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STATISTICAL EVALUATION OF THE MAJOR TRENDS OF GLOBALIZATION

Abstract: On the basis of the research the following important trends of contemporary globalization deployment process can be determined: at the forefront of the growth of globalization, countries are economic factors, the impact of external factors is growing in the dynamics compared to the domestic factors; the role of political factors is significantly reduced, in some groups of countries (first, second, fourth) completely dissipating; characteristic of the last 15 years is a gradual levelling of the role of socio-cultural factors in the development of globalization processes.

Keywords: trends, contemporary globalization, deployment process.

1. Introduction

The up-to-day global economy is a complex combination of multilevel business systems and fits in with systems markets. Nowadays, the question of globalization is under fierce discussion of national and foreign scholars. The economic aspects of the problems mentioned above are found in research of E. Azroyanets, V. Bazilevich, O. Belorus, R. Buayye, V. Budkin, J. Bhagwati, V. Wadi, A. Galchinsky, M. Delyahin, A. Eljanov, V. Foreigner, G. Pads, E. Kochetov, D. Lukyanenko, V. Novitsky, Y. Pakhomov, A.N. Plotnikov, V. Sidenko, G. Soros, J. Stiglitz, J. Thompson, L. Turou, A. Filippenko, T. Friedman, P. Hirst, D. Chystilin, M. Cheshkova, Y. Shishkov and others.

The global economy is defined by integral system attribute, the evolution of which can be explained basing on the synergetic paradigm. The hypothesis is that speeding-up of the current globalization process revealed three major factors. First, there is information-technological factor which had been generated by scientific-technical revolution. This revolution is creating opportunities for business entities relations in real time global scale. Second there is financial and economic factor, which has been set up by expansion of international capital. In its turn this factor is step up the goods exchange, exchange of services and information between national social and economic structures. Third factor is socialistic. This factor is related to

post-industrial tendencies of the infancy of man-sized economic systems. These systems are focused on the all-around development and disclosure of the specific personality potential [1, p. 55].

2. Background

In support of suggested hypothesis the process of globalization development during the years 1970-2005 has been analyzed. This research is based on dynamics of globalization index for 123 countries in the world, estimated by the procedure of Swiss Federal Institute of Technology, KOF. For multi-way grouping the sample of 40 countries was taken. The attempt to make their clustering according to the level of globalization during the years 1970-2005 did not provide the expected results. This was caused by two reasons. First was the heterogeneity of the dynamics of the process in different countries. And second was lack of necessary data, because the former Soviet Union began calculating the index of globalization only in 1991.

The above dynamic heterogeneity required implementation of the preliminary periodization of globalization. Problems of periodization dynamics using cluster analysis method were reviewed in [2-4]. As a result of periodization for further grouping of countries according to the level of globalization a dendrogram was obtained (Figure 1) which clearly shows two periods: 1970-1990 and 1991-2005. Firstly, it confirmed the thesis of heterogeneity of the dynamics of globalization over

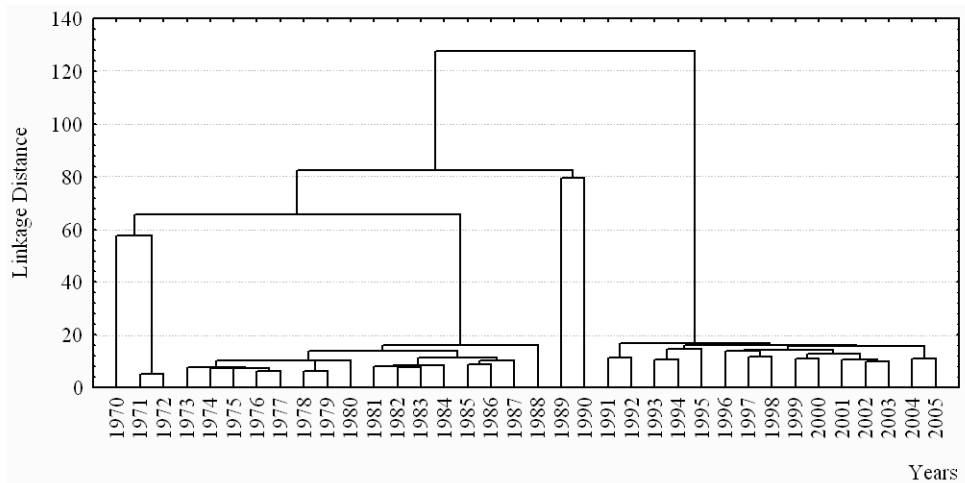


Figure 1. Tree Diagram for the periods of globalization in 1970-2005. Single Linkage. Euclidean distances

Source: constructed according to the data from 2008 KOF Index of Globalization, <http://www.kof.ethz.ch/globalization>.

