

# USE OF RANKING METHOD IN COMPARATIVE ANALYSIS OF GOVERNMENT REGULATION IN SELECTED ECONOMIC SYSTEMS

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## ABSTRACT

*This article is the attempt to apply the ranking approach to the comparative analysis of the government regulation in different economic systems: pure market, command, and mixed economies. Today the mixed economic system is most common form of economic organization all-around of the world. Because mixed economies represent the combination of features of the pure market and command economies the ranking approach can allow finding the position of every mixed economy between two extremes: the pure market and the pure command economies. The obtained estimates can be used for the assessment of the government's intentions and strategies in the regulation of the national economy.*

**Keywords:** government regulation; comparative economics; economic systems; ranking method.

## INTRODUCTION

As I discussed in my other article (1), the mission of every economic system is the same: to satisfy unlimited human needs and wants using the set of limited economic resources. The differences between systems are in the systems structures and methods of the organization of processes of manufacturing and distribution of products and services that should satisfy human needs and wants.

The identity of three systems missions is defining the specifics of the list of main economic goals for all of them. There are differences in the secondary goals but the main four economic goals are the same for every economic system. They are economic efficiency, economic growth, economic stability and economic equality.

The list of major economic goal is the same but the priority or ranking of each goal from the list is different for every system. As the result, each system has used the different strategy for the functioning and the development. The specifics of sets of economic resources available for each country and differences in sets of secondary economic goals and their ranking are defining the differences in economic strategies for every country belonging to the same economic system. But I want to look into the differences between ranking orders of four main economic goals by economic systems not countries and to use the Kendall rank correlation coefficient to evaluate

the degree of similarity between sets of ranks of these economic goals for all three economic systems.

## Pure Market Economy

Let starts with the pure market economy. For the “pure” capitalism as traditionally pure market economy has been called the leading economic goal is the “efficiency”. Efficiency in this case is not only the productivity but also the correct allocation of resources accordingly to the existing combinations of needs and wants. Why efficiency is the leading goal of the market economic system? The brief historical excursion will help to find the answer to that question.

The classical capitalism of XVIII – XIX century is the simple enough economy consisting of many small producers who own, at least in the boundaries of the same geographical region, about the same economic resources: natural, technological and labor. So, to survive in the very intense and cruel competition with others the producer should develop two important abilities: 1) the ability of quick adaptation to demand changes, and 2) the ability to control the cost/price ratio. In the case of the “pure” competition the producer have no power to dictate to the consumer. The producer should react to demand changes that are results of permanent changes in sets of consumer needs and wants initiated by the process of the social and technological evolution of the society. The producer who did not possess those two abilities was doomed to the failure going bankrupt or being acquired by the more successful competitor.

As the result of that the need and the ability to grow became the consequences of efficient operations and the company should pursue the economic growth to survive in the future. When the loser is leaving the market the winner can get not only the loser’s market share but the loser’s business also. Because of that the increase in the volume of produced goods and services became closely related to the economic efficiency the goal of economic growth logically possesses the second rank among four major economic goals.

The economic stability cannot be the leading goal of the pure market economy because the pure competition are not establishing any factors that are blocking or braking attempts of individual producers to pursue their individual business interests. So, inevitable mistakes in the consumer demand’s assessment and the underestimation or the lack of the knowledge of the competitors’ abilities became the reasons of the overproduction with the following contractions of economic activities. A contraction that can grow into a recession or even a depression automatically will increase unemployment and will decrease the consumption which is the effect of the decline in the disposable income. Business would react to the demand decrease by the reduction of the production. This reduction of the output’s production will create the contradiction between the goal of economic stability and the goal of economic growth.

Another phase of the business cycle – a “prosperity” phase also will create the factor that would negatively affect the consumer demand and as the result will slow down the level of production. This factor is inflation. Increase in the consumer demand during the “prosperity” phase will increase the price level. So, as the result according to the Law of Demand the quantities of goods and services demanded would decline. As the result inflation as the unemployment would negatively affect the economic growth.

Unemployment and inflation are natural features of the free, non-regulated pure market economy. The control of unemployment and inflation only can be possessed by the sector of the national economy which is independent of the business sector, in other words by the government. So, the “economic stability” can be declared as the desirable goal of the national economy but only the government as the independent coordinator and the umpire of the big game called the “pure market competition” can provide resources and create policies that would help to keep economic development more stable. Practically the goal of economic stability can be achieved by the pure market economy only randomly and partially.

