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The Historical Fate of the 'First Great Discovery' of Marx

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Abstract. The paper studies the 'first great discovery' of Marx in works of his disciples and followers. We analyse the background and reasons for rejection of Marx's economic doctrine by Western academia, on the one hand, and the rapid spread of Marxist philosophy, on the other. Unsystematic perceptions of the economic legacy of Marx, absolutisation in different periods of development of separate published works, their analysis in isolation from other writings of the founder of Marxism led to a certain simplification and vulgarisation of his views in the Social-Democratic literature of the late XIX–early XX century, as well as in Soviet economic literature in the years 1920–1980.

Particular attention is paid to analysis of works of Marx's followers, showing their role as a factor of promoting and vulgarising of his writings. There are also studied the factors that contributed to primitivisation of Marxism. Why did Marx have 'no luck' with the followers? Above all, it seems because he was looking for them among the working class. Those few who did not come from the workers' environment, unfortunately, did not have a fundamental economic education. Any departure from strictly economic objectivism perceived not only academic scientists, but also the social-democratic theorists as a retreat from historical materialism, the rejection of the basic precepts of Marxism. Mechanistic study of materialism in the knowledge of socio-economic phenomena, focus on the study of history as a natural-historical process led to an underestimation of social practice and its role in the transformation and development of society. Understanding history as a result of human activities left in the shadows. This is typical not only for Karl Kautsky, but also to some extent for the largest philosopher among the Social Democrats – Plekhanov.

The spread of Marxism 'in breadth' has occurred to a much greater extent than it was allowed by existing economic, social and cultural conditions of the countries of Eastern Europe. But the same Russian reality has become a brake for the spread of Marxism in Russia 'in depth' for its development in an integrated and adequate primary source form. Finally, we analyse the causes of increasing interest to the scholarly Marxism in recent years.

Keywords: materialist conception of history; 'people's' (vulgarized) Marxism; 'academic' Marxism.

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Аннотация. В статье исследуется «Первое великое открытие» Маркса в работах его учеников и последователей. Анализируются предпосылки и причины неприятия экономической доктрины Маркса западными учеными, с одной стороны, и стремительное распространение марксистской философии, с другой. Несистемное восприятие экономического наследия Маркса, абсолютизация в разные периоды развития отдельных опубликованных произведений, их анализ в отрыве от других трудов основателя марксизма привели к определенному упрощению и вульгаризации его взглядов в социал-демократической литературе конца XIX – начала XX в., а также в советской экономической литературе 1920–1980 гг.

Особое внимание уделяется анализу произведений последователей Маркса, указывая на их роль, как фактору продвижения, так и вульгаризации его произведений. Изучаются также факторы, которые способствовали примитивизации марксизма. Почему Марксу не повезло с последователями? Прежде всего, кажется, потому, что он искал их среди рабочего класса. Те немногие, кто не происходил из рабочей среды, к сожалению, не имели фундаментального экономического образования. Любой отход от строго экономического объективизма воспринимался не только академическими учеными, но и социал-демократическими теоретиками, как отступление от исторического материализма, отказ от основных заветов марксизма. Механистическое исследование материализма при изучении социально-экономических явлений, ориентация на изучение истории как естественноисторического процесса привело к недооценке социальной практики и ее роли в трансформации и развитии общества. Понимание истории как результата человеческой деятельности осталось в тени. Это характерно не только для Карла Каутского, но и в некоторой степени для крупнейшего философа среди социал-демократов – Плеханова.

Распространение марксизма «вширь» произошло в гораздо большей степени, чем это было разрешено существующими экономическими, социальными и культурными условиями стран Восточной Европы. Но сама же российская реальность стала тормозом для распространения марксизма в России «вглубь», для его развития в интегрированной и адекватной первичной форме. Наконец, мы анализируем причины повышенного интереса к научному марксизму в последние годы.

Ключевые слова: материалистическая концепция истории; «народный» (вульгарный) марксизм; «академический» марксизм.

1. THE BELATED DISCOVERY OF MARX

At the funeral of Karl Marx on Saturday, March 17, 1883, at Highgate Cemetery was attended only by 11 people. His friend and colleague, Friedrich Engels, uttered the phrase, which then might seem an overestimation, “And his name, and his work will survive the century” (Marx & Engels, Vol. 19, p. 352). Friedrich Engels in a speech at the funeral of Marx as his biggest achievement highlights two discoveries: the materialist conception of history and the law of motion of modern capitalist mode of production — the production of surplus value (Marx & Engels, Vol. 19, p. 350–351).

Indeed, to his contemporaries Marx was known only by those works that were published in very limited editions. The influence of Marx’s writings on his contemporaries was quite modest. More than three-quarters of Marx’s works were not published during his lifetime. But the fact, that the main works were published in different countries and in different languages. His publications in the New York Tribune were focused on current events, polemical works such as “The Holy Family” (1845) and “Poverty of Philosophy” (1847), and were known only to a narrow circle of friends. “Contribution to the Critique of Political Economy” (1859) and “Capital” (1867) at that time were not yet understood by contemporaries and ignored by the official academic science. The second and third volumes of “Capital” was published by Frederick Engels after Marx’s death (in 1885 and in 1894), the fourth volume — by Karl Kautsky in 1905–1910. However, the final volume was leaked to the public until after his secondary publication by the Institute of Marx, Engels and Lenin in 1954–1961.

The revolutionary “Theses on Feuerbach” (1845) appeared only as a supplement to the Engels’ work “Ludwig Feuerbach and the End of German Classical Philosophy” in 1888; “Outline of a response to a letter Zasulich”—in 1924; “Economic and Philosophical Manuscripts of 1844”—in 1932; “The German Ideology” (1845) —in 1932–33; “Chapter Six. The results of the direct process of production”—in 1933; “Economic Manuscripts 1857–1859”—in the original language in 1939–1941, and in Russian translation in 1968–1969; “Economic manuscript of 1861–1863” (Notebook IV, XV–XXIII)—in 1973–1980; the first and third chapters of the second version of “Capital” Volume II — in 1981, etc. Non-systemic perception of the Marx’s economic heritage, its absolutized status in different periods of development of separately

published works, their analysis in isolation from the other Marx’s writings — led to the famous simplification and vulgarization of Marxism’s founder views in the Social-Democratic literature of the late XIX–early XX century, as well as in Soviet economic literature in the years 1920–1980.

Published works lasted for 100 years, and understanding only started at the end of the socialist period (Ilyenkov, 1960; Rosental’, 1967; Vazyulin, 1968; Rosental’, 1971; Kuz’min, 1976). For a long time was not the main thing: remove the sacredness with the works of Marx, understanding it not as a prophet but as a living person, as a developing scientist. The first steps in this direction in our country have been made only in the years 1970–1980 (Vygodskiy, 1970; Vygodskiy, 1975; Shkredov, 1973; Bagaturia & Vygodskiy, 1976; Kogan, 1983; Smirnov, 1984; *Pervonachal’nyi*, 1987; Cherkovets, 1988–1989). However, in the mid-1980s in Russia has already begun restructuring and the crisis of Marxist ideology drew away the creative findings of a new generation of Marxists. Creative Marxism began to seem less important than what has been done in the Western economic science for a hundred years after Marx’s death. Meanwhile, the influence of Marx on the Western economic science was, to the surprise of the Soviet people, more than modest. This was partly to blame, and Marx himself.

2. THE REASONS FOR REJECTION OF THE MARX’S TEACHINGS BY WESTERN ACADEMIC ECONOMICS

Karl Marx believed that the best in the first volume of “Capital” was presented the dual character of labour and analysis of surplus value regardless of the specific forms of its manifestation: profit, interest and ground rent (Marx & Engels, Vol. 31, p. 277). What appeared to be the main for Marx, was not so impressive for his contemporaries. Why did it happen?

In opposition to the first volume of “Capital” Western Economic Community is not surprising and it is difficult to find (after Marx), a conspiracy of silence. Rare academic writings receive worldwide fame immediately at the time of publication. To do this, in any case, requires certain assumptions, which in this case entirely absent. Marx never taught in any more or less well-known university. His doctoral thesis, he got quite a long time ago (in 1841) at the University of Jena, known for the fact that the school give quickly and without controversy reviews

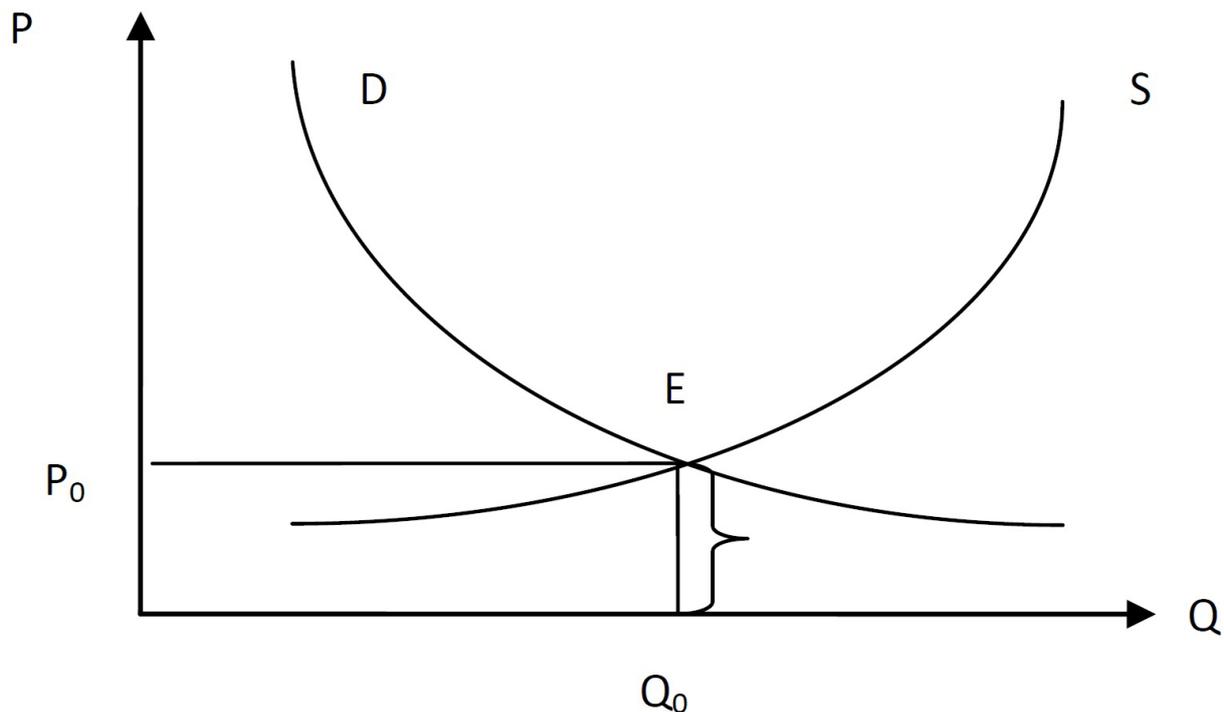


Fig. 1. Value as the basis of the price level (according to Marx). The interpretation from the perspective of neoclassical economists

on doctoral dissertation. In any case, Marx received his Ph.D. after 9 days after dispatched his thesis (Wheen, 2003). Public protection (as in the Soviet Union) or wide debates (as in medieval universities), of course, was not, also Marx didn't have teaching experience in top schools. Even this simple fact is easily explained the delay in the dissemination of his ideas. In addition, the product works strife: "The Communist Manifesto" can be read in one night. But with the Marx's "Capital" implement such an operation is difficult¹. It takes time, desire, and most importantly — a certain level of training. And the training is quite serious — as a special (to be acquainted, at least, the German classical philosophy and English and French classical political economy) and total (must be at least a university education in the humanities, which is unlikely to be found among the then working class). Recall that as a great achievement in the middle of the XIX century was seen by the introduction of compulsory primary education in the UK. And England in this respect is well ahead of the continent. The lack of interest explains the paradoxical fact that the English language is the 1st volume of "Capital" will translate only 20 years later, in 1887.

¹ "And myself stroking the neck — told himself S.A. Esenin, — I say — our time has come: let's, Sergey, sit down for Marx quietly for solving the wisdom of boring lines."

Yet the question of proletarian origin was exaggerated importance in the XIX and XX century. Marx resigned as chairman of the General Council of the I International on the grounds that it is not representative of the working class². It is curious that this tradition continues well: in the Soviet Union until the mid-80s. Of the twentieth century in the departments of political economy of universities there were significant advantage people with manufacturing experience, not those who had completed school education in current year.

We should not forget the fact that the peak of popularity of the labour theory of value (at least in its Ricardian interpretation) in an academic environment for a long time has passed in the 70–90-es. XIX century beginning to be more common theory of marginal utility. Although the first steps in this area have been made much earlier (A. Cournot in 1838 and H. Gossen in 1854), but only 1870 was marked qualitative change in this area: in 1871 have published William Stanley Jevons (1835–1882) and Carl Menger (1840–1921),

² Marx believed himself ineligible for election to the post of Chairman of the General Council of the International "because he is an employee of mental work, not those who are working hands." While not denying the obvious fact that the General Council International can work and people of non-proletarian origin.

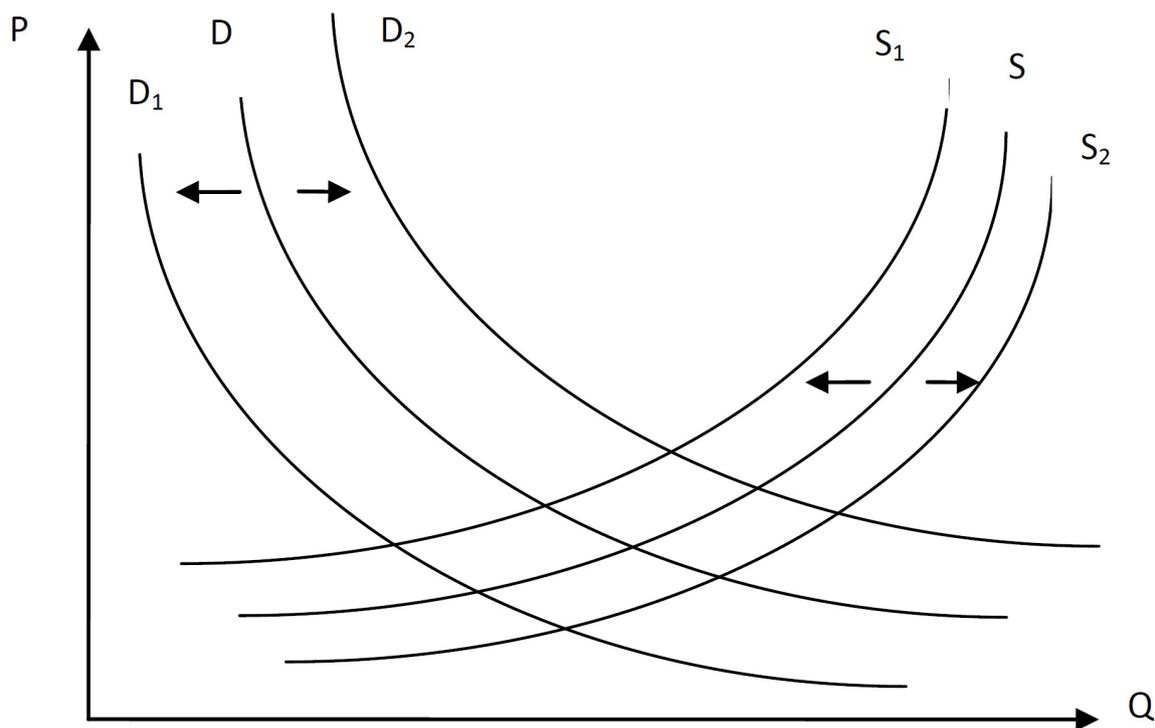


Fig. 2. The subject of research neoclassicism – the relative price changes

in 1874—Leon Walras (1834–1910). Later, there were works Eugen Böhm-Bawerk (1851–1914) and Friedrich von Wieser (1851–1926). The theory of marginal utility is complemented in 1886 by the marginal productivity theory of John Bates Clark (1847–1938). In fact, all these changes are of course did not find any reflection in subsequent editions and translations of the first volume of “Capital”, prepared by Marx (1872 and 1875) and Engels (1883, 1886 and 1890). In fact, the changes were crucial character: instead of political economy as a philosophy of economics there is another science — economics, serving as a set of practical recipes to optimize the activity of economic agents in resource-limited settings. Although technically the term ‘Economics’ will appear in 1871 in the “Theory of Political Economy” by W. Jevons, its widespread and contemporary content refers to a later period: in 1880–1890-es.