36 years; secondly, allowed concluding about the existence of differences in the patterns of the index of globalization within the two periods. Furthermore, within the first period three sub-periods were distinguished. Therefore the final periodization can be identified as follows:

- 1) from 1970 to 1972 – the initial period of globalization,
- 2) from 1973 to 1988 – the development of globalization processes,
- 3) from 1989 to 1990 – the globalization transition,
- 4) from 1991 to 2005 – the intensification of globalization processes.

As a result of clusterization three clusters clearly showed up. Nevertheless, it revealed that the second cluster, which got the largest number of countries, can be divided further into two (Figure 2).

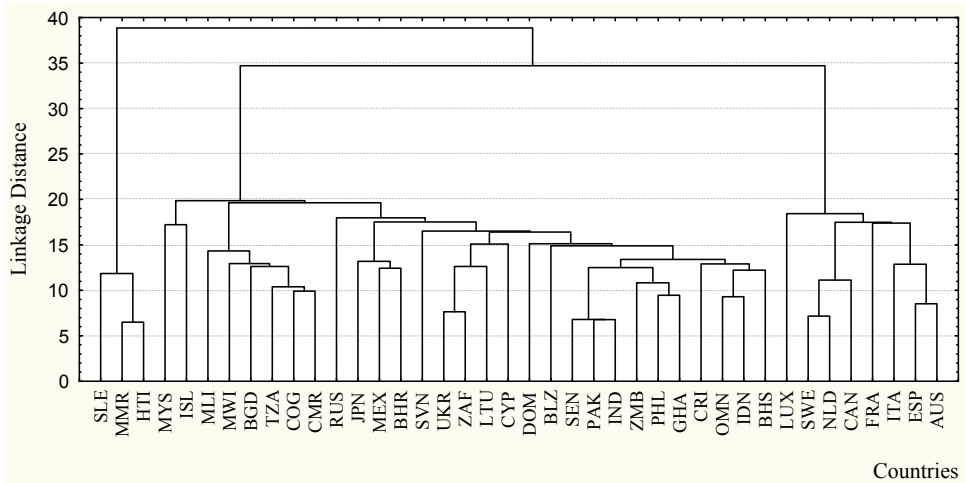


Figure 2. Tree Diagram for 40 countries for the period 1991-2005. Single Linkage. Euclidean distances
 Source: constructed according to the data from 2008 KOF Index of Globalization, <http://www.kof.ethz.ch/globalization>.

Therefore, four groups of countries were formed according to the level and dynamics of globalization. Application of *k*-means method allows to adjust the results of the previous grouping which was carried out by cluster analysis methods. Thus, after the application of two methods which are complementary to each other, it was possible to build the final grouping of countries with the use of the index of globalization (Table 1):

- 1) countries with very low index of globalization,
- 2) countries with low index of globalization,
- 3) countries with intermediate index of globalization,
- 4) countries with level index of globalization higher than average,
- 5) countries with the highest level of the index of globalization.

Table 1. Grouping countries in terms of globalization in the years 1991-2005

Group	Average index	Number of countries	List of countries
Very low level of globalization	30.5	3	Haiti (HTI), Myanmar (MMR), Sierra Leone (SLE)
Low level of globalization	34.8	6	Cameroon (CMR), Congo (COG), Bangladesh (BGD), Malawi (MWI), Mali (MLI), Tanzania (TZA)
The average level of globalization	45.5	11	Belize (BLZ), Bahamas (BHS), Dominican Republic (DOM), Ghana (GHA), India (IND), Indonesia (IDN), Oman (OMN), Pakistan (PAK), Philippines (PHL), Senegal (SEN), Zambia (ZMB)
Higher than average level of globalization	56.8	12	Malaysia (MYS), Iceland (ISL), Bahrain (BHR), Costa Rica (CRI), Cyprus (CYP), Japan (JPN), Lithuania (LTU), Mexico (MEX), Russia (RUS), Slovenia (SVN), South Africa (ZAF), Ukraine (UKR)
The highest level of globalization	81.2	8	Australia (AUS), Canada (CAN), France (FRA), Italy (ITA), Luxembourg (LUX), Netherlands (NLD), Spain (ESP), Sweden (SWE)

Source: constructed according to the data from 2008 KOF Index of Globalization, <http://www.kof.ethz.ch/globalization>.

Implementation of the periodization of the dynamics of the world globalization process allowed to select relevant periods that characterize the peculiarities of the development trends of globalization in the world. The presence of the same type periods of globalization processes suggests that the level of socio-economic development and peculiarities of politics in the country are reflected in the results of estimation of their level of globalization.

As the result of cluster analysis of the sample of 40 countries five groups of countries in terms of globalization were selected, which are homogeneous clusters. This provided an opportunity to make a detailed simulation of trends in the deployment of globalization processes in each separate group of countries. Correlation and regression analysis enabled the construction of models that match patterns to achieve a certain level of globalization in each group of countries, depending on the individual sub-indices and given two protracted periods of this process. It is possible to reach the following conclusions.