The accessibility of products and services to the population in the pure market economy is determined by the level of the disposable income. Because in the capitalist economy the disposable income is the function of the economic resources involved into the process of production, people who do not own natural and technological resources (land and capital) and own the labor resource that have no demand (wrong skills, no skills, or low level of specific skills) do not have the access to products and services. They are doomed to the suffering and the death. The person who has no income is the only potential consumer. The larger number of people with no or low income the less demand for goods and services and lower the potential of the economic growth.

So, the structure of the pure market economy has the naturally built-in contradiction: the efficiency and the growth of the system became dependent of the lack of stability and of the high level of the income inequality. Those two factors are negatively affecting the economic growth. The entrance of the government onto the economic arena as the controller and the regulator became sooner or later the inevitable necessity. The government can and should try to moderate the effect of this contradiction via tools of the fiscal and monetary policies to improve economic stability and to redistribute incomes to soften their negative effects on the future economic growth.

The pure market economy needs the government regulation in the long run and its transformation into the mixed economy is inevitable.

The ranking order of four major economic goals in the Pure Market Economy is the following: 1. Efficiency. 2. Growth. 3. Stability. 4. Equality.

### **The Command Economy**

In the command or centrally planned economy the order of ranking of the above mentioned four major economic goals is absolutely opposite to the order of their ranking in the pure market economy. In the command economy the function of the property ownership is not playing the leading structure forming role as it is playing in the pure market economy. In the command economy, where according to the law all production units are co-owners of land and capital resources, one business unit cannot be differentiated from another by the ownership boundaries. As the result the leading role of the structure forming function is transferred from the property ownership to the property management function.

Declared co-ownership of the national wealth for every citizen of the country will move goals of

economy equality and economic stability into first two positions among the most important economic goals. The achievement of the goal of economic equality is guaranteeing everybody at least the access to goods and services satisfying the most basic needs and wants. The achievement of the goal of economic stability is guaranteeing everybody an employment and at least a minimal income earned or not earned to become a consumer. To pursue and achieve both of those goals the economy will need the governmental regulation. So, if those two goals have the highest priority for the economic system the government regulation and the control of the economy through the utilization of the management function of property became objectively inevitable. The main question in this situation what is the level and boundaries of that control.

It looks that there are two main choices. The first one is the “soft” version when the government became involved into the process of the regulation of the national economy taking the initiative in the control of leading economic functions.

The second possible choice is the command economy. In this case the government is not just regulating the economy but is performing the absolute control of the economic activities and decisions made by managers of economy’s sectors and even individual economic business units. This option can be realized in the case of the nationalization of the economic resources at the maximum scale. Even the labor resource in the command economy practically became nationalized either through the “soft” form of the control when the ideological brain washing mechanism would name workers the “leading force” of the new society building process to make them enthusiastic about future changes and not demanding about the living standards. Or the nationalization can be realized through the “hard” form of the control when the large part of the population is converted into the “slaves” placed into the special labor camps.

The goal of guaranteed access to products and services for all working people has been secured by the constitutional right to have a job and by the developed system of the social security. As the result, workers have received the guaranteed salary according to the specially developed salaries scales, and orphans, handicapped and retirees have received there disposable income from the government as co-owners of the national natural and technological resources. Their incomes were lower but they were guaranteed.

The economic stability has been achieved by the strict control of the frictional unemployment with the practice of the forceful employment of people who tried to find the reason not to work at all. The control of the inflation the government has performed through the state mechanism of the price setting and through subsidies of the products and services important for the satisfaction of the basic needs: food, housing, transportation, healthcare and education.

It would be incorrect to say that goals of economic efficiency and economic growth have been ignored by leaders of countries with command economics. Oppositely these goals would be declared as leading goals from the stages of party congresses. But as the history shows high growth rates have been achieved as the result of the high exploitation of the countries labor and natural resources.

Even the general analysis of the planning mechanism is showing the less flexibility of the planned economy compare with the market economy. In the command economy there is the

transfer of decision making freedom from the level of the individual producers who are interested in the satisfaction of needs and wants of their direct consumers to be able to stay in the business (Adam Smith “invisible hand”) to the level of the centralized bureaucracy. This bureaucracy is interested not in peoples’ needs and wants satisfaction but wants to ensure the quantitative balance between available set of economic resources and the planned set of produced products and services assigned for the set of the abstract consumers. The substitution of the needs’ satisfaction as the major aim of the economy by the aim of the provision of the inputs-outputs balance has liquidated the possibility of the satisfactory realization of the principle of allocative efficiency. Allocative efficiency is measuring the existing level of utility derived from of the output produced when the structure and the volume of the produced goods and services are reflecting the structure and the volume of the population’s needs and wants.

