ECONOMIC GOALS RANKING APPROACH INCOMPARATIVE ANALYSIS OF ECONOMIC SYSTEMS

Alexander Katkov, Johnson & Wales University

ABSTRACT

Three main economic systems that have coexisted during last 100 years: pure market, pure command, and mixed economics, have the same mission: to satisfy unlimited human needs and wants using a set of limited economic resources. Each of them is pursuing the same major economic goals: economic efficiency, economic growth, economic stability, economic equality and economic self-sufficiency. But these systems are very different. One reason why they are different, in our opinion, is the difference in the priorities and ranking order of these five major economic goals. This ranking order is different for every system. As a result, each system has established its own economic structure, has determined its own role for the government, and has used a different strategy for its function and economic development. In this paper I will compare the correlation of the perceived priorities in the ranking orders of so-called "pure" market, "pure" command, and "ideal" mixed economies using the Kendall rank correlation coefficient as the instrument for measuring the correlation between "ideal" orders and perceived real orders of economic structure real orders of economic goals.

JEL: P5, P51, C40

KEYWORDS: Economic Systems, Comparative Analysis, Ranking Approach

INTRODUCTION

Il economic systems have the same mission: to satisfy peoples' unlimited needs and wants using limited economic resources. But there are important differences between all of these systems' structures determined by the difference in property rights and in methods of organizing processes of manufacturing and distribution of products and services among people. As I discussed in my earlier publication (Katkov, 2012), the identity of economic systems' missions defines the identity of the list of major economic goals. But the priorities of those goals' realization would be different for every economic system. As result, each system will design and use a different strategy for its function and development. So, if we were able to find a tool that would allow us to compare the ranking orders of those economic goals for every economic system, we would be able to establish the "ideal" ranking orders of each one of them. Using those "ideal" orders as "standards" we would be able to find a correlation between the recent goals ranking order and those standards for any country and to arrive at some conclusions about that country's developmental strategy.

This paper offers a new approach to the comparative analysis of economic systems that is based on evaluating the correlation between the so called "ideal" orders of economic goals: efficiency, growth, stability, equality and self-sustainability, and the real orders of economic goals of selected countries ranked according to the priorities declared by their leaders. These ranking orders would not be considered the perfectly correct orders because for the present paper we are introducing a new approach, not presenting precisely correct coefficients of the correlation.

LITERATURE REVIEW AND RESEARCH DEVELOPMENT

The idea of using an economic goals ranking method to analyze the efficiency of economic planning and the performance of economic systems at the level of the single enterprise or a particular industry belongs to the Soviet economist Ivan Syroezhin , 1980, 1981). Unfortunately his research ended abruptly because of his early death in 1983 and the following demise of the Soviet planning system in the late 1980s. I am familiar with very few further attempts to develop this idea in other areas of economic research, and these only in Russia (Parfenova, 1994).

I implemented the idea of ranking of economic goals for the first time in my comparative study of government regulation in selected economic systems (Katkov, 2012). In that article I selected three economic systems: pure market, pure command and mixed economics, and four major economic goals: economic efficiency, economic growth, economic stability, and economic equality. I built the ranking orders for each of them using my analysis of the historical developments of British and American capitalism in the 19th and 20th centuries (pure market economy), of Soviet socialism before 1956 (pure command economy), and my understanding of general trends in the emergence and spread of the mixed economic system during the 20th century all over the world. This work was based on my earlier analysis of the three economic systems and their economic goals (Katkov, 2011).

The goal of economic efficiency (efficiency) has been defined as the highest possible level of productivity applied to the best allocation of available resources according to the existing combination of needs and wants. The goal of economic growth (growth) has been explained as the desirable increase in the produced output and the controlled market share locally or globally. The goal of economic stability (stability) has been described as the maintenance of minimal levels of unemployment and inflation. The goal of economic equality (equality) has been formulated as the level of equal accessibility of products and services to the people.

In my paper of 2012, I considered the "ideal" ranking order for prioritizing economic goals for all three economic systems as follows:

- pure market economy: 1. Efficiency, 2 Growth, 3. Stability, 4. Equality;
- command economy: 1. Equality, 2. Stability, 3. Growth, 4. Efficiency;
- "ideal" mixed economy: 1. Stability, 2. Efficiency, 3. Equality, 4. Growth.

