

Economic and Educational Characteristics of the First Cluster of the Developing countries

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Abstract. We present briefly the project "Clusters of Capitalism. Typology and Dynamics of Capitalist Economies", continued in 2014 under the title "Identification and Comparative Analysis of the Types of State Capitalism and the Types of Liberal Capitalism (Based on Cluster Analysis)." It is a study in which for the first time the typology of the capitalist way of production has been done inductively, not deductively, and with the application of modern statistical methods. We examine the economic and educational characteristics of one of the twelve revealed distinctive types of capitalism in the twentieth century, namely the First cluster of the developing countries.

Keywords: Cluster analysis, types of capitalism, liberal capitalism, state capitalism, developing countries

I. CLUSTER ANALYSIS OF THE TYPES OF CAPITALISM

Most often, in order to distinguish the types of capitalism the dichotomy, **liberal capitalism – state capitalism** is applied. Societies of liberal capitalism are those societies that have a democratic political system, a limited state sector and minimized state intervention in the economic processes. Societies of state capitalism are the societies where the state has a significant role in both economy and politics.

For a long time West European capitalism was considered the only **authentic, autochthonous and natural** one. The capitalist development of the countries from the second and third echelons of capitalism is considered successful only on condition that the development resembles the development of the countries from the first echelon. Over the last decades a new view has established – the view that the different countries and regions realized the transition from traditional, patriarchal society to modern capitalist society in a **specific way**. The prevailing opinion is that there are **different types of capitalism** and that each of them is **natural and authentic** for the countries and regions where the transition is being carried out. In time and space there are different **clusters** of countries with a **similar** way of production depending on the specific natural and climatic conditions, particular historical development, etc. Each of these clusters represents a specific **type** of capitalism.

The next step in the scientific research of the types of capitalism is to establish these original types of capitalism not in a **deductive**, but in an **inductive** way. This means to establish the original types of capitalism in a **natural** way, i.e. through a cluster analysis according to several main indicators.

In order to conduct the clustering, we collected data regarding three main indicators:

- degree of country development which is examined through the gross domestic product per capita of the countries;

- share of the state sector in the national economy. For it we use an expert appraisal based on a five-stage scale:

- Share of the state sector up to 20%
- Share of the state sector between 20% and 40%
- Share of the state sector between 40% and 60%
- Share of the state sector between 60% and 80%

- Share of the state sector over 80%
- participation of the state in the re-distribution of the Gross Domestic Product, which is examined in two ways: a) we trace the dynamics of the relative share of governmental revenue compared to the gross domestic product; b) we trace the dynamics of the relative share of governmental expenditure compared to the gross domestic product. Then, we take the smaller relative share.

The methodology of statistical analysis of data and clustering is "hierarchical agglomerative clustering". The countries are grouped in qualitatively homogeneous groups based on the values of the three quantitative indicators.

The period for which we found time series of statistical data long enough for a minimum of countries is from 1900 to 2005. The step that we use is 5 years.

As a result from the clustering for each of the 22 fixed years we received four to ten clusters. In each cluster there are between 1 and 34 countries.

We found out that there are cores of countries (or a cluster state) that last successively for a longer or shorter period of time during these 22 fixed years. With the flow of time the cores "attract" other countries or vice versa – some countries "run away" from their cluster. We identified **twelve** such „cases" and think that they develop in time and become **original** types of capitalism. Provisionally, we designate these clusters as First "West European" cluster; Second "West European" cluster; First "Latin American" cluster; Second "Latin American" cluster; First "East European" cluster; Second "East European" cluster; "the USA"; "Japan"; First "Arab" cluster; Second "Arab" cluster; First cluster of the developing countries; Second cluster of the developing countries.³

The designations "first" and "second" refer to: a) their earlier or later emergence in time; b) longer or shorter duration.

We would like to state explicitly that the names we suggest are only the first step towards the determination of the type of capitalism of each cluster. At this stage the names of the clusters are so to say **geographical**. Later, we will try to find a suitable name for each type of capitalism – liberal or state – of the clusters. This can be done after the examination of the characteristics of the particular type.