Shifting the center of economic research. If the focus of the classics of English political economy was the sphere of production (Adam Smith) and distribution (Ricardo), the constructions of new economists increasingly important sphere of exchange and consumption. Change and the scale of consideration: in the center is not a state, and the firm and the individual. The microeconomic framework for the analysis of market structures

displace macroeconomic scale political economy. Changes and micro-economic foundations of the analysis itself. If the focus of Adam Smith and David Ricardo was the law of value, that of John Stuart Mill, this role is played by the law of supply and demand, and at the Menger, Jevons, and William L. Walras — the law of diminishing utility. Change not only the purpose and object of study, but also the method of analysis. In place of formal and dialectical logic is gradually coming mathematical logic. The focus of research is comparative statics, optimization and equilibrium models. These changes are summarized Alfred Marshall (1842–1924) in his “Principles of Economics” (1890).

Not surprisingly, in these circumstances, the intricate construction of Karl Marx’s dialectic was no demand. From the standpoint of what was then the science they seemed more to the past than in the future, more theoretical than practical. Being cut off from the modern academic science, its newest search and discovery, it is in the silence of the library of the British Museum was interested in secular trends in the development of political economy, in terms of which new ideas seemed a vulgarization of the classical foundations. If Marx was interested in the cost as the basis of market prices and the entire first volume of “Capital” is premised on matching price value, then it is much

more interested in the contemporary cases of deviation of prices from values. If the focus of Marx is perfect competition, then the focus of neoclassical — market structures that grow out of this perfect competition: pure and natural monopoly, monopolistic competition and price discrimination, oligopoly and monopsony.

To oversimplify, clarify this with an intuitive graphical example. In modern language of economics, Marx mainly interested in the absolute equilibrium level (see **Fig. 1**): why pies are sold for 10 roubles, and modern cars for hundreds of thousands. The focus of economists — is neoclassical, on the contrary, the relative change in prices. With respect to perfect competition means shifts demand and supply curves (see **Fig. 2**). However, the current economy is, of course, is not limited to the analysis of perfect competition, and explores all types of market structures (and not only in relation to the markets of consumer goods and services, but also to the markets of resources).

3. THREE MYSTERIES OF THE MATERIALIST CONCEPTION OF HISTORY

“In general,— Karl Marx wrote in the Preface to “A Contribution to the Critique of Political Economy”—Asiatic, ancient, feudal and modern bourgeois modes of production South designated as progressive epochs in the economic formation of society” (Marx & Engels, Vol. 13, p. 7).

Attention is drawn to the fact that in this classic work of world history periodization given in— completely incomprehensible, at first glance, the form. Firstly, it is unclear why the four modes of production correspond to only one formation, and secondly, why she named this formation as something strange: no socio—economic, social and economic (the word ‘economic’ somehow put in the first place). Third, the unknown is itself a list of modes of production: the primitive no, nor communist system, but indicated some Asiatic mode of production, and the slave system called antique.

The first answer that one is tempted to is that the translation of this phrase from German made incorrectly, inaccurate, untrue. However, if we look at the original (Marx, 1939, p. 338), and learn the history of the translation of this place, it is easy to see that this is not so. Translations of this place in the second edition of the works of Marx and Engels made ... Lenin, more precisely, given in the same

form in which it did Lenin for his work “Karl Marx”⁵. Therefore, the problem is not in the form of transfer, and the content of the phrase. Try to answer the questions posed in order.

1. The fact that, along with the now common use of the term ‘socio-economic, formation’ in the sense of a certain stage in the progressive development of human society arising on the basis of certain social mode of production, and therefore characterized by a certain level of development of the productive forces, a certain type of production relations and towering above them in the form of an add—historically certain public institutions, ideas, and forms of social consciousness; along with the use of the concept of ‘socio—economic system’ is found in Marx and the use of this concept in other, more broadly — as a group of formations that are similar in type of production relations, the nature of class division, nature of the state, forms of social consciousness. Thus, Marx in a number of papers brings together all the information in one class.

In the preface to the work “A Contribution to the Critique of Political Economy”, in which Marx gave a detailed description of the materialist conception of history, the concept of ‘formation’ have consumed in a double sense. “In general,—wrote Marx — Asiatic, ancient, feudal and modern bourgeois modes of production can be designated as progressive epochs in the economic formation of society. The bourgeois relations of production are the last antagonistic form of the social process of production ... developing in the womb of bourgeois the productive forces of society create also the material conditions for the solution of this antagonism. Therefore, social formation is completed prehistory of human society” (Marx & Engels, Vol. 13, pp. 7–8). From the context it is clear that in the first case, the concept of formation includes all antagonistic modes of production so Marx did not write any of tribal or of communist forms of property, which appeared in “The German Ideology”, in the second — only one bourgeois. This does not deny the relationship that exists between the concepts of ‘mode of production’ and ‘formation’, but only emphasizes that the antagonistic formations have several features in common.

⁵ Lenin V.I. Collected works 5th ed. Vol. 26, p. 57. Characteristically, the translation of this phrase in such a concise and refined form VI Lenin did not come immediately. Initially, he gave another translation (Lenin V.I., Vol. 1, p. IX), from which in his later work, he refused.

The use of the concept of 'formation' in the broadest sense is typical for "Sketches response to a letter V.I. Zasluch" where Marx uses the concept of 'primary (archaic) formation' and 'secondary formation'. "Farming communities,—Marx writes in the third sketch an answer to a letter V.I. Zasluch — being the last phase of the primary social formation, is at the same time, the transition to the secondary phase formation, i.e. the transition from a society, based on common ownership, to a society based on private property. The secondary formation covers, of course, a number of societies based on slavery and serfdom" (Marx & Engels, Vol. 19, p. 419). In the second sketch Marx observed that capitalism is also based on private property that "the people who have it (the capitalist mode of production — R.N.) Is the most developed, both in Europe and in America, seek only to ensure that break the shackles of his replacing capitalist production cooperative production and capitalist property — the highest form of archaic type of property that is owned by the Communist" (Marx & Engels, Vol. 19, pp. 412–413).

The history of mankind is divided into three Marx's 'big' formation: primary, based on common ownership (the primitive communal system I 'Asiatic mode of production' as a transitional stage to the secondary formation), secondary, based on private property (slavery, feudalism and capitalism) and the communist — social formation (Boroday, Kelle, & Plimak, 1974, pp. 61–75).

2. The key to solving the second problem, the well known position of Engels on the two sides of the production and reproduction of immediate life formulated them in the Preface to the first edition of "The Origin of the Family, Private Property and the State". "According to the materialist conception,—wrote F. Engels — a defining moment in history is ultimately the production and reproduction of immediate life. But it itself, again, is of two kinds. On the one hand, the production of the means of life: food, clothing, housing, I tools necessary for that; on the other — the production of human procreation. Public order, in which people live a particular historical epoch and a particular country are determined by both kinds of production: stage of development, on the one hand — labour, on the other — the family. The less developed work than the limited numbers of its products, and consequently the wealth of society, the stronger the dependence of the social system of tribal relations. Meanwhile, as part of this, based on the generic structure—society increasingly more

developing productivity, and along with it — private property and exchange, differences of wealth, opportunity to use someone else's labour force and thus the basis of class antagonisms...

The old society, resting on tribal associations, explodes in a collision newly formed social classes; its place a new society organized in the state, the lower part of which was no longer tribal, and territorial associations — a society in which family structure completely dominated by the property and which is now free to deploy the class contradictions and class struggle, is the content of the whole of recorded history up to the present time" (Marx & Engels, Vol. 21, pp. 25–26)⁴.

In light of the statements of Engels on the two sides of the production and reproduction of immediate life becomes clear and the second part of the problem why the secondary (antagonistic) formation is named in the Preface "...to the Critique of Political Economy", 'economic community'. As part of the initial formation played an important role of material, social, but not purely economic factors (production of human procreation). As a result of labour within the tribal relations were created preconditions for a class society, for a radical change in the ratio of two sides of the production and reproduction of immediate life when family completely dominated by the system of private property.

Marx proceeded from the fact that the transition to communist social formation should also be considered in light of the ratio of the two sides of the production and reproduction of immediate life. After all, the main purpose of this formation and the primary means of achieving it, on presentation of Marx, is the all-round development of personality, which, although it achieve full material well-being, but cannot be reduced only to him.

3. Answering the first question, we essentially got a significant part of the answer to the third: in the above-cited site Preface "...to the Critique of Political Economy", Marx indicates only antagonistic modes of production. Views on the initial — primitive — production method specified in the 70–60-es. XIX century through research of J. Bachofen, A. Gaktsgauzen, M. Kovalevsky, L. Morgan and others. The concept of 'Asiatic mode of production' means a state system of rural agricultural total. The term 'Asian' in this context has never had a strictly regional importance and served to designate a universal stage of human

⁴ A detailed analysis of this provision, see (Nureev, 1984, p. 5).

development. Marx refers to the Asiatic mode of production is not only ancient and medieval East (India, Turkey, Persia, China, etc.), but also countries in Africa (Egypt), the Americas (Mexico, Peru), Europe (the Etruscans, and others). On a certain stage of their development (Ter-Akopian, 1973, pp. 167–220; Nureev, 1976, pp. 205–233; Platonov, 1978, pp. 259–270). Therefore, the term ‘Asian’ is a kind of irrational categories: designating part, he at the same time characterizes the whole. Application along with a meaningful term (‘state system of rural communities’), conditional (‘Asiatic mode of production’) is widespread in science. We have long operate such concepts paired hours as antiquity — slave mode of production, the Middle Ages — feudalism, the new time — capitalism recent times — socialism — the first phase of the communist formation. The specificity here is not that Marx and Engels used the two terms (‘the system of rural communities’ and ‘Asiatic mode of production’), and that the inclusive term is not opposed to the term time and space, geographical. The origin of this term is explained, apparently, by the fact that in today’s Marx and Engels East they found the remains of these public-communal forms.

Used by the classics of Marxism, the term ‘antique mode of production’ means the slave mode of production. It should be remembered, however, that under the slave system were slaves although important, is not the only element of a complex socio-economic structure of ancient societies. Division into slaves and slaveholders never covered the whole of society; the number of slaves was never more than half of the population, even in the most developed slaveholding states. Therefore, the term ‘antique mode of production’ as used by Marx and Engels, is of some importance from the point of view of modern science (Nureev, 1979, pp. 22–55).

4. ‘PEOPLE’S’ (VULGARIZED) MARXISM AND THE DEVELOPMENT OF MARXISM IN BREADTH

In a number of countries (and Russia in this case is no exception) primarily occurs mainly spread of Marxism in breadth. As for the spread of Marxist ideas in depth, it is not only in Russia but also in most of the gains was modest. This is due, above all, the intellectual level of students and followers of Karl Marx, as well as uncompromising attitude of the founder of scientific communism to his opponents. “By his political enemies — wrote Tugan-Baranovsky — Marx was ruthless, but his enemy

was made easy — it was not enough to be his follower. One of the saddest pages of biographies of the great economist is its relationship to various prominent people with whom his fate was pushing and with whom he differed in their views. All polemical clashes Marx distinguished extraordinary abundance of personal malice of the enemy and produce a painful impression with his lack of moral tact. It is difficult to specify such other masters in the destruction of the enemy by expressing his most scathing contempt, and it is difficult to specify another writer, albeit a tool to move so often and so readily” (Tugan-Baranovsky, 1996, p. 203).

Why did Marx not ‘lucky’ with the followers? Perhaps, above all, because he was looking for them among the working class. “... For the millions of human hearts Marx’s theory of socialist paradise earth meant a new ray of light and a new sense of life. — wrote J.A. Schumpeter — It does not matter that almost all of these millions were not in a position to understand and evaluate the teaching in its true meaning. Such is the fate of all doctrines” (Schumpeter, 1995, p. 37).

The few that did not come from the working environment, unfortunately, did not have the fundamental economics. It is no secret that even having studied all his life Engels never received a university education. As rightly observed by J.A. Schumpeter, “intellectually and in particular as a theorist, he was well below Marx. You cannot even be sure that he has always understood the meaning of his teachings. So its interpretation should be approached with caution” (Schumpeter, 1995, p. 78).

Even further in the characterization of Engels are Jean-Marie Albertini and Ahmed Sliema. “Friend, colleague, philanthropist, Marx was the first of its vulgarizer. Engels ... could indicate simplify, clarify and to avoid what he thought too controversial. In the last period of Marx’s life, almost reclusive, was his mouthpiece. In general, he carried out a reformulation which allowed to spread Marxism” (Albertini & Silem, 1996, p. 104).

As for the ‘in-law’ of Karl Marx, he is, in his opinion, they clearly had no luck. Charles Longuet (1839–1903) he calls “the last Proudhonist” and Paul Lafargue (1842–1911) — “the last Blanquist”. Even stands out for its well-read Karl Kautsky (1854–1938) seemed to Marx first ‘shallow mediocrity’.

However, the impact of popularisers and vulgar underestimated. They have contributed to the spread of folk Marxism, which is a unique social

phenomenon, comparable only to that of the spread of world religions? It is no accident the initial task was the first popularizers of systematization of Marxism. In 1893, an article by F. Mehring (1846–1919) “Historical Materialism” in 1895 book by G. Plekhanov (1856–1938), “The Development of the Monist View of History”, in 1896—the work of A. Labriola (1843–1904) “Sketches of the materialist conception of history”. All of them came from the more economically depressed areas of southern or eastern Europe. All of them corresponded with Engels, who had a decisive influence on the formation of their Marxist views.

The work of Engels’ “The Origin of the Family, Private Property and the State” had a great impact on the social-democratic literature. Engels’ ideas are reflected in the book by P. Lafargue, “Property and its origin” (1895), a monograph of Rosa Luxemburg (1870–1919), “Introduction to Political Economy” (written in 1907–1913 and published in 1925) and other works. The authors of these monographs have focused their attention mainly on the justification of materialism in the study of relations and historically transient nature of private property. In this case, property was considered, as a rule, not through a system of industrial relations (as in “Capital” Marx), and was treated as a separate relationship (ownership of the items for personal use, ownership of the means of production, ownership of capital) (Lafargue, 1959, pp. 39–45).

In promoting the views of Karl Marx, Paul Lafargue and F. Mehring — rightly observes B.A. Chagin — mainly stay on the justification of the thesis according to the political and ideological superstructure of society in its economic base. Paul Lafargue, in this regard, even spoke of the materialist conception of history as an ‘economic materialism’. In this regard, and for Mehring was characteristic known straightness, as indicated by Engels after reading Mehring’s “Legends of Lessing” (Chagin, 1977, p. 16).