Every country has its own order in the prioritization of economic goals. We can measure the differences between the "ideal" order and the particular order as it is observed in any given country. To measure those differences we can use the idea of ranking correlation. The ranking correlation approach was developed by the British mathematician Maurice Kendall (1930, 1955). We can take the determined order of economic goals for the given country and compare it with the "ideal" order. The received coefficient of correlation can be used to compare how close the specific country's economic goal order comes to the "ideal" ranking orders of the pure market or pure command economy. The hypothesis used in this case was very simple: the higher the value of the Kendall tau coefficient of correlation between two orders— the given country to the pure market economy— the closer the economic goals ranking order of the specific country to the pure market economy economic goals ranking order and therefore the more market and freedom of choice options are left for the private sector. But if the correlation coefficient value is higher when the country's goals order is compared to the command economy's economic goals ranking order, then this economy has a very substantial government involvement in economic matters (Katkov, 2012).

According to Herve Abdi (2007), when we are comparing two ordered sets we should look at the number of different pairs between the two sets to allow us to get what is called the "symmetric difference distance" between the two sets.

$$\tau = 1 - \frac{2 \times [d_{\Delta} \left(\mathcal{P}_{1}, \mathcal{P}_{2}\right)]}{N \left(N-1\right)}$$
(1)

Here the symmetric difference distance between two sets of ordered pairs \mathcal{P}_1 and \mathcal{P}_2 is presented as $d_{\Delta}(\mathcal{P}_1, \mathcal{P}_2)$ and N is the number of ranked objects (goals); in our case N = 4. The Kendall coefficient can have values between -1 and +1: $-1 \le \tau \le +1$ where -1 is the largest possible distance and +1 is the smallest one.

According to H. Abdi (2007), the Kendall coefficient τ can be interpreted in a probabilistic context (see Hays, 1973) as the difference between the probability for these objects to be in the same order P (same) and the probability of these objects to be in a different order P (different). In our case the difference is between the probability that goals are in the theoretically "ideal" order and the probability that they are in a different order:

$$\tau = P \text{ (same)} - P \text{ (different)}.$$

(2)

We used the Kendall tau rank correlation coefficient between two ordered sets for selected leading economies: USA, China, Germany, Japan and Russia. The result of that analysis was published in 2012 (Katkov, 2012). Recently we came to the conclusion that the selected list of major economic goals needed to be expanded. The obvious choice of the first additional goal is the goal that also is common for every economic system: the goal of economic self-sustainability.

In this paper we are analyzing a more complex list of economic goals: efficiency, growth, stability, equality and self-sustainability for four selected countries: USA, China, Russia and Costa Rica. The choice of goals has been determined by our personal opinion about leading economic goals associated with the main mission of any economic system of satisfying peoples' unlimited needs and wants using a limited set of economic resources and by the opinions of some experts on the economy of the USA (Higgs 1987) and China (Fishman, 2006). These opinions have been formed by long experience in the teaching of a course on comparative economic systems. The choice of countries for the comparative analysis is quite obvious: two largest economies (USA and China), the country where the command economy had been created and more or less worked for a70-year period – Russia, and Costa Rica – one of the few countries in the world declaring the goals of self-sustainability and environmental protection as the most important economic goals for the last few decades.

After the goals ranking orders for the pure market, pure command, and the "ideal" mixed economies have been determined, we built the respective goals orders for each selected country based on our understanding of recent priorities. Using multiple sets of goals ranks for each country: the "recent" set and three theoretically "ideal" sets of goals of three economic systems, we calculated three Kendall coefficients of ranking correlation tau for every country. Results have been summarized in Table 1, showing that the coefficients could be substantially different and that this difference can be interpreted as confirming the hypothesis that the method of the dynamic standard using the correlation of goals ranking can be used in comparative analysis of economic systems.

METHODOLOGY

The goal of economic self-sustainability became one of the leading economic goals for any country now that the problem of resource scarcity has grown almost exponentially as the result of population growth

during the 20th century from 1.65 billion people in 1900 to 7.1 billion now. The ability of each country to use its own resources in the most efficient way and to develop new technologies that will allow an increase in the usage of renewable resources should be considered among the most important priorities of every country. Self-sustainability is a key of future growth and also a factor of political stability and peace because dependence on imported resources makes countries economically vulnerable and forces them to use a large share of their resource endowment on the development of the military sector.