Having done the clustering with reference to the three indicators, we gathered statistical information with reference to 20 more indicators, grouped in four sections: economic indicators; social indicators; demographic indicators and infrastructural indicators. Together with the three main economic indicators, the indicators become 23 –

³ We use quotes for these provisional names in order to show that: - when the name of the cluster is collective like the First "West European" cluster the quotes show that the cluster includes countries that are not from the given geographical region. (In the particular example, these are more often Australia, New Zealand and Canada.) - when the name of the cluster includes one country only like "the USA", the quotes mean that this country is the core of the cluster and that over the years it includes other countries. (In the particular example Australia and Switzerland often appear together with the USA.)

nine economic, three social (in the sphere of education), six demographic and infrastructural ones. Our main source of primary data was B. R. Mitchell's book "International Historical Statistics. 1750-2005". It has three volumes respectively for Europe, for North and South America and for Africa, Asia and Oceania. The indicators we used are the result of recalculation based on capita or 1000 people (1 000 000 people respectively) of the population.

The nine economic indicators are: GDP per capita, annual growth rate of GDP (%), share of GDP allocated by the state (%), share of the state sector in national economy, unemployment (% of overall population), unemployment (% of workforce), industrial (labor) disputes (per 1000 000 people of the population), employees involved in industrial (labor) disputes (per 1000 people of the population), days lost because of industrial (labor) disputes (per 1000 people of the population).

The social indicators are from the sphere of **education** and they are: children in primary and secondary schools (per 1000 people of the population), teachers in primary and secondary schools (per 1000 people of the population), university students (per 1000 people of the population).

The six demographic indicators are: birth rate and death rate, life expectancy, infant mortality, coefficients of emigration and immigration.

The five infrastructural indicators are: Length of the railway (kilometers per 1000 people of the population); Freights transported by trains (tons per capita); Passengers transported by trains (per capita); Postal services (letters per capita); Telegraphic services (telegrams per capita).

II. DYNAMICS OF THE COMPOSITION AND A GENERAL CHARACTERIZATION OF THE FIRST CLUSTER OF THE DEVELOPING COUNTRIES

TABLE I
COMPOSITION OF THE FIRST CLUSTER OF THE DEVELOPING COUNTRIES

Year	Degree ⁴	Composition
1970	3S	Algeria, Ethiopia, India, Iraq
1975	4S	Algeria, Ghana, Egypt, Ethiopia, Zaire, India, Iraq, Kenia, China, Tunisia, Chile
1980	5S	Ghana, India, Somalia, Sudan
1985	5S	India, Yemen, Kenia, Tanzania
1990	4S	Burma, Vietnam, Egypt, India, Kenia, Tanzania
1995	3S	Burma, India
2000	1S	India
2005	1S	India

The number of the countries in the First cluster of the developing countries is not big. For the period 1970-2005 there is only one year, 1975, in which the cluster included a

⁴ XS stands for state capitalism. The scale has eight degrees. The bigger the number, the less the state participation in the economic processes and the weaker the state capitalism is. The smaller the number, the stronger and "harsher" the form of the established state capitalism is.

relatively big number of countries: Algeria, Ghana, Egypt, Ethiopia, Zaire, India, Iraq, Kenia, China, Tunisia and Chile. For the rest of the period it includes several countries only. In 1995 it includes two countries only - Burma and India and in 2000 and 2005 it consists of India only. India is part of the cluster throughout its existence. Obviously, it is its economic development that is indicative of the key features of the First cluster of the developing countries.

The "geography" of the cluster shows that there are mainly countries from Africa and Asia (South and Southeast). There is a country from Asia Minor in it twice only - Iraq in 1970 and 1975, and a South American one once only - Chile in 1975.

The economic development of the cluster throughout the whole period is that of **state capitalism**. In the beginning the cluster had medium values of state intervention and share of state ownership in economy - 3D. In the 80s these two indicators showed a decrease and the cluster reached low rates of state intervention and share of state ownership - 5D. From the early 90s the degree of state intervention and share of state ownership went up and reached 1D, which was the highest rate of these two indicators.