Any departure from narrow economic objectivism perceived not only academic researchers, but also social democratic theorists as a departure from the historical materialism, the rejection of the basic precepts of Marxism. An illustrative example — the criticism of the provisions of Engels on the two sides of the production and reproduction of immediate life (production of the means of life and production of human beings), the nature of their relationship in the early stages of development of human society (Marx & Engels, Vol. 21, pp. 25–26), historians and

sociologists P. Veisengrun (Germany), N. Kareev and Mikhailovsky (Russian Empire), and later the German Social-Democrats Karl Kautsky and G. Kunov found this remark of Engels forced concession, a departure from the materialism, made under the influence of the book L. G. Morgan (Veisengrun, 1898, p. 170; Kareev, 1894, p. 601; Mikhailovsky, 1894, pp. 108–109; Kautsky, 1923, p. 119; Kunov, 1930, pp. 121–124). “The production people — taught K. Kautsky Engels — a factor not a production of the means of subsistence, and depending on it” (Kautsky, 1923, p. 119). In the 40s of XX century. This criticism has been moved to the Marxist literature (Svetlov, 1940, p. 58).

The mechanistic rationale for materialism in cognition the socio-economic phenomena, the emphasis on the study of history as a natural historical process have led to an underestimation of social practice and its role in the transformation and development of society. Understanding of history as a result of human activity was in the shade. This is typical not only for Kautsky, but also to some extent for the largest among the Social Democrats philosopher — G. V. Plekhanov.

Describing the materialist conception of history, G. V. Plekhanov always tried to find the ultimate cause of social development. “If we wanted to briefly express the opinion of Marx and Engels on the attitude of the now famous ‘base’ to the equally famous ‘superstructure’ — wrote Plekhanov — then we have got to this:

- 1) the state of the productive forces;
- 2) due to their economic relations;
- 3) the socio-political system, which has grown pas this economic ‘basis’;
- 4) defines the part of the economy itself, but part of growing up over the past her socio-political structure of the psyche of public rights;
- 5) different ideologies, reflecting the properties of the mind (Plekhanov, 1956–1958, Vol. 3, pp. 179–180).

Plekhanov’s formula materialistic, but this is not enough dialectical materialism. And it is not even a single unclear (state of the productive forces, etc.). The fact is that not shown the dialectic relationship of the productive forces and relations of production, base and superstructure, the role of the class struggle, is not reflected legal institutions unilaterally presented forms of social consciousness. It is not surprising that the wording of this brief gone to such fundamental concepts of Marxism as a way of production and socio-economic system. Failure to

understand the relationship of mutually productive forces and relations of production are put in front of G. Plekhanov question because of the termination of the productive forces. He found such a fundamental principle in the geographic environment. Of course, Plekhanov was far from the geographic determinism and knew that “the geographical environment influences people through the public” and that “the geographical environment very different effect on the Germans of Caesar, than it is to affect the present inhabitants of England.” Nevertheless, he believed that “the development of productive forces is itself determined by the properties of the geographical environment surrounding people” (Plekhanov, 1956–1958, Vol. 1, p. 689).

It is thanks to Plekhanov look at the tools as the defining moment of the productive forces was widespread. Including in the productive forces of the subject of work, it highlights the importance of tools. “That is why, he writes, or rather will not talk about the development of tools, and in general about the development of the means of production, the productive forces, although it is certain that the most important role in this development belongs, or at least owned up to now (before the important chemical industries) is the instruments of labour” (Plekhanov, 1956–1958, Vol. 1, p. 609). Absolute role of the means of production objectively contributed to an underestimation of workers as the main productive forces.

Against objectivist interpretation of Marxism and its reduction to economic materialism made A. Bogdanov (1873–1929). Unlike Plekhanov central concept of the philosophy of Marxism A. Bogdanov believed the practice, activity and living labour (Bogdanov, 1913, pp. 197–198). Sharing the views of A. Bogdanov, A. Lunacharsky (1878–1933) believed that his philosophy — a return to the “real non vulgarized, non Plekhanovized Marx” (Quoted by Pustarnakov, 1974, p. 260).

Curiously however, that the second generation of Marxists came from Eastern and Central Europe. It is been more prepared Marxists who wrote his major work before the First World War. Practically, this generation was to play a decisive role in leading the national working parties. These people were not armchair scientists. It was a generation that sought to unite the Marxist theory with the practice of the labour movement. They needed a theory to justify the action. Many of them are in their own interpreted the teachings of Marx, Rudolf Hilferding

(1877–1941), Jean Jaurès (1859–1914), Otto Bauer (1881–1938), Vladimir Ulyanov (Lenin, 1870–1924), Lev Bronstein (Trotsky, 1879–1940), Nikolai Bukharin (1888–1938). And thanks to their work, millions of people have taken the analysis of reality, directly or indirectly arising out of Marxism. It has become one of the most important factors behind the development of Marxism in the twentieth century. In the early twentieth century, there are works that try to develop Marxism in the ‘industry’ (Kautsky’s work on the agrarian or O. Bauer, the national question),—or ‘national’ (Lenin) direction. In the second decade, and there are more complex works that try to reflect the new phenomena of capitalism. This is the first work on imperialism, “Finance capital” R. Hilferding (1910), “The accumulation of capital” Rosa Luxemburg (1913), “Imperialism and world economy” N. Bukharin (1915), “Imperialism, the highest stage capitalism” by V.I. Lenin (1917). Despite obvious progress in this area, they were not a direct continuation of “Capital” of Marx. They did not develop a system of categories and laws of “Capital”, as supplemented or elaborated on some trends noted by Marx and, unfortunately, were far below the level. The fact is that neither George Plekhanov, nor Karl Kautsky, or even Vladimir Lenin did not understand the dialectics of Karl Marx’s “Capital”. This is clearly seen in their work: “Our Differences” (1885) G. Plekhanov, “The Agrarian Question” (1899) by K. Kautsky, “The Development of Capitalism in Russia” (1899) by Vladimir Lenin (for details see Nureev, 1999, pp. 87–112) and “The Accumulation of Capital” (1913), R. Luxemburg. No wonder that in 1914 Lenin writes that «one cannot quite understand the “Capital” of Marx, and I especially his head, without having thoroughly studied and understood the whole of Hegel’s Logic. Consequently, none of the Marxists understood “Capital” Marx half later!” (Lenin, Vol. 29, p. 162).

Of course, Marx was not to blame for the fact that his students have written, but they developed a tradition of Marxist activism and voluntarism. After all, this is Marx believed that it is not only to explain the world, but to change it, to “expropriate the expropriators” (Marx & Engels, Vol. 3, p. 4 and Vol. 23, p. 773). Of this revolutionary activism grew and theory of constant revolution of Leon Trotsky, and the dictatorship of the proletariat in the interpretation of Vladimir Ilyich Lenin, and economic voluntarism Eugene A. Preobrazhensky (1886–1937), and the practice of building socialism in one country

Josef Vissarionovich Dzhugashvili (Stalin, 1879–1953) and the cultural Revolution of Mao Tse-tung (1893–1976) and many other ultra-revolutionary concept. Rather schematic development vulgarized Marxism associated with the preparation and justification of the revolutionary transformation of the world can be represented as follows (see Fig. 3).

5. 'ACADEMIC' (WEST) MARXISM OR THE MARXISM DEVELOPMENT IN DEEP

Friedrich Engels in a speech at the funeral of Marx as his biggest achievement highlights two discoveries: the materialist conception of history and the law of motion of modern capitalist mode of production — the production of surplus value (Marx & Engels, Vol. 19, pp. 350–351). Regarding the surplus value we have seen in the second section. This theory has not made much of an impression on Western economic science — in the XIX — the first half of the twentieth century. But maybe things have changed over the years?

Increased interest in whether the economic teachings of Marx in the academic neoclassical science developed countries in the late twentieth century? Rather no than yes. He was on the periphery of mainstream economic thought that went the other way. The development of the Marxist analysis of capitalism has certain achievements associated with the specification and further development of the theory of capital accumulation — the study of the economic cycles of overproduction, the theory of imperialism, globalization of the economy and to arise in this context, the problems of relations between the center and the periphery (Fig. 4).

A completely different situation occurred with the first discovery of Marx. The interest in it over the years increases rather than fall. New generations of Marxists: György Lukacs (1885–1971), Karl Korsch (1886–1961), Antonio Gramsci (1881–1937), Walter Benjamin (1892–1940), Max Horkheimer (1895–1973), G. Cases Volpe (1897–1968), Herbert Marcuse (1898–1979), Henri Lefebvre (1905–1991), Theodor Adorno (1903–1969), Louis Althusser (1918–1990)—have created a very different intellectual environment for the development of Marxism. Since the early 20-es of European Marxism increasingly shifting to the West in Germany, France and Italy. Although the first generation of Marxists (G. Lukacs, K. Korsch and A. Gramsci) were originally the ma-

ior political leaders of their parties, they gradually moved away from practical affairs, concentrating on issues of theory. This is even more characteristic of the younger generation. Being unique personalities, they could not put their creativity into the Procrustean bed of the Communist International. In the 20's the first time there is a center of Marxist studies in a capitalist country — the Institute for Social Research in Frankfurt, who has maintained regular contacts with the Marx-Engels in Moscow. The result of this collaboration was the first publication of the Marks-Engels Gesamtausgabe (MEGA). The first volume was published in Frankfurt in 1927.

After the Nazis came to power in 1933, the Institute of Social Studies moved to the United States and developed in the framework of Columbia University in New York, and after the war returns to Frankfurt (in 1949–50.). The activities of this Institute were aimed at depoliticizing the theoretical studies of the theory of separation actually contributed to the deepening of the policy of the Marxist analysis. However, the focus of research of Western Marxists was not economic and philosophical issues. Marx was a philosopher among economists economist among philosophers. It is curious that the first component of his work (philosophy) was deeper and more interesting for the children than the second (the economy). “Ironically, Western Marxism as a whole has developed in the opposite direction of the evolution of Marx. If the founder of historical materialism gradually went from philosophy to politics and then to the economy as a major field of study, the followers of the schools that emerged after 1920 were more likely to move away from the economy and politics, and focus on the philosophy, practically doing what is particularly Marx was interested in at the time of maturity ...” (Anderson, 1991, pp. 64–65).

After the burst of radical leftist sentiment in the late 1960s, a new interest in the unorthodox Marxism among the alternative mainstream trends (Rait, 2007). The fact that, at first glance, it was in the shade, it gradually became interesting, however, is generally more philosophers, sociologists, historians, political scientists and other representatives of related disciplines than economists.

Methodologists “Capital” interested as the first successful experience of the dialectic to political economy. The new principles of organizing categories are interesting to future generations. It was interesting all: the formal logic as a prerequisite

and the moment of the dialectic, and the method of ascent from the abstract to the concrete in “Capital” of Marx, and the role of antinomies in the learning process and their reflection in the economic system, and “Capital” as an open system of knowledge.

Historians of thought “Capital” has always attracted both criticism of political economy as a model of respect for the history of economic thought as a model of scrupulous use of sources as an attempt to write the history of political economy, following the pattern of the Hegel’s “History of Philosophy” (that is how the story of the market economy, ‘taken as a necessity’, as history, replicating in the development of the subject.)

Sociologists have drawn the ideas of Marx’s basic forms of economic relations and the stages of development of the person: the dialectic interaction between nature and society, the unity of property and labor, and the relationship of the individual and the community in which Karl Marx distinguished the following stages of development: a personal relationship, personal independence, based on a material depends, free individual (for details, see Nureev, 1983)—the full development of each individual as a condition for the development of all, the concept of all-round development of the individual (‘beyond the material production’) as a prerequisite and an element of modern post-industrial society⁵.

For specialists in economic history and comparative linguistics is of great interest method unity of the historical and logical, interconnection feasibility and socio-economic analysis, the dialectic of productive forces and relations of production⁶, formational and civilizational unity of approaches history as a process of natural history, and as a result of human activities, thus more political economy in the broad than in the narrow sense of the word⁷.

⁵ In this context, it is difficult to agree with Tugan-Baranovsky, that “in the history of philosophy for our Doctor of Philosophy is almost no place” (Tugan-Baranovsky, 1996, p. 203).

⁶ “Despite the fact that the history of technology and communication technology with the economic process is not written enough great literature, this issue is essentially remained outside the body of a theory. The exceptions are the works of Karl Marx, who tried to combine technological change with institutional changes. Development of Marx on the relationship of the productive forces (by which he usually knew the state of technology) to industrial relations (by which he meant the various aspects of human organization, and especially property rights) was a pioneering effort to connection limits and limitation of technology to the limits of limits of human organization” (North, 1997, p. 168).

⁷ “He was the first economist of high rank who has seen consistently and who taught others how economic theory can be

For institutionalists definite interest to a new approach to the analysis of economics and law, first implemented in full in “Capital”.

Marx actually acts as a precursor of institutionalism. It is a new approach to the analysis of the economic nature of private property, and the approach of a great classical political economy, and on the radical left critics of this type of property P.J. Proudhon. Of course, the Marxist theory and new institutional property rights have both unity and significant differences. But so far, it is of interest Realized by Marx analysis of alienation and fetishism in a market economy, and the commodification of persons personification of things.

Marx and undoubted contribution to the establishment of the theory of input-output balance. Of course, Marx here as a student of F. Quesnay. Curiously, his abstract and concrete theory of reproduction were more versatile than the schemes of Lenin, who did not stand the test of time and predetermined exaggerated development of the first units to the detriment of the latter. Not understood from the perspective of neoclassical equilibrium theory Marxist theory of economic crisis had a peculiar development in the theory of JA Schumpeter (1939).

Have any interest in Marx academic science in the developing countries? More yes than no. In a crisis, neoclassical economics at the periphery of the capitalist world postulates of rational behaviour, which are based on modern micro-and macroeconomics, barely functional. Here the obvious pros and cons of capitalism⁸ and it reflects the development of neoclassical economics. There are obvious problems of poverty and wealth is apparent static nature of modern Western science. From this more clearly visible flaws of modern economic and mathematical modelling, based on rational choice.

Marx interest wherever made to find alternatives to neo-classical. Not surprisingly Marxist influence on the young historical school (W. Sombart) and Austrian economics (E. Böhm-Bawerk), a traditional (T. Veblen, K. Polanyi, G. Myrdal) and the

turned into a historical analysis and a historical narrative can be turned into *histoire-raisonnee* (justification stories — in french)” (Schumpeter, 1995, pp. 83–84).

⁸ “We ... are suffering not only from the development of capitalist production, but also from a lack of development — Marx wrote in “Capital”. —Along with the disasters of the modern era oppresses us a number of inherited disasters that exist due to the fact that they still languish ancient, exhausted themselves modes of production and related antiquated social and political relations.” (Marx & Engels, Vol. 23, p. 9).

new institutionalism (Law and Economics), a new economic history (North, 1986; Rosenberg, 1974), and evolutionary economics (J.A. Schumpeter), Post-Keynesian economics (J. Robinson, P. Sraffa) and the radical leftist economics (P. Baran, A. Emmanuel Wallerstein).

Thus, the historical fate of Marxism were far been mixed. The extreme popularity of the theory, an

attempt to immediately and directly applicable in practice, unfortunately, played tricks on her and was not addressed for the benefit of mankind. Hopefully, the calm, the academic study of Marxism will at least partially rehabilitated in the eyes of his contemporaries and successors, and to use its potential to solve the problems that confronts the historical development of mankind.