The aforementioned order of goals ranking for all three main economic systems will change with the addition of the economic goal of self-sustainability. We understand and accept that other economists can have different opinions both about the goals lists and about their "ideal" ranking. The purpose of this publication is to get some feedback from colleagues to see the future perspectives of the approach presented here. The new modified economic goals ranking orders for three economic systems are as follows:

A pure market economy's goals ranking order is: *efficiency, growth, stability, equality, self-sustainability.* We placed the goal of sustainability in the last position because in the 19th century most developed economies expanded their resource bases either by acquiring neighboring territories (USA, Russia), or by taking political and economic control over less developed countries converting them into colonies (Britain, France). The resource base grew through this expansion, and the goal of self-sustainability was accomplished as a consequence of economic expansion into new territories.

A pure command economy's goal ranking order would be different: *equality, stability, growth, self-sustainability, efficiency.* As we see, the goal of self-sustainability has a low priority for this system also. The Soviet Union had probably the largest natural resource base in the world and had the third largest population after China and India. Because of the low standard of living the level of consumption could be satisfied by mostly local resources.

A mixed economy's "ideal" ranking order of economic goals is the most debatable. One of the possible reasons would be in the permanent changes in the global economic environment that would affect the process of the prioritization of economic goals. For example, during the phase of economic expansion the goal of economic stability should take the leading position because of the inflation that traditionally will be the consequence of economic growth. At the same time during the recession phase the goal of economic growth should became the leading one. The suggested "ideal" order for the abstract mixed economy could be the following: *efficiency, self-sustainability, equality, stability, growth*.

The next step would be the development of economic goals ranking orders for selected countries. Our choice of countries for this paper is as follows: USA, China, Russia, and Costa Rica. To get the economic goals ranking orders for each country we should collect experts' opinions. After those opinions are analyzed and summarized, we can build these orders on the basis of generalizations of those opinions. Because in our case we are discussing not the perfection of the ranking orders but the application of the ranking method, we can build ranking orders based upon our own understanding of the economic situation in each selected country.

USA: stability, growth, efficiency, self-sustainability, equality. China: growth, stability, efficiency, equality, self-sustainability. Russia: stability, efficiency, self-sustainability, equality, growth. Costa Rica: self-sustainability, stability, efficiency, equality, growth.

Now we can find Kendall tau rank correlation coefficients for each country using as our standards the economic goals ranking orders for pure market, pure command, and mixed economic systems. Let assign the following ranks to five main economic goals based upon our understanding of their importance to the

modern mixed economy: Efficiency – 1, Self-Sustainability – 2, Equality – 3, Stability - 4, Growth – 5. In this case the economic goals order for the mixed economy would be: [Efficiency, Self-Sustainability, Equality, Stability, Growth] with the ranking: $\mathcal{R}_{I} = [1, 2, 3, 4, 5]$.

Then the economic goals order for the pure market economy would be: [Efficiency, Growth, Stability, Equality, Self-Sustainability] with the following ranking: $\mathcal{R}_{2=}[1, 5, 4, 3, 2]$.

The economic goals order for the pure command economy will look like: [Equality, Stability, Growth, Self-Sustainability, Efficiency] with the following ranking: $\mathcal{R}_3 = [3, 4, 5, 2, 1]$.

When we are comparing two ordered sets we should look at the number of different pairs between two sets. It will allow us to get what is called the "symmetric difference distance" between two sets.

$$\tau = 1 - \frac{2 \times [d_{\Delta} \left(\mathcal{P}_{1}, \mathcal{P}_{2}\right)]}{N \left(N-1\right)}$$
(1)

Where the symmetric difference distance between two sets of ordered pairs \mathcal{P}_1 and \mathcal{P}_2 is presented as d_{Δ} ($\mathcal{P}_1, \mathcal{P}_2$). N is the number of ranked objects (goals); in our case N = 4. The Kendall coefficient can have values between -1 and +1: $-1 \le \tau \le +1$ where -1 is the largest possible distance and +1 is the smallest one.