What is typical for the political systems of the countries from the cluster is that in most of them there was established some form of authoritarian regime. The "mildest" form of authoritarianism was observed in India - authoritarian parliamentarism. There was a "socialist" country in the cluster only in 1975. However, most of the regimes in the other countries were more or less influenced by the "socialist" ideology.

III. ECONOMIC CHARACTERISTICS OF THE FIRST CLUSTER OF THE DEVELOPING COUNTRIES

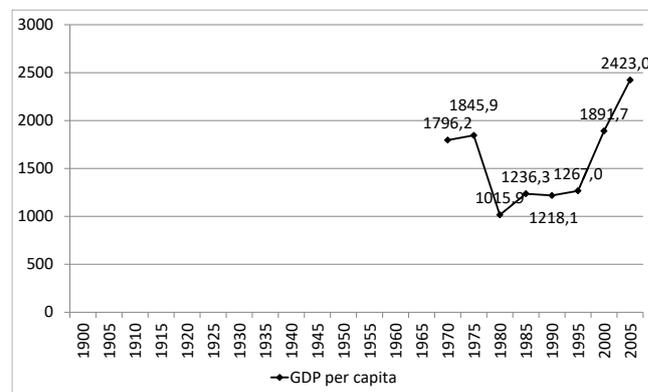


Fig. 1. GDP per capita

a) GDP per capita. There are two periods in the dynamics of the GDP per capita of the First cluster of the developing countries. The first period includes the 70s of the XX century. During this period the GDP per capita fell. This did not mean poor economic development since most of the countries registered a demographic boom for the period. It did not mean a very good economic development either. For 25 years after that period there was a considerable increase in the GDP per capita of the First cluster of the developing countries - from \$1015,9 in 1980

to \$2423,0 in 2005. The demographic boom continued during that period. These two circumstances indicated a successful economic development. It was during that period that a trend of “weakening” of state capitalism began. The “mild” forms were replaced by “severer” and stronger forms of state capitalism. In 2000 and 2005, when the cluster consisted of India only, state capitalism was in its highest form – 1D. Obviously, the strong state capitalism of that period of the cluster’s development was favorable for the economic development.

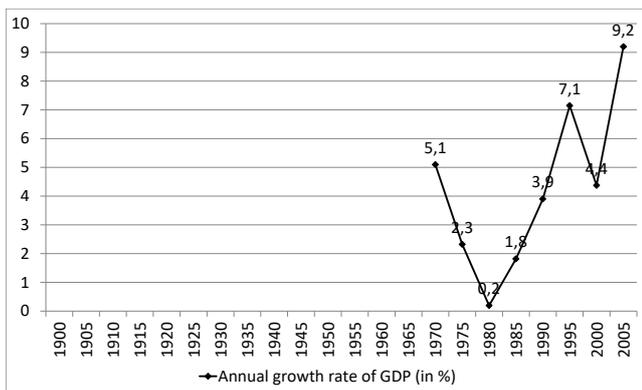


Fig. 2. Annual growth rate of GDP

b) Annual growth rate of GDP. The same two periods that were observed in the dynamics of the GDP per capita can be observed in the dynamics of the annual growth rate of GDP. In the 70s of the XX century the annual growth rate of GDP went down. As it was already mentioned, this did not mean poor economic development since during this period there was a demographic boom in most of the countries. It did not mean a very good economic development either. For 25 years after that period there was a considerable increase in the annual growth rate of GDP of the First cluster of the developing countries – from 0,2% in 1980 to 9,2% in 2005. There was only one very short period of decrease – between 1995 and 2000. In the conditions of a demographic boom, this rate of GDP growth conclusively proved the successful economic development of the First cluster of the developing countries in the 80s and 90s of the XX century and the first five years of the XXI century.