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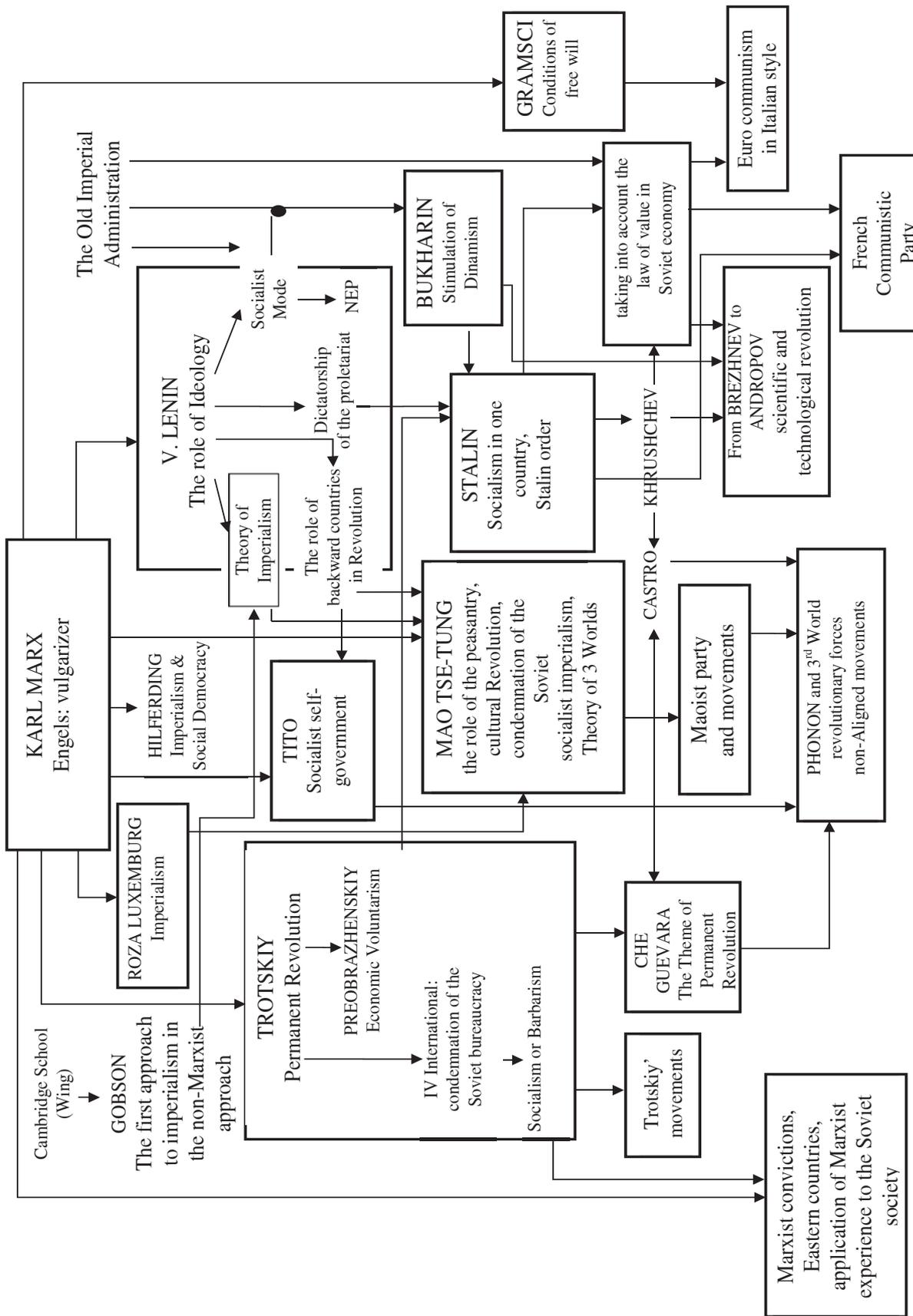


Fig. 3. The development of revolutionary activism and 'people's' Marxism

Source: Albertini, J.-M., Silem, A. (1983). *Comprendre les théories économiques*. Paris, France: Seuil, p. 114.

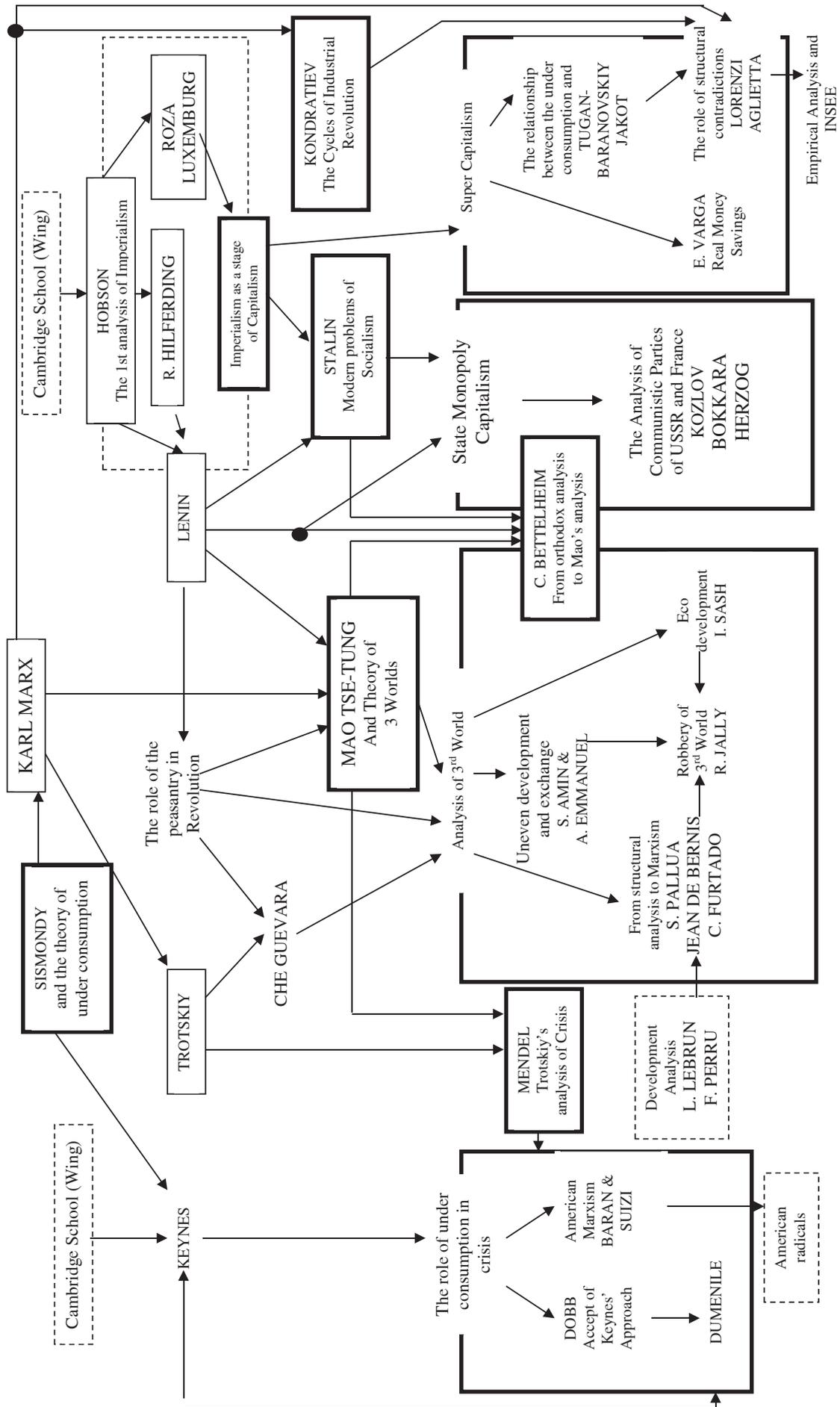


Fig. 4. Academic Marxism: development of capitalism analysis

Source: Albertini, J.-M., Silem, A. (1983). *Comprendre les théories économiques*. Paris, France: Seuil, p. 132.

Implementation of Multivariate Statistical Analysis for Warning Forecasting

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*“In the analysis of economic forms, moreover,
neither microscopes nor chemical reagents are of use.
The force of abstraction must replace both.”*

Karl Marx, 1867

Preface to the First German Edition of “Capital. A Critique of Political Economy”, Volume I

Abstract. Traditionally, for the purposes of forecasting socio-economic phenomena are used econometric methods (methods). Much less frequently for these purposes, we used the methods of multidimensional comparative analysis, including the Wrocław method of taxonomy. This methodology allows not only classifying the analyzed objects, such as countries or regions but also, taking into account time, to determine the trajectory of the actual development. By modeling the numerical values of variables one can determine a desired or optimal path of development. The third method of application of Wrocław taxonomy is a ranking of the studied objects about the level of development. The article presents the fundamentals of the Wrocław taxonomy and basic methodological issues that arise in its application.

Keywords: Wrocław taxonomy; classification; path of growth; inequality; multidimensional comparative analysis.

JEL C53,C55,C61

Применение многомерного статистического анализа для конструкции предупреждающих прогнозов

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Аннотация. Традиционно для целей прогнозирования социально-экономических явлений используются эконометрические методы (модели). Значительно реже для этих целей применялись методы многомерного сравнительного анализа, в том числе метод Вроцлавской таксономии. Эта методология позволяет не только классифицировать исследуемые объекты, например страны или регионы, но также, с учетом времени, определять траекторию фактического развития. Путем моделирования числовых значений переменных можно определить желаемую или оптимальную траекторию развития. Третьим способом применения Вроцлавской таксономии является ранжирование исследуемых объектов по уровню развития. В статье представлены основы Вроцлавской таксономии и основные методологические вопросы, возникающие при ее применении.

Ключевые слова: Вроцлавская таксономия; классификация; траектория роста; неравенство; многомерный сравнительный анализ.

JEL C53,C55,C61

INVOCATION

Michael Roberts, the first-class ‘red’ blogger, writes in his last post (<https://thenextrecession.wordpress.com/2017/11/27/neoliberalism-works-for-the-world/>):

“Marx was the first to note the tremendous boost to production that the capitalist mode of production delivered compared to previous modes. But as I have shown in previous posts, there is another side to capitalism’s early years: the immiseration of the working class.” And that is a different reality from neoliberal’s claims.

And he continued: “The *empirical evidence* supports Marx’s view that, under capitalism, **poverty** and **inequality** of income and wealth have not really improved under capitalism, neoliberal or otherwise. Any improvement in poverty levels globally, *however measured*, is mainly explained by in state-controlled China and any improvement in the quality and length of life comes from the application of science and knowledge through state spending on education, on sewage, clean water, disease prevention and protection, hospitals and better child development. These are things that do not come from capitalism but from the common weal.”

So, Marx’s prediction 150 years ago that capitalism would lead to greater concentration and centralization of wealth, in particular, the means of production and finance, has been borne out. Contrary to the optimism and apologia of mainstream economists, poverty for billions around the world remains the norm, with little sign of improvement, while inequality within the major capitalist economies increases as capital is accumulated and concentrated in ever smaller groups.

We would like to analyze the question what does it mean ‘*empirical evidence*’ and does it count ‘*however measured*’. It seems we ought to measure any economic and social phenomenon correctly. Isn’t it?

Because one cannot **rewind history** and replay events after making small controlled changes, causation can only be **inferred**, never exactly known.

DIAGNOSIS AND TREATMENT

The economy is a living organism. So, **the correct diagnosis is a *conditio sine qua non* of successful treatment**. That is, we ought to search **causal relationships** between **all** factors of social, political, and economic life of society.

But it is, of course, impossible. However, we must try to do it anyway. From the point of contemporary statistical techniques, it will be the cruel torture. Nevertheless, we have no choice.

The world of economy is really very complex. The difficulty of grouping or ordering (by similarity, for example) grows exponentially with the number of objects to be classified and the number of dimensions on which they are being grouped. Thus, for very large samples and many variables, some shorthand methods such as clustering algorithms or formulas need to be devised. Otherwise, we will be unable to see the forest for the trees. Moreover, there are so many varieties of the cluster and taxonomic analysis that the novice, not to mention the expert, risks bewilderment.

It is hard to find a definition of the term *complex phenomenon* in specialist literature. We can describe the *complex phenomenon* as an abstract construct depicting the qualitative state of directly immeasurable real objects, described by a number (more than one) of *diagnostic* variables. The diagnostic characteristics which describe the studied problem change under the influence of various factors, including the ones of random character, and moreover they remain in inter-relationships.

A problem is that if the number of dimensions is large, and the number of categories in each dimension is also large, the resulting typology or classification may contain a great many cells or types. For example, even if all dimensions are dichotomies, the formula for determining the number of cells is 2^m , where m is the number of dimensions. Thus, for five dichotomous dimensions the typology will contain only 2^5 or 32 cells, but for 12 dichotomous dimensions, the number of cells is 2^{12} or 4,096. If the dimensions are *polytomous* rather than *dichotomous*, as it is often the case in economic research, the number of cells expands much more rapidly. Because the number of types can be so large, researchers have often found it helpful to use partial or shorthand typologies. These can be formed either by constructing only a portion of the full typology or by first constructing the full typology and then selecting only certain types for use in the analysis (or by merging some types together). For example, if we wish to construct a typology from seven dichotomous variables, we may find it difficult to work with all of the 128 resulting types.

The question is **for what purpose** a classification is to be established. It means that a taxonomic system will reflect the purposes for which it is constructed. It is particularly important that the maker of a classification should have a clear idea of what he wants, and he/she should indicate what components are used as the basis for his classification.

Classification involves the ordering of cases in terms of their **similarity** and can be broken down into two essential approaches: **typology** and **taxonomy**. The former is primarily conceptual, the latter empirical. Construction of a typology requires conceptualization along at least two dimensions. **Taxonomy** begins empirically, rather than conceptually, with the goal of classifying cases according to their measured similarity on observed variables. The principal approach here is the implementation of **taxonomic** or **cluster analysis**. For example, **Ward's hierarchical clustering method** (a widely used agglomerative, objective, average linkage procedure) finds that the objects group themselves into several distinct clusters. Conceptually, what do these clusters represent? However, the cluster solution does not speak to the **conceptual meaning** of the clusters but instead confines itself to a demonstration of their empirical presence.

In its simplest form, **classification** is merely defined as the **ordering** or **grouping** of objects into groups or classes on the basis of their **similarity**. Statistically speaking, we generally seek to minimize within-group **variance**, while maximizing between-group variance. This means that we arrange a set of objects into groups so that each group is as **different** as possible from all other groups, but each group is internally as **homogeneous** as possible. By maximizing both within-group homogeneity and between-group heterogeneity, we make groups that are as **distinct** (non-overlapping) as possible, with all objects within a group being as alike as possible. These are general goals that specific classification techniques may alter somewhat.

However, classification is understood as the general process of grouping entities **by similarity**, unfortunately, similarity has no definite meaning in economics. Classification can either be unidimensional, being based solely on a single dimension or characteristic or multidimensional, being based on a number of dimensions. When

multidimensional, the dimensions are generally thought to be correlated or related. Unrelated dimensions generally would not be combined in a classification but could be. Dimensions are generally **categorical data**, such as **nominal** or **ordinal** variables. However, **interval** and **ratio** variables can be used as well. In economics quantified cluster and taxonomic methods can use variables of all levels — nominal, ordinal, interval, or ratio.

Two characteristics distinguish **typologies** from **generic classifications**. A typology is generally multidimensional and conceptual. Typologies generally are characterized by **labels** or **names** in their cells. The generic classification process is quite simple. The only basic rule is that the classes formed must be both **exhaustive** and **mutually exclusive**. This means that if N objects are to be classified, there must be an appropriate class for each (exhaustivity), but only one correct class for each, with no case being a member of two classes (mutual exclusivity). Thus, there must be one class (but only one) for each of the N objects.

As just defined, classification is both a **process** and an **end result**. We may thus speak both of the processes of classification and of a classification so formed. As an **end result**, taxonomy is similar to a typology, and in fact, many people use the two terms interchangeably. Here we will reserve the term taxonomy for a classification of **empirical** entities. The basic difference, then, is that a typology is conceptual while taxonomy is empirical. Exceptions to this generally involve the subsequent identification of empirical cases for conceptual typologies, but not the conceptualization of taxonomies.