Knowing this coefficient we can conclude how close the particular country's recent economic policy comes to the declared list of economic goals outlined by the new leader or the new government after being elected and declaring economic policy priorities. Those priorities can be ranked, and this "ideal" declared rank order could be compared with the factual results of the prioritization of economic goals' realization after one, two, and more years of the leader's or the government's administration. We also can use this approach to illustrate the differences in economic goals priorities when discussing the different economic systems in a general Macroeconomics course or in specialized courses on comparative economic systems. Each country traditionally formulates major economic goals and establishes the rank of their priorities. This rank can be compared with ranks that could be established for the particular standard that we are calling "the pure market," "the pure command," and "the ideal mixed" economies. The results of this comparison are shown below.

RESULTS AND DISCUSSION

Let Kendall tau rank correlation coefficients be found for the U. S. economy. The U.S. economy economic goals order is [Stability, Growth, Efficiency, Self-Sustainability, Equality] with the following ranking:

 $\mathcal{R}_4 = [4, 5, 1, 2, 3].$

The Kendall coefficient of rank correlation of economic goals for the U.S. economy and the mixed economy would be -0.2.

$$\mathcal{P}_{l} = \{ [1, 2], [1, 3], [1, 4], [1, 5], [2, 3], [2, 4], [2, 5], [3, 4], [3, 5], [4, 5] \}.$$

$$\mathcal{P}_{4} = \{ [4, 5], [4, 1], [4, 2], [4, 3], [5, 1], [5, 2], [5, 3], [1, 2], [1, 3], [2, 3] \}.$$
(3)

The set of pairs which are in only one set of ordered pairs is {[1, 4], [1, 5], [2, 4], [2, 5], [3, 4], [3, 5], [4, 1], [4, 2], [4, 3], [5, 1], [5, 2], [5, 3]}. So, the value of $d_{\Delta} (\mathcal{P}_{I}, \mathcal{P}_{4}) = 12$. That means that the value of Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 12}{5 \times 4} = 1 - \frac{6}{5} = -\frac{1}{5} = -0.2 \tag{4}$$

The Kendall tau coefficient of rank correlation of economic goals for the U.S. economy and the pure market economy would be 0.2.

$$\mathscr{P}_{2} = \{ [4, 5], [4, 1], [4, 2], [4, 3], [5, 1], [5, 2], [5, 3], [1, 2], [1, 3], [2, 3] \}.$$

$$\mathscr{P}_{4} = \{ [1, 5], [1, 4], [1, 3], [1, 2], [5, 4], [5, 3], [5, 2], [4, 3], [4, 2], [3, 2] \}.$$

$$(5)$$

The set of pairs which are in only one set of ordered pairs is {[4, 5], [4, 1], [5, 1], [2, 3], [1, 5], [1, 4], [5, 4], [3, 2]}. So, the value of d_{Δ} (\mathcal{P}_2 , \mathcal{P}_4) = 8. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 8}{5 \times 4} = 1 - \frac{4}{5} = \frac{1}{5} = 0.2 \tag{6}$$

The Kendal tau coefficient of rank correlation of economic goals for the U.S. economy and the pure command economy would be -0.4

 $\mathcal{P}_{3} = \{[3, 4], [3, 5], [3, 2], [3, 1], [4, 5], [4, 2], [4, 1], [5, 2], [5, 1], [2, 1]\}.$ (7) $\mathcal{P}_{4} = \{[1, 5], [1, 4], [1, 3], [1, 2], [5, 4], [5, 3], [5, 2], [4, 3], [4, 2], [3, 2]\}.$

The set of pairs which are in only one set of ordered pairs is $\{[3, 4], [3, 5], [3, 1], [4, 5], [4, 1], [5, 1], [2, 1], [1, 5], [1, 4], [1, 3], [1, 2], [5, 4], [5, 3], [4, 3]\}$. So, the value of $d_{\Delta} (\mathcal{P}_{3}, \mathcal{P}_{4}) = 14$. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 14}{5 \times 4} = 1 - \frac{7}{5} = -\frac{2}{5} = -0.4 \tag{8}$$

We can do the same computation for the Chinese economy . China: [Growth, Stability, Efficiency, Equality, Self-Sustainability] with the ranking: $\mathcal{R}_5 = [5, 4, 1, 3, 2]$.

