,68	21 390,66	20 029,98
2002	1 363,98	22 273,67	20 909,69
2003	1 480,53	25 017,18	23 536,65
2004	1 707,48	27 795,04	26 087,56
2005	1 990,69	29 304,25	27 313,56

Continued table 2

2006	2 300,69	30 891,44	28 590,75
2007	2 744,12	33 893,76	31 149,64
2008	3 219,63	35 948,25	32 728,62
2009	3 141,04	33 382,16	30 241,11
2010	3 742,84	34 885,12	31 142,29
2011	4 340,25	37 608,97	33 268,72
2012	4 567,05	37 384,03	32 816,98
2013	4 776,85	37 656,77	32 879,91
2014	4 907,34	38 099,97	33 192,63
2015	4 687,32	35 363,23	30 675,91
2016	4 639,01	36 116,64	31 477,63
2017	4 985,75	37 779,59	32 793,84
2018	5 260,48	39 929,40	34 668,92
2019	5 319,74	40 257,85	34 938,11
2020	5 097,97	39 145,48	34 047,51
2021	5 859,93	43 203,48	37 343,55

Source: United Nations Conference on Trade and Development (UNCTAD). Data Centre. URL: <https://unctadstat.unctad.org>

It should be noted that during the global financial and economic crisis of 2008-2009 and the COVID-19 pandemic there was a decrease in the δ -deviation, indicating that global shocks can reduce the gap between developing countries and developed ones, as well as reduce the level of differentiation of average GDP between countries, contributing to δ -convergence (Figure 2) [15].

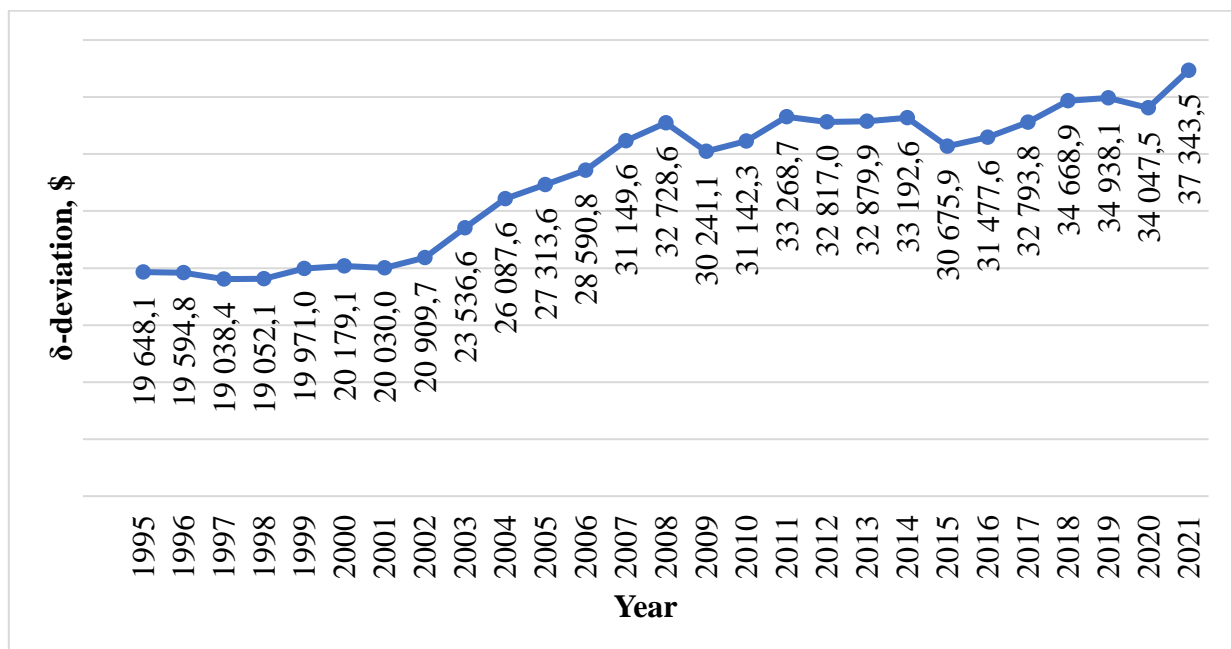


Figure 2. Dynamics of δ -gap value between the group of developed countries and the group of developing countries, \$, 1995-2021.