A classification is no better than the dimensions or variables on which it is based. If you follow the rules of classification perfectly but classify on trivial dimensions, you will produce a trivial classification. One basic secret to successful classification, then, is the ability to ascertain the **key** or **fundamental characteristics** on which the classification is to be based. As a case in point, a classification that they have four legs or two legs may produce a four-legged group consisting of a giraffe, a dining-room table, and a dancing couple. Is this what we really want? So, it is crucial that the fundamental or defining characteristics of the phenomenon be identified. Unfortunately, there is no specific formula for identifying key characteristics, whether the task is theory construction,

classification, or statistical analysis. In all of these diverse cases, **prior knowledge** and **theoretical guidance** are required in order to make the right decisions. So, the **selection of diagnostic variables** is a first key issue in the diagnosis of economic health.

So, the first exercise is *data collection*. More difficult problems arise at this first stage than in any other subsequent analytical phases. The reliability of the data, their conceptual validity is the most difficult hurdles to clear. Conceptual invalidity and data unreliability are 'crimes' well enough. A 'mortal' sin does in no way absolve a venial one!

The selection of diagnostic variables is a particularly important and responsible process for it directly influences the final results of the study. It is crucial the diagnostic variables used in the study meet the requirements of *relevance*, *normativity*, and *explicitness*. The requirement of *relevance* demands that variables representing the most significant components of the analyzed phenomenon. The requirement of *normativity* denotes measures having either positive or negative influence on the analyzed phenomenon. The requirement of *explicitness* demands that the study uses variables which explicitly specify the relations between a phenomenon represented by a given measure and other phenomena.

The computer programs have been developed for the selection of an optimal subset of a set of possibly *informative*, *diagnostic* or *prognostic* variables. They can be equally useful for other discriminant analysis or pattern recognition problems involving variable selection. The approach is probabilistic; i.e., *diagnostic probabilities* are assigned to object on the basis of the values observed on the diagnostic variables. The statistical model used is largely based on the assumption of independence between the variables, but one model-parameter, the so-called '*global association factor*', is added in order to take dependency into account. The stepwise forward selection strategy of adding in each selection step a new variable to the set of already selected variables is used. The user may choose between numbers of selection criteria. Such a criterion is used in order to decide in each selection step which variable should be added. All criteria are based on measures of **diagnostic** or **prognostic performance**.

It may be that only a few chief types are found to be really important for us, so that we may focus

on these and neglect the remainder. Alternatively, it may turn out that a number of types (perhaps an unknown number) are needed, but not the entire typology. In such cases, it is common to utilize a shorthand typology by first constructing only **key criteria types**, and then locating all other types of reference to these criteria.

For example, we could define as a **criterion type**, the type with the highest diagnostic values on all dimensions. In this case, a criterion type is named **pattern type** and served as, for example, **development pattern** or **taxonomic measure of development** as in Wroclaw Taxonomy. Then other types could be measured in terms of their deviation or distance from this criterion. Often two polar types are used. **Polar types** are two extreme opposite types (such as the type scoring highest on all dimensions and the type scoring lowest on all dimensions) as, for example, in **TOPSIS** method (Technique for Order-Preference by Similarity to Ideal Solution), firstly proposed by Hwang and Yoon (1981). All remaining types would be intermediate to the polar types and could be located in terms of their *deviation* from these two cells. This allows a researcher to leave the majority of cells latent and to construct only those cells that have **representative types**, as measured by their deviation from a criterion type or polar types.

THE HOLY GRAIL GDP

The Holy Grail — different traditions describe it as a cup, dish or stone with miraculous powers that provide *happiness*, *eternal youth* or *sustenance in infinite abundance*.

However, many supporters of capitalism as the only and best system of the human social organisation are worried that capitalism does not (or no longer seems) to deliver ever-increasing living standards for the majority, but instead is producing ever greater inequalities of wealth and incomes, to such a point that it could provoke a backlash against the system itself.

Ideas on the links between economic growth and development during the second half of the 20th century had a formative influence. Gross Domestic Product (GDP) and economic growth emerged as leading indicator of national progress in many countries. However, GDP was never intended to be used as a **measure of wellbeing**. At the same time, it is growing acceptance of the fact that monetary measures, such as GDP per capita,

are inadequate proxies of development, and especially social one. In the 1970s and 80s development debate considered using alternative focuses to go beyond GDP, including putting greater emphasis on employment, followed by redistribution with growth, and then whether people had their basic needs met. These ideas helped pave the way for the **human development** (both the *approach* and its *measurement*).

Between 1967 and 1972 UNESCO has conducted research program “Toward a system of quantitative indicators of components of human resources development” and issued 20 research studies. That program has been continued by “Social science project on human resources indicators” program. A first selection of the papers and studies, relating to an earlier phase of the project, was published in 1972 by the Institute of Philosophy and Sociology of the Polish Academy of Sciences [Gostkowski, 1972]. The shift in emphasis in the work on social indicators was made in the next collection of papers prepared for the research project on indicators within the UNESCO Social Science Methods and Analysis Division titled “The use of socio-economic indicators in development planning” [UNESCO, 1976]. This collection has illustrated the change in direction, from indicators for international comparison to the ‘operationalization’ of indicators, i.e. for their use in planning and programming.

In 1960s United Nations Research Institute for Social Development (UNRISD) has conducted program “Pioneering Social and Human Indicators of Development” with sub-program “Measuring Social Development”. In 1970s program “Debating the Social and Political Dynamics of Modernization” with sub-program “UN “Unified Approach to Development””. In 1980s program “Promoting a Holistic and Multidisciplinary Approach to Social Development” with sub-program “Measurement and Social Indicators”. In 1990s program “The Social Effects of Globalization” with major areas of research among others “Crisis, Adjustment and Social Change”, “Environmentally and Socially Sustainable Development”, and “The Future of the Welfare State”. In 2000s the major areas of research are poverty eradication, the promotion of democracy and human rights, gender equality, environmental sustainability, the effects of globalization.

UNRISD has convened Meeting of Experts on Social Development Indicators which has been

held 8–11 April 1991 in Rabat, Morocco to review work of last three decades in the field of social development indicators and explore ways of providing better information on which to base social policy decisions. These included the persistence of data problems that limit the usefulness of numerous key indicators; the need for lower-cost and innovative methods for collecting and managing social data; efforts to improve the applicability of existing indicators; and new initiatives to develop indicators for the analysis of diverse phenomena (environmental degradation, gender inequality, and poverty).

Currently research for Social Change–Transformations to Equity and Sustainability: UNRISD Strategy 2016–2020 sets out the main priorities and themes of UNRISD research within an overarching institutional framework that links research, communications, policy engagement, results and impact. The Institute’s current research is organized in three programme areas: Social Policy and Development, Gender and Development, and Social Dimensions of Sustainable Development.

HUMAN DEVELOPMENT INDEX

The human development approach, developed by the economist Mahbub Ul Haq, is anchored in the Nobel laureate Amartya Sen’s work on human capabilities, often framed in terms of whether people are able to “be” and “do” desirable things in life.

The first Human Development Report introduced the **Human Development Index (HDI)** as a measure of achievement in the basic dimensions of human development across countries [United Nations Development Programme, 2017]. The Human Development Index (HDI) is a **summary measure** of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

In successive **Human Development Indexes** has been embodied one of the more important achievements of the human development approach, namely, a growing acceptance of the fact that monetary measures, such as GDP per capita, are inadequate proxies of development.

Human Development Reports (HDRs) have been released since 1990 and have explored different themes through the human development

approach. The reports, produced by the Human Development Report Office (HDRO) for the United Nations Development Programme (UNDP), are ensured of editorial independence by the United Nation's General Assembly. Indeed they are seen as reports to UNDP, not of UNDP. This allows each report greater freedom to explore ideas and constructively challenge policies.

The HDI was created to emphasize that **people** and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities.

The HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment, etc. The HDRO offers the other composite indices as a broader proxy on some of the key issues of human development, inequality, gender disparity, and poverty. These somewhat crude measures of human development remains a simple unweighted average of a nation's longevity, education and income. Over the years, however, some modifications and refinements have been made to the index.

The 2016 Human Development Report is the latest in the series of global Human Development Reports published by the United Nations Development Programme (UNDP) since 1990 as independent, analytically and empirically grounded discussions of major development issues, trends and policies. Additional resources related to the 2016 Human Development Report can be found online at <http://hdr.undp.org>. Here you can find digital versions of the report and translations of the overview in more than 20 languages, an interactive web version of the report, a set of background papers and think pieces commissioned for the report, interactive maps and databases of human development indicators, full explanations of the sources and methodologies used in the report's composite indices, country profiles and other background materials. In archive one can find as well previous global, regional and national Human Development Reports.

However, human development and sustainable development should be treated as a *multivariate*

phenomenon where multiple relations between multiple variables are examined simultaneously. The concepts of sustainability and sustainable development form the basis of long-term growth strategies. Its realization should help to build foundations for economic growth that also improves many social dimensions such as social inclusion, poverty, labor market situation, health.

TAXONOMIC MEASURES OF DEVELOPMENT

In modeling of socio-economic development, economic forecasting (prognosis), multidimensional comparative analysis one of the key questions is correctness of implementation the *distance* as a measure of taxonomic *similarity*, especially when variables are *composite aggregates*.

For any given *multivariate phenomenon* we have to take into account the possibility and reasonability of implementing:

Multiple-criteria analysis

Multiple-variable (multivariable) analysis (multifactor analysis)

Multiple-object analysis

Multidimensional analysis.

The taxonomic methods can be divided as follows:

1. Methods of ordering objects:

a) **Linear ordering** — the projection of multivariate space onto a straight line; it allows the establishment of the hierarchy of objects, that is the ordering from the object which is highest in the particular hierarchy to the object which is lowest in the hierarchy.

b) **Non-linear ordering** — the projection of multivariate space onto a plain; it does not allow for the establishment of a hierarchy of objects but only the establishment of similar objects to each given object.

2. Methods of a grouping of the studied objects:

a) **Direct grouping methods** — provide the groups of objects without moving them between groups in the subsequent stages of their grouping.

b) **Iterative methods of grouping** — the initial division into groups of objects, the choice of the function criterion of *goodness* of the grouping, the choice of the rules for the moving objects between groups which allows the increasing *goodness* of the grouping, the establishment of the rule which ends iteration.

3. The methods of choosing the representatives of objects and diagnostic variables:

a) Methods based on the matrix of the distance between the compared objects.

b) Methods based on the matrix of coefficients of correlations between potential diagnostic characteristics.

4. The aggregate methods (synthetic) of the construction of diagnostic variables:

a) Standard methods, which require the definition of the *standard (pattern) of development* and are based on the determination of the distance between the objects studied and the standard

b) Non-standard methods, which do not require the definition of development standard.

Therefore, there is a problem of choosing the optimal procedure for the analysis of the empirical data with specified statistical characteristics. Moreover, it is possible to combine all or some of above analyses into the complex method, for example, the most frequently applied *multidimensional multivariable analysis*. The more complicated analysis takes into account the dimension of time — multidimensional multivariable time-series.

In the selection of *diagnostic variables*, we can distinguish three of the most general groups of selection criteria for the factors of social and economic development: *substantive, formal* and *statistical*. The *substantive* selection of factors should include knowledge about the society, economy, finance, industries, and spatial economics and so on. The experience and intuition of the researcher are also essential. The most important problem of choosing diagnostic variables is the reliable existence of the values of their characteristics in a dynamic interpretation (continuous time-series). Each investigated **object** can be described by definite numbers of diagnostic variables.

For the *formal* criteria, the following issues should be included:

Measurability

Ensuring the comparability of the objects (diagnostic variables) in space and time

Complete data for all objects (diagnostic variables) and periods of the study.

The most important *statistical* criteria are:

A large spatial and spatial-temporal variability (coefficient of variation for the variable $v \geq 10\%$)

Asymmetric distribution

No excessive correlation.

The Polish *specialité de la maison* is **TMD — taxonomic measure of development** (TMD, Polish abbreviate — TMR) elaborated in 1967 by Zdzisław

Hellwig (1925–2013), one of the greatest Polish experts in the field of statistics and econometrics [Hellwig, 1968, 1972, 1975, 1978, 1981]. Z. Hellwig has used the work of a group of mathematicians from Wrocław University headed by Hugo Steinhaus (1887–1972) for the elaboration of the *typology* of economic development [Florek *et al.*, 1952; Steinhaus, 1957]. From 1968 to 1974 he was a UNESCO foreign expert in Paris. This method has been used for *ranking* countries according to their level of development on the basis of several indicators in UNESCO **Social Science Project on Human Resource Indicators**. His greatest achievements at that time are connected with the implementation of taxonomic methods and methods of multidimensional comparative analysis (MCA, Polish abbreviate — WAP).

At the beginning, Hellwig's work was based strictly in accordance with Steinhaus' graphic approaches involving linkage diagrams and multiple contour lines — taxonomic graphs [Hellwig, 1967, 1968]. The technique apparently remained undiscovered by English-speaking numerical taxonomists whose approach relied more upon numerical and computer techniques. However, a review of the method in 1964 drew attention to the work of the Wrocław group and caused some researchers to adopt the Wrocław techniques for the graphic representation of conventional taxonomic results. Nevertheless, although it is widely used in Poland, it is really hard to find it in any scientific paper written in English [Głodowska, 2016; Gostkowski, 1972, 1975; Jurkowska, 2014; Pawlewicz, 2005; Mesjasz-Lech, 2010; Pietrzak & Balcerzak, 2016; Sej-Kolasa, 2009].

These taxonomies are *linkage techniques*, with many variations. The *taxonomic units* (which in the present exercise are countries) are represented at first as a disjointed graph, the **taxonomic graph**. The general algorithm consists in computing the distances for all pairs of units placed in the n -dimensional Euclidean space, finding the shortest distances and representing by a graph the units (*vertices* or *nodes*) connected to their nearest partner by links representing in *length* these distances. The connected graph, in this case, is the '*shortest spanning tree*'.

The first step consists in connecting each *vertex* (one may start with any of the vertices) with its nearest neighbor in the group. The 'link' is proportionate to the Euclidean distance between

the two vertices or 'nodes'. A disjointed graph of *first-order* concentrations is obtained when all the vertices have been connected. By inspection one next finds the shortest distances between pairs of nodes belonging to two different *concentrations*. Concentrations of the *second order* are thereby determined. The process is repeated until all the nodes have been connected to form one *single joint graph*. Clusters are formed by removing, after arranging $n - 1$ links in decreasing order the K longest ones, so that $K + 1$ clusters are formed. The number K is determined by the '*critical minimum distance*', which is defined as $C = \bar{C} + 2S_d$ where \bar{C} is the mean and S_d the standard deviation of the minimum distances.

Today they are acknowledged not only in Poland but have gained international recognition. In these works, Z. Hellwig drew attention to the real possibilities of applying taxonomic methods of linear ordering to economic problems. He introduced the concept of *synthetic measure* — based on the concept of *development pattern* and commonly known today as *Hellwig's economic development measure* — and an algorithm for grouping objects into relatively homogeneous subsets. These ideas have inspired a number of scholars in various Polish institutions. The terms — also introduced by Z. Hellwig — of development measure, development pattern, development path and the optimal trajectory of development, aggregate and its information potential — are still employed by Polish scientists representing various fields of study.

In order to use this measure, a given multivariate phenomenon is decomposed to some economic aspects (called *objects*), where each object describes a different part of the economic system. For each object, a subset of *potential diagnostic variables* is selected. The variables enable to characterize the selected object and allow describing it. Then, based on chosen diagnostic variables TMD is calculated, taking into account impact of all objects' variables of the examined economic phenomenon. TMD is interpreted as composite (synthetic) measure of phenomenon's development level. The application of TMD allows *ordering* analyzed objects (for example countries) based on the calculated level of development of the phenomenon. The use of TMD in economic analysis enables to assess the current situation of the objects under study and to make possible their

ranking from the worst to the best. It needs to be stressed that at the beginning Z. Hellwig has tried to achieve *typology* of the analyzed phenomenon. In international comparative analyze it makes possible to describe static *socio-economic profiles* of the analyzed countries.