The complex system cannot be successfully managed from the single center without the center’s attempt to simplify this system. According to the law of cybernetics the level of the complexity of the management (administrative) system should be higher or at least of the equal level of complexity of the managing (guided) system. So, to deal with are emerging complexity of the national economy the State Central Planning Board has been forced to diminish the complexity of the economy growth by decreasing the number of producers in every industry. This strategy gave birth to oligopolies and even monopolies in some sectors of the soviet economy especially in the machine building industry. The inefficiency and possible dictate of monopolies have been widely recognized as the negative characteristics hindering the economic growth.

The state using mechanisms of the centralized control and administration is capable to manage simple tasks of the income redistribution and the maintenance of the some desirable level of the economic stability. But the state cannot ensure the economic efficiency because the freedom of choice and the economic initiative are limited to the minimum by the government directives. This discussed above conflict between economic goals probably never can be resolved. We only can hope to find more or less acceptable alternatives of its resolution by decreasing the centralized government control of the national economy and by diminishing the chaos the contraction phase of the pure market economy’s business cycle through finding the acceptable complementation between functions of ownership and administration. In other words we should welcome the mixed economy.

The ranking order of four major economic goals in the Command Economy is the following: 1. Equality. 2. Stability. 3. Growth. 4. Efficiency.

### **The Mixed Economy**

The mixed economy is more flexible than command economy and more stable and just than market economy because it includes features of both and operates as the synthesis of the market and regulation. Almost all countries of the world today have one or another form of mixed economy and use two most important tools of the government regulation: fiscal and monetary policies. Fiscal policy is affecting the level of consumption through the mechanism of taxation and transfer payments by redistributing incomes in favor of low income earners, and determining the level and boundaries of the government expenditures. The monetary policy is controlling the money supply.

The Keynesian economic model of the government regulation based upon the idea that the aggregate demand should be stimulated to achieve the economic growth. To stimulate consumption of households, which is by far the largest component of the formula of GDP, taxes should be decreased. But lower taxes means less government receipts. So, to keep government spending high to support their growth during the recessions the government must increase the borrowing. As the result, to pursue the goal of economic growth and at the same time to make the access to goods and services more equal through the income redistribution strategies and the creation of new jobs (mostly in the public sector), the government should accept the growth of the national debt and the perspectives of the future inflation. That means that again all economic goals cannot be achieved simultaneously. Even the mixed economy has its own weaknesses, and the goals' prioritization should become the important issue of the government economic strategy.

During the last 40 years the attitude towards the fiscal policy has been changed few times. Probably it was the effect of the ability of the mechanism of the government regulation to adapt towards changing economic environment. In 1960-s most economists and politicians have considered the fiscal policy as the very efficient tool of the national economy regulation. But high levels of the government spending during the Vietnam War have increased the federal budget deficit and have provoked the growth of the inflation. Taxes' increases as the government's response to the situation have negatively affected consumption. The decline in consumption caused two recessions of 1970 and 1974-1975 and the long period of stagflation of 1970s when low rate of the economic growth have been complemented by high rates of inflation.

The so called "reaganomics" that has been introduced in 1980-s has used as the weapon against the stagflation the expansionary fiscal policy. The major argument used then was against the high tax rates. High tax rates are negatively affecting consumption and business investments but not capable in slow growing economy to generate enough tax revenues for the government. As the result, the highest marginal personal income tax rate reaching during Eisenhower and Kennedy terms 91 % has been lowered down during the Reagan term to 28% in 1988 (2). The tax rate for highest income earners have been decreased more than 3 times but in 2004 the half percent of people with highest income have contributed 26.1 % of the personal income tax receipts collected by the federal government. In 1960 the taxes paid by that half percent of the tax payers with highest incomes have contributed only 14% of the federal government personal income tax receipts. The decrease in tax rates did worked. During 8 years when Reagan was in office the tax rates have been decreased about 2.5 times but the federal government receipts from income tax almost doubled: from 227.3 billion in 1980 (3) to \$412.4 billion in 1989 (4). If military spending is rising as it was during Reagan presidential term the deficit has the tendency to grow and this rise in government spending has stimulated the economic growth. If military spending is declining as it was during Clinton presidential term the economic growth has stimulated the budget surplus.