1. During 1970-2005 the index of globalization in the countries with very low level of the integration process and high dynamics of this process increased from 15.66 to 30.67, which corresponds to average annual growth by 1.9%. Most essential for these countries was the impact of political factors: the growth of this sub-index at 1% leads to increased globalization by 0.9%. The second most important factor was economic (international trade). This factor caused an increase in the index of globalization by 0.34%. However, during the 1991-2005 period the first place went to economic factors – international trade and hidden import barriers. The increase in

indices of international trade and hidden import barriers by 1% leads to increasing globalization by 0.6% and 0.49%, respectively.

2. For the second group (the countries with low level of globalization and relatively high dynamics of globalization) during the years 1976-2005 the globalization index increased by 80%, which corresponds to 1.64% average annual growth. Most essential for these countries was the impact of information and technological factor, which led to the growth of the index of globalization by 0.34%. Political factor ranked second for the influence on the formation of the index of globalization. However, this effect was much smaller: sub-indices growth of political globalization by 1% leads to increase in the level of globalization by 0.36%. In 1991-2005 in the first place remained the information and technological factor, its influence grew. In second place came the economic factor, namely: foreign direct investment. The role of political factors was neutralized and became negative, so the sub-index growth of political globalization led to a reduction of the level of globalization of the country.

3. For the third group (the countries with an average level of globalization) inherent growth index of globalization was the highest: for 1970-2005 it raised more than twice, which corresponds to average annual growth by 2%. For these countries the first place goes to informational and technology factor. Factor leads to raises of globalization index by 0.4%. Political factor occupies only third place: sub-index growth of political globalization by 1% leads to increase in the level of globalization by 0.23%. In the second and fourth places are economic factors: foreign direct investment, and taxes on international trade. In 1991-2005 the determinant factors for this group of countries were informational and technology factor, and economic (taxes on international trade and foreign direct investment) factor. Political factor ranked only fourth and to a lesser extent was shaped by the index of globalization: the globalization of political sub-index growth by 1% led to an increase in the level of globalization by 0.1%.

4. The fourth group of countries (which includes Ukraine) has a level higher than the global average and the average dynamics of the deployment process. During 1970-2005 the index of globalization for the group increased by 76%, which corresponds to 1.58% average annual growth. Most essential for these countries is the impact of economic factors – it raises the index of globalization to 0.26%. The role of political factor is also significant: it ranks second to affect the formation of the index of globalization, ensuring growth at last by 0.256%. In third place are the socio-cultural factors. At the same time the period 1991-2005 was characterized by very different trend: significant were only economic factors (investment flows and their limitations), whose role has increased 3 and 1.6 times, respectively. The influence of political factors was insignificant.

5. The fifth group (with high and very high level of globalization) consists of the most economically developed countries. During 1970-2005 period on the first and second places for these countries were economic factors. In third place were the socio-cultural factors. The role of political factors is minor, but essential. This factor

occupies the last place as per influence on the formation of the index of globalization: the political globalization sub-index growth of 1% led to an increase in the level of globalization by 0.076%. These trends have changed little over the years 1991-2005: in the first place – economic factors (direct and portfolio investments), whose role has increased 1.5 times. In the second place is information and technological factor. Political factor occupies the last place as per influence: it increased by 1%, which led to an increase in the level of globalization only by 0.13%. In the last 15 years the influence of socio-cultural factor was unprincipled, compared with previous model where it was essential.

Construction of the correlation matrix of beta coefficients obtained with the model calculated over time, gives reason to assert that the patterns of globalization trends during 1991-2005 were significantly different from the general patterns of globalization trends. Lack of reliable connection between the coefficient of elasticity confirms this difference. This conclusion led to the presence of characteristic features for the period of intensifying globalization processes. It is about the growing role of information technology and economic (financial and economic) factors that were significant for almost all groups of countries and exacerbated with rising degree of economic development. The role of political factors, however, gradually decreased. A characteristic feature for the past 15 years is an insignificant role of socio-cultural factors in the development of globalization processes. This indicates a slowdown in inter-civilization convergence within the current model of globalization.

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OCENA STATYSTYCZNA PODSTAWOWYCH TRENDÓW DOTYCZĄCYCH GLOBALIZACJI

Streszczenie: Na podstawie przeprowadzonych badań można określić istotne tendencje współczesnej globalizacji. Rola czynników zewnętrznych we wzroście globalizacji wyraźnie przekracza wpływ krajowych czynników ekonomicznych. Rola czynników politycznych jest znacznie mniejsza, w przypadku niektórych grup krajów – marginesowa. Charakterystyczne dla ostatnich 15 lat jest stopniowe zmniejszanie się roli czynników społeczno-kulturowych w rozwoju procesów globalizacji.