Multiple criteria analysis methods can be divided into two groups. The first group allows carrying out ordering of objects from the worst to the best from the perspective of analyzed complex phenomena. *A taxonomic measure of development* proposed by Z. Hellwig can be found in this group. The second group of methods allows classification of analyzed objects into *homogeneous subsets*, where the objects are characterized with similar values of the variables. In this group, one can find cluster analysis with Ward's method as an example.

The Wroclaw Taxonomy, along with other variations on the same theme, distinguishes itself from a large number of techniques which flourish in this field by sacrificing to simplicity and speed of calculations some of the information contained in the data and distance matrices. However, it was important in the time when computers on the stage of occurrence.

The most important advantage of the Hellwig's concept relates to its cognitive values in explaining economic reality and flexibility in its application. The tool can be used to analyze the most of economic phenomena that have complex nature. Even now, if however ease and speed of the calculations are given great weight because of inaccessibility to, or cost of using 'hardware', then the balance will be tipped in favor of Wroclaw taxonomy or allied techniques.

Current development of the concept of TMD concentrates on taking into account *spatial interdependence* in the design of the measure, and *time-spatial* interdependence as well. The other direction of development of taxonomy is the concept of taxonomies of structures.

Static and dynamic issues

Time is an important dimension (variable) in social and economic research. After all, the word 'development' implies taking into account time. Many classifications in social science are *synchronic* or *cross-sectional*, meaning that it occurs *at a single point in time*. Such synchronic or

non-evolutionary relationships are sometimes termed static relationships. Although more difficult, it is also possible to utilize *diachronic classification* based, for example, on measures of change or on measures of *evolutionary resemblance*.

The *notion of resemblance* is associated with that of 'proximity', which is similar to *distance*. For example, we speak of the gap between countries, of how one country is out-distancing another, etc. The ordinary two-dimensional graph where values of two variables are represented on orthogonal axes was among the first elementary attempts to use distances and construct a picture from two sets of data. The three-dimensional model is as far as we can get in a three-dimensional world to illustrate in a concrete manner *trends* and *relative movements* of variables. The two-dimensional graphs are however much more in favor because of ease of reproduction in books, the three-dimensional graphs reproduced in perspective on a flat surface being most times unsatisfactory. The n -dimensional space extrapolates the 3-dimensional one, and loses its 'spatiality', its physical meaning, while retaining the *mathematical properties of Euclidean metrics*, with the ordinary algebraical measures of the distances, angles, etc.

Groupings in a Euclidean space, whatever the dimensions, are results of a set of techniques which are circumscribed by the term **cluster or taxonomic analysis**. They are numerical techniques based on notions of **similarity, resemblance or proximity** of the variables to be classified or units to which the variables correspond. These notions of similarity, etc. find quantitative expressions in methods of quantification which are:

- a) coefficients of similarity
- b) correlation coefficients, regression coefficients, factor analysis and related techniques, like factor analysis of correspondence
- c) distance-based, both *Euclidean* distance, like the one proposed in Wroclaw Taxonomy and *non-Euclidean* distances like the **I-distance** proposed by Branislav Ivanovic and the **Generalized Distance** proposed by Mahalanobis.

In the Wroclaw Taxonomy, the chosen metric is the Euclidean one, the *unit of measurement* is, in fact, the standard deviation, and the standardization process converts at the same time the vectors x and y to $x - \bar{x}$ and $y - \bar{y}$ respectively.

Interpretation of diagnostic variables

One of the important goals of every applied science is, beyond doubt, the establishment of *connections* and *mutual relations* between facts and processes which constitute the object of a given scientific observation. This is by no means a simple task since we have to deal not only with direct, clear, strong and durable connections, mainly of causal character but also with indirect, weak, unstable, changeable and stochastic relations which are difficult to examine and to identify. Whereas the connections embraced by the first group can be expressed in functional terms, the elements of the second group require some specific methods of description, an outstanding role amongst which play statistical methods. This is due to the fact that **stochastic relationships** are created very often either by *intermediate* or *illusory* connections between phenomena involved.

Due to the shape of the relationship between explanatory variable (called **predictor** or more traditionally — independent variable) and explained variable (called **predictand** or more traditionally — dependent variable or outcome variable) in econometrics is used following types of explanatory variables: stimulants, nominants, dis-stimulants, and *neutrals*.

As we said above, prior knowledge and theoretical guidance are required in order to make the right decisions concerning the selection of diagnostic variables. In Wroclaw taxonomy, it is also needed to divide diagnostic variables into stimulants, nominants, dis-stimulants, and *neutrals* on the basis of the *types of preferences*. It is this stage of work where prior knowledge and theoretical guidance are required in order to make the right decisions. In Wroclaw Taxonomy the stimulants are defined as variables that have a stimulating effect on the level of development of the phenomenon studied and therefore are desirable as their highest values. Dis-stimulants are variables acting to hinder the development of the phenomenon and therefore high values are not desirable. Nominants are variables that have a stimulating effect on the level of development (as stimulants) yet to a certain point (or span), called nominal, and above and below that point (span) the character of dis-stimulants. Neutrals are variables indifferent to an explanatory variable or with very weak dependence.

Dis-stimulants can be transformed into stimulants by calculating the inverse of each value according to the formula:

$$x'_{ij} = \frac{1}{x_{ij}}. \quad (i = 1, 2, \dots, n); (j = 1, 2, \dots, m) \quad (1)$$

It is also admissible to use statistical measures for the initial selection of variables, such as coefficient of variation, correlation, and asymmetry. However, the point is that in the final set of variables, the information is not replicated.

Choice of predictors

The main value of the Hellwig's proposals relates to its cognitive values in explaining economic reality, methodological simplicity and flexibility in its application. The tool can be used to analyze most of the economic complex phenomena. However, there are two main limitations on the application of TMD in economic research. The first objective limitation is the *availability of statistical data*. The second one relates to *researcher's knowledge and experience*, which should allow to concretize properly an analyzed phenomenon and then to express its multi-dimensionality using single measurable economic aspects. In the case of the first problem cognitive values of the tool is not fully utilized or the tool cannot be applied. In the case of the second limitation, the cognitive values of the tool are used improperly, which can lead to serious cognitive errors.

In many cases, taxonomic researches are as a matter of fact very similar to statistical and econometric modeling. So, the problem is of special importance when dealing with any type of economic models. The three crucial questions which one faces are the following:

1. How to make the optimal selection of the set of variables (called here **predictors**) which play the role of 'independent' variables?
2. How to fix the number (n) of predictors which should be introduced?
3. How 'to weight' the influence of predictors on the predictand(s), i.e. the 'dependent' variable?

Unfortunately, in many empirical implementations of Wroclaw Taxonomy, these issues are neglected [Borys, 1978; Grabiński et al., 1983; Grabiński et al., 1989; Kolenda, 2006; Malina &

Zeliaś, 1997; Nowak, 1990; Panek, 2009; Pluta, 1977, 1986; Zeliaś, 2000].

The problem of weighting in multidimensional comparative analysis

The variables are not weighed, in the computation of the Euclidean distances for the Wroclaw Taxonomy. This distinguishes Wroclaw distance from the I-distance and Generalised distance of Mahalanobis. The problems of weighting have been raised in the UNESCO Project on Human Resources Indicators [Hellwig, 1969]. There can be no standard methods of weighting the variables which are used for computing the development distances. The choice of weights will depend on the purpose of the researcher: he may give more weight to variables relating to 'welfare' aspects than to 'production' aspects. There is no uniform development pattern, and most variables move in and out of importance as development proceeds along. The importance of a relatively high value for a variable might be crucial at a level of development and not at all important at another level when 'high' values for other variables become in turn of greater importance.

The main question here is the choice of the endogenous and exogenous criterion of the *relative importance* of variables. In this place, the following question may be put forward: are all variables, equally important in judging about achieved, say, level of economic growth or are some of them more and some less important? Before answering this question an agreement should be made as to what *criterion* we will be ready to accept in order to be able to distinguish between 'more' and 'less' important variables. There are two possible ways of selecting such a criterion. The first consists in accepting as a criterion one of the variables X_1, X_2, \dots, X_n (say the variable X_n). In this case, we will speak about **endogenous** criterion. The second is equivalent to selecting some additional variable, say X_{n+1} , and letting it play the role of the criterion of the relative importance of the variables X_1, X_2, \dots, X_n . This is the case of an **exogenous** criterion.

If we denote the variable-criterion C then formulation of the "problem of weights" shows very clearly that the selection of the sequence of numbers of weights depends heavily on the selection of criterion C and this, in turn, is a matter of an arbitrary decision. One cannot, therefore, expect

that the problem of weights is liable to the unique, optimal solution unless criterion **C** has been properly defined. But even if this were already done, there is still much room left for arbitrariness because a selection of weights can be performed in many different ways, for example:

1. Weights based on regression coefficients	Weights determined by means of endogenous criterion
2. Weights based on the concept of capacity of information	
3. Weights based on the factor analysis method	Weights determined by means of exogenous criterion
4. Weights based on the correlation matrix	
5. Weights based on the coefficient of variation	

FORMAL CHARACTERISTICS OF WROCLAW TAXONOMY

The study of the level of socio-economic development can be conducted by the use of two taxonomic methods: the Hellwig’s pattern method and the non-pattern method. We present only their basic assumptions. However, we have to take into account there seems to be no limit to the range of varieties of possible metric spaces [Walesiak, 2016b].

1. The set of output data has been assembled to form the so-called **observation matrix**:

$$X = \begin{bmatrix} x_{11} & x_{12} & \dots & x_{1m} \\ x_{21} & x_{22} & \dots & x_{2m} \\ \dots & \dots & \dots & \dots \\ x_{n1} & x_{n2} & \dots & x_{nm} \end{bmatrix} \quad (2)$$

where:

- m – number of diagnostic variables (columns) ($j = 1, 2, \dots, m$)
- n – number of objects (rows) ($i = 1, 2, \dots, n$)
- x_{ij} – value of the j^{th} diagnostic variable in the i^{th} objects ($i = 1, 2, \dots, n$)

2. Because diagnostic variables have, as a rule, different physical dimensions they cannot be directly compared. To enable such a comparison, the variables have to be normalized by eliminating the effect of units of measurement. It is a prerequisite

in Wroclaw Taxonomy to achieve the *comparability of all* final diagnostic variables. This entails, among others, the necessity to strip variables of their natural units in which the diagnostic variables are expressed as well as to normalize variables. It requires their range of variability to be smoothed.

The analyzed variables are standardized as follows:

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{s_j}; \quad (i = 1, 2, \dots, n); \quad (j = 1, 2, \dots, m) \quad (3)$$

where:

z_{ij} – normalized value of the j^{th} variable for the i^{th} object

x_{ij} – value of the j^{th} variable for the i^{th} object

\bar{x}_j – arithmetic mean of variable X_j

s_j – standard deviation of variable X_j .

where:

\bar{x}_j – arithmetic mean of variable X_j , where

$$\bar{x}_j = \left(\frac{1}{n} \sum_{i=1}^n x_{ij} \right), \quad (4)$$

s_j – standard deviation of variable X_j , where

$$s_j = \left[\frac{1}{n} \sum_{i=1}^n (x_{ij} - \bar{x}_j)^2 \right]^{1/2} \quad (5)$$

Variables’ differentiation has been determined for each initial diagnostic variable, with the variation coefficient being the main criterion. The coefficient is calculated according to the formula:

$$v_j = \frac{s_j}{\bar{x}_j} \quad (j = 1, 2, \dots, m), \quad (6)$$

with \bar{x}_j and s_j as above.

3. The above standardization produced a matrix of standardized values Z :

$$Z = \begin{bmatrix} z_{11} & z_{12} & \dots & z_{1m} \\ z_{21} & z_{22} & \dots & z_{2m} \\ \dots & \dots & \dots & \dots \\ z_{n1} & z_{n2} & \dots & z_{nm} \end{bmatrix} \quad (7)$$

Table 1. The Value of TMD for the European Union Countries between 2000–2013

Country\year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Austria	0.382	0.374	0.391	0.399	0.444	0.426	0.426	0.381	0.387	0.418	0.447	0.503	0.468	0.462
Belgium	0.387	0.372	0.376	0.370	0.387	0.366	0.354	0.323	0.320	0.351	0.372	0.389	0.368	0.356
Bulgaria	0.020	0.005	0.009	0.019	0.037	0.057	0.063	0.041	0.057	0.072	0.067	0.087	0.062	0.075
Cyprus	0.278	0.273	0.282	0.270	0.264	0.257	0.249	0.225	0.216	0.228	0.254	0.260	0.215	0.195
Czech Republic	0.231	0.240	0.251	0.258	0.261	0.259	0.259	0.244	0.243	0.257	0.256	0.282	0.249	0.241
Denmark	0.432	0.421	0.440	0.437	0.448	0.442	0.440	0.403	0.406	0.426	0.432	0.475	0.439	0.424
Estonia	0.170	0.147	0.155	0.159	0.191	0.201	0.221	0.197	0.174	0.148	0.160	0.260	0.249	0.256
Finland	0.414	0.396	0.408	0.403	0.419	0.413	0.407	0.374	0.388	0.410	0.427	0.492	0.433	0.397
France	0.389	0.388	0.384	0.388	0.377	0.359	0.350	0.318	0.323	0.348	0.361	0.391	0.374	0.389
Germany	0.382	0.366	0.363	0.360	0.369	0.335	0.330	0.311	0.322	0.358	0.382	0.424	0.408	0.411
Greece	0.169	0.176	0.182	0.200	0.183	0.170	0.160	0.136	0.136	0.153	0.135	0.097	0.067	0.059
Hungary	0.196	0.203	0.215	0.226	0.220	0.200	0.193	0.157	0.153	0.167	0.166	0.183	0.165	0.156
Ireland	0.365	0.357	0.369	0.395	0.406	0.418	0.417	0.373	0.345	0.319	0.337	0.375	0.348	0.357
Italy	0.274	0.275	0.274	0.264	0.272	0.246	0.246	0.227	0.219	0.234	0.242	0.181	0.234	0.214
Latvia	0.057	0.063	0.080	0.083	0.104	0.115	0.129	0.133	0.126	0.056	0.056	0.012	0.102	0.127
Lithuania	0.066	0.066	0.083	0.083	0.084	0.104	0.109	0.115	0.101	0.082	0.096	0.249	0.170	0.182
Luxembourg	0.341	0.363	0.350	0.349	0.374	0.356	0.339	0.317	0.292	0.309	0.355	0.457	0.362	0.349
Malta	0.319	0.315	0.317	0.339	0.337	0.326	0.331	0.280	0.278	0.300	0.303	0.404	0.323	0.302
Netherlands	0.451	0.433	0.443	0.453	0.452	0.436	0.448	0.412	0.410	0.431	0.443	0.471	0.450	0.430
Poland	0.129	0.117	0.108	0.101	0.097	0.082	0.085	0.100	0.112	0.161	0.180	0.205	0.189	0.183
Portugal	0.225	0.217	0.206	0.208	0.199	0.174	0.149	0.115	0.113	0.138	0.153	0.181	0.144	0.131
Romania	0.008	0.010	0.030	0.032	0.041	0.043	0.051	0.043	0.022	0.006	0.009	0.009	0.022	0.032
Slovakia	0.155	0.155	0.165	0.156	0.153	0.132	0.136	0.132	0.137	0.183	0.197	0.249	0.198	0.196
Slovenia	0.248	0.254	0.256	0.251	0.265	0.239	0.253	0.224	0.228	0.244	0.249	0.282	0.255	0.242
Spain	0.257	0.262	0.257	0.271	0.266	0.276	0.258	0.225	0.172	0.169	0.188	0.189	0.164	0.157
Sweden	0.394	0.372	0.388	0.396	0.402	0.389	0.389	0.369	0.377	0.392	0.418	0.462	0.429	0.428
United Kingdom	0.395	0.389	0.403	0.426	0.433	0.431	0.430	0.382	0.378	0.381	0.376	0.419	0.374	0.364

Source: Głodowska, A. (2016). Multidimensional analysis of social convergence within the European Union countries. *Chinese Business Review*, 15(3), p. 108.