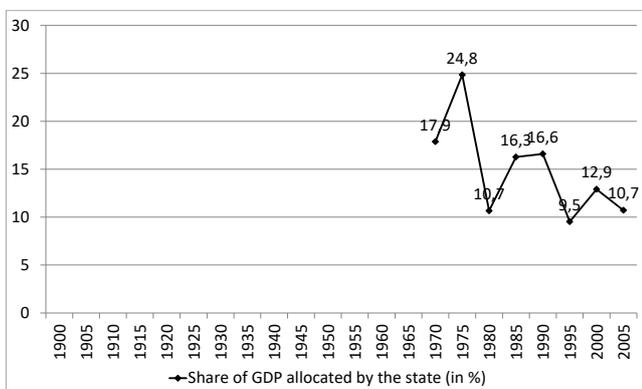


Fig. 3. Share of GDP allocated by the state

c) Share of GDP allocated by the state. The dynamics of the share of GDP allocated by the state is unsustainable. It is characterized by sharp rises and falls and, on the whole, the trend is downward. The share of GDP allocated by the state went down from 17,9% in 1970 to 10,7% in 2005. This means that the form of the state capitalism, namely its strong form, is determined not by the share of GDP allocated by the state, but by the other factor – the share of state ownership in the national economy.

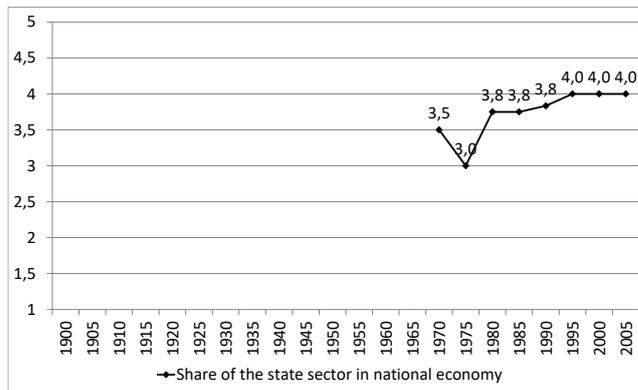


Fig. 4. Share of state sector in national economy

d) Share of state sector in national economy. During the observed period the share of the state sector in the national economy was high and showing an upward trend. During the last decade, when the cluster consisted of India only, the rate reached its highest values. That was why it determined the form state capitalism as a strong one.

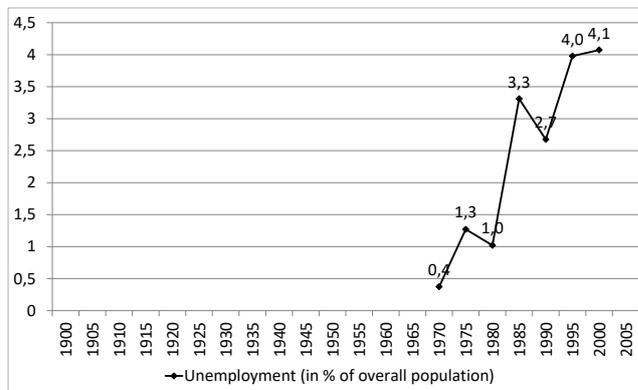


Fig. 5. Unemployment

e) Unemployment (% of overall population). Unfortunately, the dynamics of unemployment (% of overall population) is an indicator of processes that are extremely negative from a social point of view. For a period of 25 years unemployment rose dramatically. This is typical of the rapidly industrializing countries. The pace of increase in the number of jobs in industrial centers is not sufficient to ensure the „absorbing“ of the rural workforce flooding the cities. From a purely scientific point of view, these processes could be defined as a transformation of the hidden seasonal rural unemployment into explicit unemployment in industrial centers. Obviously,

unemployment is a more serious problem for the First cluster of the developing countries.