China's Kendall tau coefficient of rank correlation of economic goals with the "ideal" mixed economy is -0.6.

$$\mathcal{P}_{I} = \{ [1, 2], [1, 3], [1, 4], [1, 5], [2, 3], [2, 4], [2, 5], [3, 4], [3, 5], [4, 5] \}.$$

$$\mathcal{P}_{5} = \{ [5, 4], [5, 1], [5, 3], [5, 2], [4, 1], [4, 3], [4, 2], [1, 3], [1, 2], [3, 2] \}.$$
(9)

The set of pairs which are in only one set of ordered pairs is {[1, 4], [1, 5], [2, 3], 2, 4], [2, 5], [3, 4], [3, 5], [4, 5], [5, 4], [5, 1], [5, 3], [5, 2], [4, 1], [4, 3], [4, 2], [3, 2]}. So, the value of $d_{\Delta} (\mathcal{P}_{I}, \mathcal{P}_{5}) = 16$. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 16}{5 \times 4} = 1 - \frac{8}{5} = -\frac{3}{5} = -0.6 \tag{10}$$

China's Kendall coefficient of rank correlation of economics goals with the pure market economy is 0.6:

$$\mathcal{P}_{2} = \{ [4, 5], [4, 1], [4, 2], [4, 3], [5, 1], [5, 2], [5, 3], [1, 2], [1, 3], [2, 3] \}.$$
(11)
$$\mathcal{P}_{5} = \{ [5, 4], [5, 1], [5, 3], [5, 2], [4, 1], [4, 3], [4, 2], [1, 3], [1, 2], [3, 2] \}.$$

The set of pairs which are in only one set of ordered pairs is {[4, 5], [2, 3], [5, 4], [3, 2]}. So, the value of d_{Δ} ($\mathcal{P}_2, \mathcal{P}_5$) = 4. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is

$$\tau = 1 - \frac{2 \times 4}{5 \times 4} = 1 - \frac{2}{5} = \frac{3}{5} = 0.6 \tag{12}$$

China's Kendall coefficient of rank correlation of economics goals with the pure command economy is 0.

 $\mathcal{P}_{3} = \{[3, 4], [3, 5], [3, 2], [3, 1], [4, 5], [4, 2], [4, 1], [5, 2], [5, 1], [2, 1]\}.$ $\mathcal{P}_{5} = \{[5, 4], [5, 1], [5, 3], [5, 2], [4, 1], [4, 3], [4, 2], [1, 3], [1, 2], [3, 2]\}.$ (13)

The set of pairs which are in only one set of ordered pairs is {[3, 4], [3, 5], [3, 1], [4, 5], [2, 1], [5, 4], [5, 3], [4, 3], [1, 3], [1, 2]}. So, the value of $d_{\Delta}(\mathcal{P}_{3}, \mathcal{P}_{5}) = 10$. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is

$$\tau = 1 - \frac{2 \times 10}{5 \times 4} = 1 - \frac{5}{5} = 0 \tag{14}$$

The next country is Russia. The Russian economy's goals order is [Stability, Efficiency, Self-Sustainability, Equality, Growth] with the ranking order: \mathcal{R}_6 = [4, 1, 2, 3, 5]. Russia's Kendall coefficient of rank correlation of economics goals with the "ideal" mixed economy is 0.4.

$$\mathcal{P}_{l} = \{ [1, 2], [1, 3], [1, 4], [1, 5], [2, 3], [2, 4], [2, 5], [3, 4], [3, 5], [4, 5] \}.$$

$$\mathcal{P}_{6} = \{ [4, 1], [4, 2], [4, 3], [4, 5], [1, 2], [1, 3], [1, 5], [2, 3], [2, 5], [3, 5] \}.$$
(15)

The set of pairs which are in only one set of ordered pairs is {[1, 4], [2, 4], [3, 4], [4, 1], [4, 2], [4, 3]}. So, the value of d_{Δ} (\mathcal{P}_{I} , \mathcal{P}_{6}) = 6. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 6}{5 \times 4} = 1 - \frac{3}{5} = \frac{2}{5} = 0.4 \tag{16}$$