4. Such normalized data can be used for the construction of Hellwig’s pattern model. There are many methods of constructing the model. We can define the model as an abstract object characterized by the maximum values of each normalized variable:

$$z_{01}, z_{02}, \dots, z_{0m}$$

where for:

– stimulants $z_{0j} = \max_i \{z_{ij}\}$, (8)

– distimulants $z_{0j} = \min_i \{z_{ij}\}$. (9)

The Euclidean distance between objects and the identified ‘pattern of development’ was calculated using the below formula:

$$d_{0i} = \sqrt{\sum_{j=1}^m (z_{ij} - z_{0j})^2}, \quad (10)$$

where d_{0i} is the Euclidian distance of i object from pattern model.

5. The next stage is a determination of a taxonomic development measure. The resulting values of d_{0i} are used to calculate the value of Hellwig’s synthetic measure of development, as follows:

$$TMD_i = 1 - \frac{d_{0i}}{d_0}, \text{ where:}$$

$$d_0 = \bar{d}_{0i} + 2s_d.$$

TMD_i is a taxonomic measure of development for i object

\bar{d}_{0i} is an arithmetic mean of the Euclidean distance

s_d is the standard deviation of the Euclidean distance

$$TMD_i \in [0;1].$$

Because TMD values are between 0–1, it means that values closer to the 1 present a higher level of development of the object. As an example, in

table 1 we present results of such calculations conducted by A. Głodowska (2016).

INSTEAD CONCLUSION

It is too early to summarize. We have to present proposition associated with the time and space. A dynamic taxonomy is still in its infancy. Some studies have been based on historical series and on a static view of countries. It seems if the analysis is repeated over time, it is possible to achieve a dynamic view (movements) of the economic, technological, and social performance of each country, which can provide important information to evaluate the effectiveness of economic and research policies. However, it does not facilitate the identification of the performance and strategic *behaviour* of countries. A

full accounting of time and space improves the analysis based on the multivariate approach [Młodak, 2006]. Taxonomic methods seem to be extremely useful for the spatial studies. The other important question is the modelling (forecasting) of socio-economic phenomena with the use of taxonomic methods [Cieślak, 1976, 2001; Grabiński, 1984; Heilpern, 2014]. There are also some unsettled questions, as, for example, a generalization of distance measure [Walesiak, 2016a], normalization of diagnostic values [Kukuła, 1996, 1999, 2000]. In recent times taxonomic methods are used in the financial sector, for example, in the analysis of stock exchange [Łuniewska & Tarczyński, 2006, 2007; Jajuga, 2000] to group similar investment vehicles and to construct sectorial stock market indices.

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Determinants of Banks' Profitability: Empirical Evidence from Vietnam

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Abstract. This paper aims at empirically examining the impact of bank-specific factors and macroeconomic variable on the Vietnam listed banks' profitability over the period for 2007–2016 by using the ratios return on assets (ROA) as a proxy of profitability. A total 80 listed banks' financial reports were analyzed and the statistical tool employed is the technique of linear multiple regression analysis. Empirical results found that bank-specific factors such as non-performing loan ratio, operating expenses to total assets ratio and total loan to total assets ratio have significant negative impact on the return on assets, while equity to assets ratio is found to have a positive significant impact. However, deposit to assets ratio and inflation ratio are found to be insignificant on affecting the profitability of banks.

Keywords: determinants; impact; profitability; commercial banks.

Детерминанты доходности банков: эмпирические данные из Вьетнама

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Аннотация. Целью данной статьи является эмпирическое изучение влияния специфических для банка факторов и макроэкономических переменных на доходность листинговых банков Вьетнама за период 2007–2016 гг. с использованием коэффициентов доходности активов (ROA) в качестве косвенного показателя доходности. Проанализировано 80 финансовых отчетов банков, включенных в перечень, с применением статистического инструментария в виде метода линейного множественного регрессионного анализа. Результаты эмпирических исследований показали, что такими специфическими для банка факторами, как доля неработающих кредитов, соотношение операционных расходов к общей сумме активов и соотношение общей суммы кредита к общей сумме активов имеют значительное негативное влияние на доходность активов, тогда как коэффициент обеспеченности собственными оборотными средствами показывает положительный эффект. Однако соотношение депозитов к активам и инфляция оказывают незначительное влияние на доходность банков.

Ключевые слова: детерминанты; влияние; рентабельность; коммерческие банки.

1. INTRODUCTION

In early 2007, Vietnam became an official member of the World Trade Organization. After 10 years of WTO integration, Vietnam's banking system has been improved. With the deepening involvement of foreign banks, the competition in banking sector has been increasing. This requires the domestic commercial banks to make changes in corporate governance, increase financial capacity, invest in technology and improve the quality of banking services in order to compete with international banks. After the financial crisis in 2008, the system of commercial banks in Vietnam was influenced with many consequences: arise of bad debt, lack of liquidity at some time. These problems have significantly affected the profitability of banks. Accordingly, the plan of restructuring the financial institutions for the period 2011–2015, issued in conjunction with Decision 254 of the Prime Minister (Project 254), is reforming financial institutions, increasing transparency through the application of new mechanisms of information disclosure, listing shares of commercial banks on the stock market. The banking system in Vietnam comprises of 4 State-owned commercial banks (the State holds more than 50% of charter capital), 31 commercial banks, 8 foreign banks, 2 Joint Venture Banks, 2 Policy Banks and 1 Central People's Credit Fund. (State Bank of Vietnam, 2016). Banking system in Vietnam is dominated by commercial banks, and 9 banks have listed their share on Stock Exchange. However, there is a difference of performance between listed banks. This study is intended to clarify factors affecting the profitability of the listed banks in Vietnam.

This paper is structured as follows: The next section is the literature review, followed by a section that outlines the research methodology. Section 4 presents the empirical result and discussion. Finally, section 5 is conclusion.

2. LITERATURE REVIEW

The determinants of bank profitability have become a major concern of bank manager, investor, policymaker. A variety of researches has been done in term of specific economy, notably such as:

Mamatzakis, et al. (2003) examined the determinants of the performance of Greek commercial banks over the period for 1989–2000 by using the ratios return on assets (ROA) and return on equity (ROE) as a proxy of the profitability of the commercial banks. This study found that the variables related to management decisions had a major impact on the profitability of Greek commercial banks.

Kosmidou, et al. (2008) investigates the impact of bank-specific characteristics, macroeconomic conditions and financial market structure on UK owned commercial banks' profits, during the period 1995–2002. The results show that the capital strength of these banks has a positive and dominant influence on their profitability, the other significant factors being efficiency in expenses management and bank size. This paper also found that the macroeconomic environment (proxy by GDP growth and inflation) has a positive impact on bank performance, as do concentration in the banking industry and stock market development.

Karimzadeh, et al. (2013) examine the most important factors that may stem from both internal and external factors, which affect profitability of Indian banking sector over the period 2003–2011. For this study, a balanced panel data set is used that is drawn from Indian banking industry. The result reveals that bank-specific determinants are able to explain significant part of bank profitability in India. A major outcome of this study is that size of the banks makes important contribution to their profitability. The study also verifies the fact that the deposit and loan asset ratios of banks also have a significant impact on profitability of banks in India.

Acaravci and Calim (2013) investigate the long-run relationship between the bank-specific and macroeconomic factors and the profitability of commercial banks in Turkish banking sector. The sample period spans from 1998 to 2011. In the study, return of asset, return of equity and net interest margin were used as proxy for profitability of banks. The results from this study showed that compared with internal factors, external factors have less impact on bank profitability.

Samad (2015) investigated the impact of bank-specific characteristics and macroeconomic

variables in determining the banks' profitability of Bangladesh banking industry with a panel data and found that bank-specific factors such as loan-deposit ratio, loan-loss provision to total assets, equity capital to total assets, and operating expenses to total assets are significant factors. However, bank sizes and GDP show no impact on profits.

Duraj and Moci (2015) investigate the determinants of the profitability in Albania banking sector. The results suggest that the profitability of Albanian banks is influenced not only by factors related to their management decisions which are classified as internal factors, but also to changes in the external macroeconomic environment i.e. GDP, inflation which resulted as significantly related to profitability of the banks.

Rahaman and Akhter (2016) study the impact of some selected bank-specific factors on Islamic banks' profitability. The data for this study covering a period 2009–2013 is obtained from the annual reports of respective Islamic banks. The statistical tool employed is the technique of linear multiple regression analysis. The data-set used in this study involves eight Islamic banks operating in Bangladesh. Empirical results show that bank-size and deposit have significant negative impact on the return on assets (ROA) which is the proxy for Islamic banks' profitability, while equity is found to have positive significant impact. However, loan and expense management are found to be insignificant in affecting the profitability of the banks.

There are also some studies conducted to investigate the factors affecting the profitability of banks in a group of different countries.

Athanasoglou et al. (2006) examine the profitability behavior of bank-specific, industry related and macroeconomic determinants, using an unbalanced panel dataset of South Eastern European (SEE) credit institutions over the period 1998–2002. The results indicate that with the exception of liquidity, all bank-specific determinants significantly affect bank profitability in the anticipated way. A key result is that the effect of concentration is positive, which provides evidence in support of the structure-conduct-performance hypothesis, even though some ambiguity arises given its interrelationship with the efficient-structure hypothesis. In contrast, a positive relationship between bank-

ing reform and profitability was not identified, whilst the picture regarding the macroeconomic determinants is mixed.

Beakmann (2007) investigated structural and cyclical determinants of banking profitability in 16 Western European. This paper found that financial structure matters, particularly through the beneficial effect of the capital market orientation in the respective national financial system.

Furthermore, higher diversification regarding banks' income sources shows a positive effect. The industry concentration of national banking systems, though, does not significantly affect aggregate profitability. Business cycle effects, in particular lagged GDP growth, display a substantial pro-cyclical impact on bank profits.

Flamini et al. (2009) analyze determinants of bank profitability in 41 sub-Saharan by using a sample of 389 banks. They found that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. Moreover, bank returns are also affected by macroeconomic variables.

Shaher et al. (2011) analyze the factors that affect the commercial banks' performance in the Middle East Region. The empirical results have found bank-characteristic variables have the most significant impact on banks' performance.

In Vietnam:

Ngo (2012) analyzed and measured the performance of banking system in Vietnam by using DEA method. The research suggests that this performance is decreasing through the time as the size of the banking sector increases; financial market is more liberate, and when the World and regional economies are problematic. While the banking system is running at two-thirds of its capacity, it has limited contribution to the economy.

Vu and Nahm (2013) examines the factors that affect profit efficiency of banks in Vietnam over the period from 2000 to 2006. The effects of four groups of variables, including bank-specific characteristics, ownership, transitional environment, and macroeconomic conditions on the profitability of banks, are analyzed using a Tobit model to account for the censored nature of the efficiency scores. The findings show that the profit efficiency of a bank is enhanced by a larger size and better management ability, while it is hampered by low quality of assets and a

too high level of capitalization. High growth in per-capita GDP and a low-inflation rate provide a favorable environment for banks to improve their profitability.

Son et al. (2015) used panel data from 2010–2012 from 44 banks in Vietnam to investigate the impacts of ownership structure on bank performance. Research results show that capital concentration and private ownership have positive impact on bank profitability; the non-performing loan ratio has negative relation with banks' profitability.

Nguyen & Bui (2015) investigate factors that impact on profitability of the commercial banks in Vietnam. This paper shows that the equity to total assets ratio, the loans to total assets ratio, the liquidity ratio and the economic growth rate have significant and positive impact on the profitability of commercial banks in Vietnam.

According to the literature review above, we can come to conclusion that:

Firstly, a large number of empirical studies covered developed and developing countries. And, in studying determinants of profitability of banking sector, researchers usually chose ROA, ROE or NIM as a proxy of profitability of banks.

Secondly, most of papers traditionally mentioned two types of factors (internal and external factors) in studying the factors that affect banks' profitability. Internal factors (bank-specific factors or bank-characteristic factors) are the factors influenced by the bank's management decisions. External factors, or uncontrolled factor, are factors being beyond the control of the bank such as economic growth, inflation, or operating rate of monetary policy of the central bank.

Thirdly: there is a little research on the determinants of banks' profitability in Vietnam, except Vu and Nahm (2013) and Nguyen and Bui (2015).

The paper contributed to the banking literature. First, the paper applies the quantitative estimate in determining profitability factors using panel regression. Second, the paper identifies the most significant factors on the profitability of listed banks in Vietnam. In compared with Vu and Nahm (2013), this paper covers latest data from banking sector. Moreover, this paper adds more variables such as: inflation rate and operating expense than Nguyen and Bui (2015).

Third, the findings of this provides useful guide to bank management.

3. RESEARCH METHODOLOGY

This study aims to analyze the determinant of banks' profitability of all Vietnam Listed Banks. The study is based on panel dataset covering all listed banks of Vietnam over the period of 2007–2016. Because of insufficient data from a bank for 10 years from 2007 to 2016, therefore the study use data from 8 listed banks. Total assets of these 8 listed banks account for about 55 percent of total assets in banking sector as at the end of 2016. Data of all bank-specific variables such as Non-Performing Loan (NPL), operating expense, equity, asset, deposit, loan and ROA are obtained from bank's annual reports from 2007–2016. Data for macroeconomic variable inflation is obtained from Vietnam General Statistic.

According to literature review mentioned above, we use the following ratios to evaluate the banks' profitability.

- Return on Assets (ROA): ROA is the ratio of net income to total assets. This paper use ROA as a dependent variable. ROA is considered the best proxy of profit (Flamini et al., 2009 and Samad, 2015).

- Non-performing loan ratio (NPL): this ratio is measured by dividing the non-performing loan to total loan. This ratio is the main indicator of credit risk management. The lower non-performing loan ratio can lead to a reduction of the cost related to manage bad debt, therefore, higher profitability banks can make. Son et al. (2015) found that NPL has negative and significant impact on ROA and ROE. In this study, NPL is expected to have a negative relation with profitability of bank.

- Equity to Assets ratio: this ratio is measured by bank's equity capital as the percentage of total assets. Equity to total assets ratio reveals the capital adequate. Equity management is an important part of banking management, especially higher capital adequate helps the bank mitigate risks related to mass withdrawals. Higher this ratio, the lower the capital cost of the bank, thereby increasing profitability. Samad (2015) found that equity capital to total assets ratio have a significant and positive impact on ROA of Banks. Almazari (2014) found

Table 1. Definition of variables

Variable	Hypothesized relationship with profitability
The dependent variable	
ROA	The return on average total assets of bank
The bank-characteristic variables	
NPL	Non-Performing Loan/ Total Loan -
EQA	Equity/ Total Assets +
OPEAS	Operating Expense / Total Assets -
DPAS	Total Deposit/ Total Assets +
LOANAS	Total Loan/ Total Assets +/-
The macroeconomic variable	
INF	Inflation Rate (CPI) +/-

Table 2. Descriptive statistic of dependent and all independent variables

	ROA	NPL	EQA	OPEAS	DPAS	LOANAS	INF
Mean	0.0127813	0.0197338	0.0838674	0.0150094	0.7846567	0.5719520	0.0911900
Median	0.0123000	0.0179500	0.0741814	0.0143183	0.8084192	0.5783061	0.759000
Standard Deviation	0.0070330	0.0151585	0.0360183	0.0046438	0.1222931	0.1212960	0.0644300
Minimum	0.0002000	0.0008000	0.0425558	0.0018269	0.3100068	0.3307789	0.0063000
Maximum	0.0330000	0.0880000	0.2662079	0.0270488	0.9237704	0.82070668	0.2297000
Count	80	80	80	80	80	80	10

that the profitability of Saudi banks and Jordanian banks has a positive and significant correlation with total equity to assets ratio. In this study, it is expected that Equity to assets ratio has positive impact on profitability.