In XXI century Bush and Obama administrations both used the expansionary fiscal policy. During the recession of 2001 this policy has helped very quickly recover the economic growth. But later on the growing military expenditures caused by wars in Iraq and Afghanistan have intensified negative effects of other crises emerged from decisions and actions of the previous administrations: deregulation of financial markets during the Reagan presidential term, and the

deregulation of the housing market during Clinton presidential term. As the result uncontrolled growth of the federal deficit and the national debt and the very deep financial crisis that was caused by the collapse of the real estate market pushed the national economy into very deep and painful recession of 2008-2009. The first stimulus package of 787 billion dollars was not big enough to be able to stimulate if not quick but at least substantial recovery. It became obvious that economy needs more help from the government and this help should be provided not only in the form the second financial stimulus package. It looks that the structure of the U.S. economy needed to be changed and more manufacturing should be returned from the overseas to the USA.

We can assign the following ranking of economic goals for the USA in the recent economic situation: 1. Growth. 2. Stability. 3. Efficiency. 4. Equality.

The precise correctness of this ranking is the secondary goal in this research. It can be obtained through analysis of experts' opinions. Here I am trying to show that this method can provide the valuable information in the analysis of the government regulation. It can show in which direction the economy is pushed by the recent policies: into the direction of the market or the direction of the command economy.

Let use the Kendall rank correlation coefficient to measure the degree of similarity of the recent ranking of U.S. economic goals and "standard" rankings for the market and the command economies.

According to Herve Abdi's article in the "Encyclopedia of Measurement and Statistics" (5) when we are comparing two ordered sets we should look at the number of different pairs between two sets which allow us to get something which is called the "symmetric difference distance" between two sets.

$$\tau = 1 - \frac{2 \times [d_{\Delta}(\mathbf{P}_1, \mathbf{P}_2)]}{N(N-1)}$$

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

The Kendall coefficient  $\tau$  can be interpreted as the difference between the probability to have goals in the same order and the probability that they are in the different order:

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

Let measure the Kendal coefficient between two ordered sets, first: the U.S. economy and the Pure Market Economy, second: U.S. Economy and the Command Economy.

Pure Market Economy: [Efficiency, Growth, Stability, Equality] with the following ranking:

$$\mathbf{R}_1 = [1, 2, 3, 4]$$

Command Economy: [Equality, Stability, Growth, Efficiency] with ranking  $\mathbf{R}_2 = [4, 3, 2, 1]$ .

The U.S. Economy: [Growth, Stability, Efficiency, Equality] with ranking

$$\mathbf{R}_3 = [2, 3, 1, 4].$$

The Kendall coefficient of correlation of economic goals ranking for the U.S. economy and the Pure Market Economy is 0.33:

$$P_1 = \{[1, 2], [1, 3], [1, 4], [2, 3], [2, 4], [3, 4]\}.$$

$$P_2 = \{[2, 3], [2, 1], [2, 4], [3, 1], [3, 4], [1, 4]\}.$$

The set of pairs which are in only one set of ordered pairs is  $\{[1, 2], [2, 1], [1, 3], [3, 1]\}$ . So, the value of  $d(P_1, P_2) = 4$ . That means that the value of the Kendall rank correlation coefficient between two orders of economic goals is:

$$\tau = 1 - \frac{2 \times 4}{4 \times 3} = 1 - \frac{2}{3} = \frac{1}{3} = 0.33$$

Respectfully for the U.S. Economy and the Command Economy the Kendall coefficient of correlation is -0.67.

It can be interpreted as the substantial commitment of the U.S. Government to the market economy principles and to the ‘soft’ regulation of the national economy. Because the mixed economy has features of both market and command economies it is reacting to those mistakes by decreasing level of economic stability as market economy will do in the crisis situation, and at the same time the mixed economy is decreasing its efficiency as the command economy will do. How to solve this problem and how to make economy again efficient and stable? It is the most important problem of contemporary economic theory and practice which is waiting to be solved.

From my point of view the use of the Kendall coefficient of correlation can make the comparative analysis of the trends in the government regulation more informative and practical. My future goal is to create ranks of economic goals for other developed economies and compare results for different countries.

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