Russia's Kendall coefficient of rank correlation of economics goals with the pure market economy is 0.6:

$$\mathcal{P}_{2} = \{ [4, 5], [4, 1], [4, 2], [4, 3], [5, 1], [5, 2], [5, 3], [1, 2], [1, 3], [2, 3] \}.$$

$$\mathcal{P}_{6} = \{ [4, 1], [4, 2], [4, 3], [4, 5], [1, 2], [1, 3], [1, 5], [2, 3], [2, 5], [3, 5] \}.$$
(17)

The set of pairs which are in only one set of ordered pairs is {[5, 1], [5, 2], [5, 3], [2, 5], [1, 5], [3, 5]}. So, the value of $d_{\Delta} (\mathcal{P}_2, \mathcal{P}_6) = 6$. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 6}{5 \times 4} = 1 - \frac{3}{5} = \frac{2}{5} = 0.4 \tag{18}$$

Russia's Kendall tau coefficient of rank correlation of economics goals with the pure command economy is -0.2:

 $\mathcal{P}_{3} = \{[3, 4], [3, 5], [3, 2], [3, 1], [4, 5], [4, 2], [4, 1], [5, 2], [5, 1], [2, 1]\}.$ $\mathcal{P}_{6} = \{[4, 1], [4, 2], [4, 3], [4, 5], [1, 2], [1, 3], [1, 5], [2, 3], [2, 5], [3, 5]\}.$ (19)

The set of pairs which are in only one set of ordered pairs is $\{[3, 4], [3, 2], [3, 1], [5, 2], [5, 1], [2, 1], [4, 3], [1, 2], [1, 3], [1, 5], [2, 3], [2, 5]\}$. So, the value of $d_{\Delta}(\mathcal{P}_3, \mathcal{P}_6) = 12$. That means that the value of Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 12}{5 \times 4} = 1 - \frac{6}{5} = -\frac{1}{5} = -0.2 \tag{20}$$

The last country in our analysis is Costa Rica. The Costa Rican economy's goals order is [Self-Sustainability, Stability, Efficiency, Equality, Growth] with ranking order: $\mathcal{R}_{7}=[2, 4, 1, 3, 5]$.

Costa Rica's Kendall coefficient of rank correlation of economics goals with the "ideal" mixed economy is 0.4:

$$\mathcal{P}_{I} = \{ [1, 2], [1, 3], [1, 4], [1, 5], [2, 3], [2, 4], [2, 5], [3, 4], [3, 5], [4, 5] \}.$$

$$\mathcal{P}_{\mathcal{T}} = \{ [2, 4], [2, 1], [2, 3], [2, 5], [4, 1], [4, 3], [4, 5], [1, 3], [1, 5], [3, 5] \}.$$
(21)

The set of pairs which are in only one set of ordered pairs is {[1, 2], [1, 4], [3, 4], [2, 1], [4, 1], [4, 3]}. So, the value of d_{Δ} (\mathcal{P}_{I} , \mathcal{P}_{7}) = 6. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 6}{5 \times 4} = 1 - \frac{3}{5} = \frac{2}{5} = 0.4 \tag{22}$$

Costa Rica's Kendall coefficient of rank correlation of economics goals with the pure market economy is 0:

$$\mathcal{P}_{2} = \{ [4, 5], [4, 1], [4, 2], [4, 3], [5, 1], [5, 2], [5, 3], [1, 2], [1, 3], [2, 3] \}.$$

$$\mathcal{P}_{7} = \{ [2, 4], [2, 1], [2, 3], [2, 5], [4, 1], [4, 3], [4, 5], [1, 3], [1, 5], [3, 5] \}.$$
(23)

The set of pairs which are in only one set of ordered pairs is {[4, 2], [5, 1], [5, 2], [5, 3], [1, 2], [2, 4], [2, 1], [2, 5], [1, 5], [3, 5]}. So, the value of $d_{\Delta}(\mathcal{P}_2, \mathcal{P}_7) = 10$. That means that the value of the Kendall tau rank correlation coefficient between two orders of economic goals is

$$\tau = 1 - \frac{2 \times 10}{5 \times 4} = 1 - \frac{5}{5} = 0 \tag{24}$$

Costa Rica's Kendall coefficient of rank correlation of economics goals with the pure command economy is -0.2:

 $\mathcal{P}_{3} = \{[3, 4], [3, 5], [3, 2], [3, 1], [4, 5], [4, 2], [4, 1], [5, 2], [5, 1], [2, 1]\}.$ $\mathcal{P}_{7} = \{[2, 4], [2, 1], [2, 3], [2, 5], [4, 1], [4, 3], [4, 5], [1, 3], [1, 5], [3, 5]\}.$ (25)

The set of pairs which are in only one set of ordered pairs is {[3, 4], [3, 2], [3, 1], [4, 2], [5, 2], [5, 1], [2, 4], [2, 3], [2, 5], [4, 3], [1, 3], [1, 5]}. So, the value of $d_{\Delta}(\mathcal{P}_{3}, \mathcal{P}_{7}) = 12$. That means that the value of Kendall tau rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 12}{5 \times 4} = 1 - \frac{6}{5} = -\frac{1}{5} = -0.2 \tag{26}$$

The interpretation of these coefficients is a separate task which is outside the scope of this paper. But we can offer in this paper some very general conclusions that we can draw after performing a the comparative analysis of coefficients for four selected countries (Table 1.).

Table 1: Kendall Coefficients of Rank Correlation of Economic Goals for Selected Countries

System\Country	USA	China	Russia	Costa Rica
Pure Market	0.2	0.6	0.4	0.0
Pure Command	-0.4	0.0	-0.2	-0.2
Mixed Economy	-0.2	-0.6	0.4	0.4

The columns of this table represent four selected countries: USA, China, Russia and Costa Rica, and rows reflect three selected economic systems. Each cell of this table shows the value of the Kendall coefficient of ranking correlation between two sets of economic goals: the given country's "recent" goals ranking order and the given system "ideal" ranking order. The positive coefficients indicate the "closeness" of two sets and could be interpreted as the close approximation of the recent economic policy to the specific economic system economic mission interpretation.

Table 1, which includes all coefficients, shows that Russia and especially China are closer to the pure market economy than the USA and Costa Rica. It can be explained by the drastic structural changes in the Russian and Chinese economies during the last 25-30 years when both countries tried to build market economies as soon as possible. At the same time, the Chinese economy is a little closer to the former command approach than Russia because of the greater control of the national economy in the capital goods sector by the Chinese government. At the same time the Chinese economy shows the lowest correlation with an "ideal" mixed economy because of the very high level of dependence of Chinese economic growth on exported raw materials. Because the goal of self-sustainability, in our opinion one of the highest priorities in a modern ideal "mixed" economy, now has the lowest priority for China, the Kendall tau coefficient of rank correlation shows the largest difference from the "ideal" mixed economy. The great dependence of the U.S. economy on imported energy resources also pushes the goal of self-sufficiency for that country to the end of the goals priorities ranking and as the result the coefficient of rank correlation of economic goals with the "ideal" mixed economy is also negative.

CONCLUSIONS

We believe that the approach introduced in this paper of the comparative analysis of different economic systems and selected countries based upon the rank correlation of their economic goals can open a discussion about the ability to compare directions of the economic development of any specific country with the declared directions of that development. The coefficients calculated above show different prioritization of economic goals in different countries. Some countries are following a more market-oriented economic course of economic development, while others are using more government regulation. The goal of this paper was to show that the presented method can be used to analyze differences between countries. We understand that the method itself could be improved, and that orders of economic goals ranks should be built upon pools of expert opinion. We are looking for constructive criticism that can stimulate the future improvement and expansion of our method.

As a future venue for the application of this method, we propose to analyze the correlation between a specific country's economic policy upon election of new leadership and the final results of economic development after that leader's term has ended.

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BIOGRAPHY

Alexander Katkov is a professor of economics in the John Hazen White School of Arts and Sciences of Johnson & Wales University. His research appears in journals such as *Journal of Applied Business and Economics (USA), Journal of Business and Behavioral Sciences (USA), Asian Journal of Social Sciences and Humanities (Japan), Journal of Economic Sciences (Russia.* He can be reached at Johnson & Wales University, 8 Abbott Park Place, Providence, Rhode Island 02903, USA, akatkov@jwu.edu.