Source: United Nations Conference on Trade and Development (UNCTAD). Data Centre. URL: <https://unctadstat.unctad.org>

7. Prospects for further research development

Thus, on the one hand, the high growth rates of the relative majority of less developed countries in comparison with developed countries confirm the hypothesis of β -convergence and contribute to the transformation of the world economy into a single structural and functional system based on the strengthening of convergent processes. On the other hand, there is an increase in countries differentiation by per capita income, which confirms the hypothesis of δ -convergence and indicates the existence of divergent processes, and also testifies to the fact that in crisis periods convergent processes between countries increase and divergent ones weaken.

8. Conclusions

The modern stage of development of globalization processes is characterized by simultaneous convergent and divergent development of national economies. On the one hand, globalization is manifested in the form of intensification of trade relations, growth of direct foreign investments, and common for all countries institutional-organizational ordering of the global economy. On the other hand, the implementation of the neoliberal model of globalization in the absence of effective institutional-organizational ordering of world economic processes deepens the gap between different groups of countries, increasing the divergence of national economies, preserving the stratification of the global space and the marginalization of globalization outsiders. This is evidenced by the growing differentiation of developing countries and developed ones according to the analysis of the dynamics of the calculated coefficients of β - and δ -convergence. In these circumstances, it becomes important to ensure effective institutional and organizational ordering of the global economy, aimed at creating effective national and international institutions capable of guiding modern global processes so as to reconcile the interests of different groups of countries to ensure their sustainable economic development, and to overcome the current global crisis.

References:

- 1) Abodunrin O., Oloye G., Adesola D. (2020). Coronavirus pandemic and its implication on global economy. *International Journal of Arts, Languages and Business Studies*, vol.4, pp. 13-23.
- 2) Barro R.J., Sala-i-Martin X. (1991). Convergence across States and Regions. *Brookings Papers on Economic Activity*, vol. 22(1), pp. 107-182.
- 3) Baumol W., Nelson R., Wolff E. (1994). *Convergence of Productivity: Cross-National Studies and Historical Evidence*. New-York: Oxford University Press, pp. 20-61.
- 4) Білорус О. (2015). Глобальна неоконвергенція транзитивних, трансформаційних і авангардних соціально-економічних систем. *Економічна теорія*. 2015. №3. С. 56-64.
- 5) Diversity, Equity and Inclusion 4.0. (2020). World Economic Forum. A toolkit for leaders to accelerate social progress in the future of work. URL: http://www3.weforum.org/docs/WEF_NES_DEI4.0_Toolkit_2020.pdf
- 6) Фукуяма Ф. (2015). *Конец истории и последний человек*. М.: АСТ, 576 с.
- 7) Гражевська Н.І., Шемахіна І.В. (2019). Конвергентно-дивергентний розвиток національних економік в умовах фінансiалiзацiї. *Бiзнес Інформ*. Вип. №5. Харків. С. 14–19.
- 8) Онищенко В. (2020). Генезис світового економічного порядку. *Зовнішня торгівля: економіка, фінанси, право*. No. 2. С. 38-55.
- 9) Pritchett L. (2015). Can Rich Countries be Reliable Partners for National Development. *Journal of International Relations and Sustainable Development*, vol. 2, 11 p.
- 10) Quah D. (2011). The global economy's shifting centre of gravity. *Global Policy*, vol. 2, no. 1, pp. 3-9.
- 11) Reinert E. (2008). *How Rich Countries Got Rich... and Why Poor Countries Stay Poor*. Anthem Press India and Third World Network. 398 p.

- 12) Скрипник С., Процевят О., Воронова О. (2022). Особливості регулювання зовнішньоекономічної діяльності в умовах воєнного стану. *Економіка та суспільство*, вип. 38.
- 13) Solow R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, vol. 70, no. 1, pp. 65-94.
- 14) Stigler G.J. (1971). The Theory of economic regulation. *Bell Journal of Economics and Management Science*, no. 2, pp. 3-18.
- 15) United Nations Conference on Trade and Development (UNCTAD). Data Centre. URL: <https://unctadstat.unctad.org> (Accessed 12.04.2023).
- 16) Якушева О. (2022). Законодавчі ініціативи у сфері конвергенції регіонів: виклики сучасності. *Економіка і організація управління*. № 2 (46), 2022. С. 148-159.