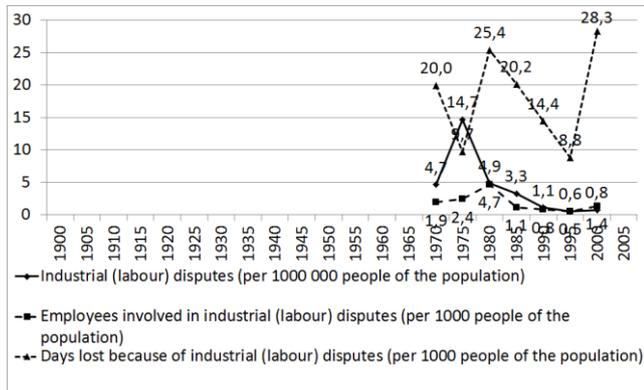


Fig. 6. Industrial (labor) disputes, number of employees involved and days lost

e) Industrial (labor) disputes (per 1 000 000 people of the population); number of employees involved in industrial (labor) disputes (per 1 000 000 people of the population); days lost because of industrial (labor) disputes (per 1000 people of the population). After the sharp rise during the period 1970-1975 the number of industrial (labor) disputes went down until the end of the observed period. With the exception of 1980, the number of employees involved in industrial (labor) disputes did not go up either. However, the disputes became more heated. Despite the fluctuations, the number of the days lost because of industrial (labor) disputes (per 1000 people of the population) increased during the observed period from 20,0 in 1970 to 28,3 in 2000.

IV. EDUCATIONAL CHARACTERISTICS OF THE FIRST CLUSTER OF THE DEVELOPING COUNTRIES

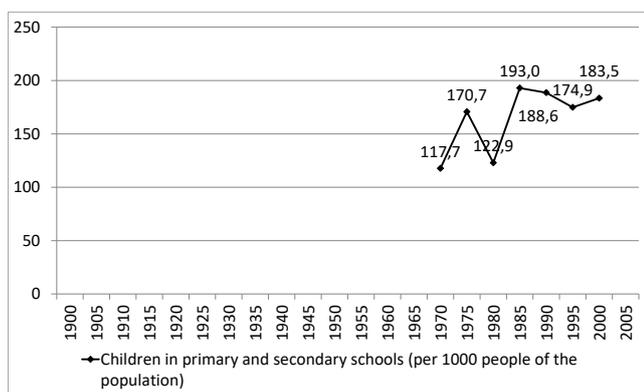


Fig. 7. Children in primary and secondary schools

a) Children in primary and secondary schools (per 1000 people of the population). Two periods can be distinguished in the dynamics of the indicator “Children in primary and secondary schools”. The first one is from 1970 to 1985 and it is characterized by two sharp rises and one dramatic fall. On the whole, the number of children in primary and secondary schools (per 1000 people of the population) during that period increased considerably from 117,7 in 1970 to 193,0 in 1985. The dynamics of the

second period, from 1985 to 2000 is more balanced and generally at the same level. Probably, a point of saturation was reached in 1985.

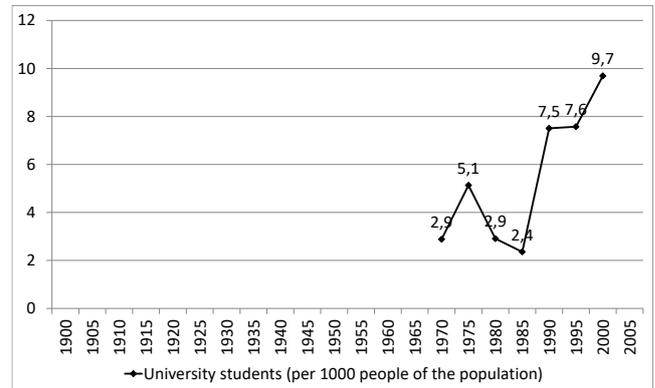


Fig. 8. University students

a) University students (per 1000 people of the population). We can distinguish the same two periods in the dynamics of university students. The first one is from 1970 to 1985. It is characterized by one sharp rise and two falls, one of which very sharp. On the whole, the number of university students (per 1000 people of the population) remained almost at the same level with values varying from 2,9 in 1970 to 2,4 in 1985. During the next period – from 1985 to 2000 the trend was definitely upward. The number of university students (per 1000 people of the population) increased significantly from 2,4 in 1985 to 9,7 in 2000. Compared with the First “East European” cluster these values are lower.

CONCLUSION

- Definitely, the elites of the countries form the First cluster of the developing countries have a successful educational policy;
- Generally, the economic development of the cluster is good. For example, the GDP per capita rose considerably in the conditions of a demographic boom. The annual rate of GDP growth is very good as well;
- There are some negative trends in the economic development of the First cluster of the developing countries, however. The most important one is the dramatic rise of unemployment (% of overall population). This is one of the key factors causing social tension and upheavals in the First cluster of the developing countries.

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