- Operating Expense to Assets ratio: It is measured by bank's operating expense as the percentage of total assets. Athanasoglou (2006) studying determinants of bank profitability in the South Eastern European region found that operating expense to total assets has a negative and significant effect on profitability. A bank spends high operating expense the profitability could be reduced, therefore operating expense to assets ratio is expected to have negative impact on profitability.

- Deposit to Assets ratio. This ratio is considered as a main indicator of liquidity of bank. Zaman (2011) investigating determinants of top 10 banks' profitability in Pakistan over the period 2004–2008 found that deposit to assets ratio has positive and significant relationship with profitability indicator ROA. This ratio also was used by Karimzadeh et al. (2013) in studying correlation between internal factors and level of profitability in India and found that Deposit to assets ratio has a positive impact on the profitability of banks. It is expected that deposit to assets ratio has a positive relationship with profitability.

- Loan to Assets ratio: until now the impact of this variable on profitability of banks is

Tables 3. Correlation coefficient between variables in the research model

Independent variable	ROA	NPL	EQA	OPEAS	DPAS	LOANAS	INF
ROA	1						
NPL	-0.323045	1					
EQA	0.377236	0.01558	1				
OPEAS	-0.368787	0.109279	-0.127354	1			
DPAS	0.044663	-0.119814	-0.135368	0.241212	1		
LOANAS	-0.590158	0.038652	-0.30009	0.473071	0.258533	1	
INF	0.374358	0.046146	0.199398	0.056652	-0.135892	-0.432751	1

different. Research from Mamatzakis and Remoundos (2003), Hassan and Bashir (2003) and Staikouras and Wood (2003) found that Loan to assets ratio has positive impact on profitability of banks. However, the study from Vong (2005) and Vong and Chan (2009) found that is negative sign. The reason to explained the different results is that high competition in credit market lead to a reduction of loan even though that is the main income of banks, especially in the period after financial crises.

- Inflation ratio: Asthanasoglou et al. (2006) and Hefferman and Fu (2008) found that macroeconomic variable (inflation) had positive impact on profitability. Revell (1979) concluded that the level of inflation can be used to explain the changes of banks' profitability. In contrast, recently Dujai and Moci (2015) found that inflation rate had negative impact in the profitability of the banking sector. Especially, Demirguc-Kunt and Huizingga (1999) studying determinants of commercial bank interest margins and profitability in 80 countries found that in developing countries inflation and profitability tend to have negative relation. It can be explained that higher inflation leads to that the cost increase higher than the revenue.

Panel Ordinary least square (OLS) is applied for estimating the impact of bank-specific characteristics and macroeconomic variable on bank profitability.

We have model as follows:

$$ROA_{i,t} = \beta_0 + \beta_1 NPL_{i,t} + \beta_2 EQA_{i,t} + \beta_3 OPEAS_{i,t} + \beta_4 DPAS_{i,t} + \beta_5 LOANAS_{i,t} + \beta_6 INF_t + \varepsilon_{it}$$

Where:

$ROA_{i,t}$: the profitability of bank i in year t

$NPL_{i,t}$: Non-performing loan ratio of bank i in year t

$EQA_{i,t}$: the equity total assets ratio for bank i in year t

$OPEAS_{i,t}$: the operating expense to total assets ratio for bank i in year t

$DPAS_{i,t}$: the deposit to total assets for bank i in year t

$LOAN_{i,t}$: the loan to total assets for bank i in year t

INF_t : the inflation ratio in year t

Table 3 presents the correlation matrix for the variables. The correlation analysis show that Equity/asset ratio, Deposit/asset ratio and inflation have positive relationship with ROA, while Non-performing loan, Operating expense/asset ratio and Loan/asset ratio have negative relationship with ROA.

4. EMPIRICAL RESULTS AND DISCUSSION

In order to select the suitable model for our study, we run a Hausman Test before applying Random Effect Model. Table 4 shows that

Table 4. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq.d.f.	Prob.
Cross-section random	6.668203	6	0.3526

Table 5. Random effect regression results

Variable	Coefficient	Prob.
Constant	0.021106	0.0002
NPL	-0.101417	0.0062
EQA	0.061688	0.0006
OPEAS	-0.316914	0.0408
DPAS	0.011549	0.0552
LOANAS	-0.030008	0.0003
INF	0.014914	0.1438
R ²	0.593053	
Adjusted-R ²	0.559605	
F-statistic	17.73073	
D_W	1.412916	

P-value from Hausman Test is 35.26% (more than 5%) so we accept Random effect model as a suitable model.

The table 5 presents that the empirical results of regression of model using ROA as the profitability variable. The adjusted R-squared of 56% shows that the model is significant and the 56% of variability of the bank profitability measured through ROA is explained through the variance of the factor we took in this study as determinants in the bank profitability.

From the result of random effect regression, showing that the value for the F-statistic is 17.73 and is highly significant to show the appropriateness of the model.

Non-performing loan ratio: This variable has a significant and negative impact on profitability of the listed banks. This result is in line with prior studies by Son et al. (2015).

Equity to Assets ratio. The result shows that Equity to Assets ratio has significant and positive impact on ROA. This result is consistent with the conclusion of earlier studies of Mamatzakakis and Remoundos (2003), Hassan and Bashir (2003), Bourke (1989), Zaman et al. (2011) and Almazari (2014).

Operating Expense to Assets ratio. This variable has significant and negative impact on profitability of banks. Same results have been found by Athanasoglou et al. (2006), Zaman (2011), Samad (2015). This result presents the difficult situation of the banking system in Vietnam during this period. The increase of bad debt forced banks to be more cautious about new lending, therefore, the cost of dealing with bad debts and the increase in pre-lending costs have eroded the banks' profits. This results also is supported by study from Mamatzakakis

and Remoundos (2003), this paper found that personnel expenditure over total asset has significant and negative relationship with profitability. The result is also in line with expected relationship.

Deposit to Assets ratio. This variable has positive impact on profitability but the statistic value is insignificant.

Loan to Assets ratio. This variable has significant and negative impact on profitability of banks. This result can be explained by that non-performing loan increased in the studied period. Another reason is that as a result from lack of liquidity the competition in lending market taking place among commercial banks lead to reduction of profitability of banks. This result also finds the similarity in the studies of Vong (2005), Vong and Chan (2009) and Acaravci and Calim (2013).

Inflation ratio: the sign for this macroeconomic factor, INF, is positive, but it is not a significant factor to Vietnam listed banks profitability. The impact of inflation on banks performance depends on the bank's management (Perry, 1992). By properly predicting inflation, the revenue can be made faster than cost. The reason to explain this result in Vietnam is that as an immature banking industry, this period witnessed a variety of problems such as: bad

debts, lack of liquidity, high competition with foreign banks that make an insignificant impact of inflation on profitability though there is an improvement in forecasting inflation.

5. CONCLUSION

The main aim of the study is to examine the impact of bank-specific factors and macroeconomic variable on the Vietnam listed banks' profitability over the period for 2007–2016 by using the return on assets ratio (ROA) as a proxy of profitability. The previous findings in the literature are examined. The results from this study found that bank-specific factors such as non-performing loan ratio, operating expenses to total assets ratio and total loan to total assets ratio have significant negative impact on the return on assets, while equity to assets ratio is found to have a positive significant impact. However, deposit to assets ratio and inflation ratio are found to be insignificant an affecting the profitability of banks. It is a recommend for banks in Vietnam that in order to increase the profitability, bank management should quickly resolve the bank's bad debt, as well as improve asset quality management, enhance equity and implement modern technologies to reduce operating costs, increase operating efficiency.

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Methodology of Stratification Research of Modern Civil Society in Russia*

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Abstract. The subject matter of the research is the genesis of the methodology of stratification of modern civil society in Russia.

The objective of the research is to analyze the methods of studying socium and isolating the strata of modern civil society.

The methodology of the research is based on general and special methods of scientific knowledge: generalization, comparison, structural-functional (system) analysis.

This article considers a wide range of parameters, combined in the factors of stratification such as political loyalty, economic well-being of the region and social tension.

The stratum of modern civil society is treated as a form of classification of civil society, graded by focal features, characterizing the form of the state and its social structure: social, economic, cultural needs, political priorities; educational level; types of elitism; social guarantees of the state; gradation of consumption balance; activity in the protection of legitimate interests, rights and freedoms; conflictogenity of the socium [1, 2].

Social stratification is considered from the point of view of differentiation of large elements of the social structure of society into strata (layers), expressing their social ranking by income, education, status, social prestige and other objective and subjective criteria.

The novelty of the research is determined by:

Correlation of groups of factors (social, political, economic) and their weight significance in the formation and the conciliation of civil society strata interests;

The introduction of the concept into the scientific use, the definition of the structural elements of the modern Russian socio-political public formation; presentation of its interdisciplinary evaluation in the context of analysis of socio-political problems of aligning the interests of strata of modern civil society in the Russian Federation;

Study of the genesis of the stratification of civil society on the basis of the current characteristics of its strata for developing an interdisciplinary approach to analyzing the forms and intensity of social and political conflict, the problems of reconciling interests.

Keywords: civil society institutions; interests of civil society strata; conflict nature of civil society strata; social formation (socio-political); protest activity of citizens; political activism of the electorate; strata of modern civil society; stratification.

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Методология исследования стратификации современного гражданского общества в России*

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Аннотация. Предметом исследования является генезис методологии стратификации современного гражданского общества в России.

Цель исследования – анализ методов изучения социума и выделение слоев современного гражданского общества. Методология исследования основана на общих и специальных методах научного познания: обобщение, сравнение, структурно-функциональный (системный) анализ. В статье рассматривается широкий спектр параметров, сочетающихся в таких факторах стратификации, как политическая лояльность, экономическое благополучие региона и социальная напряженность. Слой современного гражданского общества рассматривается как форма классификации гражданского общества, классифицируемая по фокусным признакам, характеризующая форму государства и его социальную структуру: социальные, экономические, культурные потребности, политические приоритеты; образовательный уровень; виды элиты; социальные гарантии государства; градация потребительского баланса; деятельность по защите законных интересов, прав и свобод; конфликтогенность социума [1, 2].

Социальная стратификация рассматривается с точки зрения дифференциации крупных элементов социальной структуры общества на страты (слои), выражающие их социальное ранжирование по доходам, образованию, статусу, социальному престижу и другим объективным и субъективным критериям.

Новизна исследования определяется путем:

- корреляции групп факторов (социальных, политических, экономических) и их весовых значимостей в формировании и согласовании интересов слоев гражданского общества;
- введения концепции в научный обиход, определения структурных элементов современного российского общественно-политического формирования; представления ее междисциплинарной оценки в контексте анализа социально-политических проблем согласования интересов слоев современного гражданского общества в Российской Федерации;
- исследования генеза расслоения гражданского общества на основе современных характеристик его слоев для разработки междисциплинарного подхода к анализу форм и интенсивности социально-политического конфликта, проблем примирения интересов.

Ключевые слова: институты гражданского общества; интересы страты гражданского общества; природа конфликта страты гражданского общества; социальная формация (социально-политическая); протестная активность граждан; политическая активность электората; страта современного гражданского общества; стратификация.

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The socio-political problems of matching the strata interests of modern civil society in the Russian Federation are important to ensure social agreement, to create effective mechanisms for interaction between existing social institutions and authority structures, social organizations that have power (quasi-institutions of civil society), to ensure the legitimate interests of citizens, and also to elaborate the scenario parameters of the socio-political development of the country by the public authorities and regional, municipal government to prevent the growth of protest activity and conflictogenity in the society.

The world experience of scenario analysis to forecast the processes of matching the strata interests of modern civil society is relevant for determining the key factors for matching the interests of strata of modern civil society, taking into account the limitations imposed by the demographic, educational and production processes of the future economy [3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14].

An important theoretical and methodological approach of the research is a sociological approach based on theories and conceptual approaches in the field of the sociology of political relations, social structure and stratification, economic and regional sociology, the sociology of power and elites as private sociological theories, as well as the conceptual principles of social conflictology in the sphere of economics and finance, the sociology of social institutions and organizations, as well as the conceptual foundations of social risk and the sociology of security.

The methodological concepts of social stratification are covered in numerous studies and works by Russian and foreign authors whose scientific developments can be combined into several groups:

1. Revealing sociological approaches. In the framework of the development of the methodology concept of social stratification, their results are represented in the works of the classic scientists of sociology M. Duverger, R. Merton, P. Sorokin, E. Giddens, and others [12, 13, 14, 15, 16, 17, 18]. T.I. Zaslavskaya played a crucial role in the studies of this group. The researcher substantiated and implemented the modern concept of social stratification of Russian society [19, 20].

2. Substantiating economic approach to stratification. The scientific works of this group introduce the notion of economic stratification, calculated stratification [21], problems of inequality and pov-

erty [22], processes of changing social and economic status [23, 25].

3. Based on a political approach to understanding stratification and identifying its various aspects: at the macro-political level, revealing the genesis of economic interest groups and regional interest groups, the problems of criminalization of the initial stage of capital accumulation, carried out at the Institute of Criminology under the Russian Prosecutor General's Office and the Association of Criminologists (1996–2016). It was covered in scientific sources [25, 26, 27] including the processes of changing the political regime; problems of formation of the lytic elite [28, 29]; understanding political risks [30, 3, 32].

4. Devoted to the development of the methodology of ethnic conflictology, as a social phenomenon, closely associated with social stratification [31, 32, 33].

5. Associated with the substantiation of the constitutional approach to understanding this social phenomenon [36].

6. Research problems of inequality of regional development, inter-budget relations, population concentration in large cities, phenomena of population reduction and pauperization of large rural areas [37].

While researching social stratification, it is reasonable to use the notion of social space, in which the vertical and horizontal distances are not equal. The outstanding sociologist and culturologist P. Sorokin believed that within this approach the starting point in stratification is social status [13]. In his opinion, the distance inequality between statuses is the main feature of stratification. The basis for stratification is income, power, education, prestige. At the same time, people occupying the same positions belong to the same stratum in all parameters.

Rimashevskaya N.M. proposed a stratification structure based on the class approach: 1) 'elite groups', ranged according to the property capital and its power influence in comparison with the largest foreign counterparts; 2) 'regional and corporate elites', distinguished by the social impact at the level of the constituent entities of the Russian Federation and sectors of the economy; 3) the 'upper middle class' in Russia—close in property value to the world living standards, with the potential for economic growth; 4) the national socially 'dynamic middle class', whose legitimate revenues allow it to

meet middle-to-high standards of consumption; 5) Russian 'outsiders' with low social and adaptive potential and social activity, legal incomes below the average level; 6) 'marginals' that are not adapted to the social and socioeconomic environment, prone to antisocial ideologemes; 7) 'criminals' actively acting outside the legal field and integrated into the national economic system and latently affecting the social structure [38, 39].

The vertical stratification system was developed by T. Zaslavskaya. [40]. The 'top stratum' is small in economic state. According to the scientist's point of view, this stratum is the driving force of state-political, economic transformations. It figures prominently in the power structures of the country. The «middle stratum» unites representatives of small and medium-sized businesses, bureaucracy, qualified specialists and workers.

According to Zaslavskaya's hierarchy marginal groups are represented by the 'bottom stratum' of low-skilled and unskilled workers, unemployed, and refugees; as well as 'the social bottom' which consists of criminals and the individuals with an antisocial behavior.

Zaslavskaya introduced the concept of the 'transformational structure of society' into scientific use, substantiating the role of cognitive potential in terms of the specific social quality of society — its ability to self-development and constructive impact on the development of the state.

O. Kislitsyna considered the index of social progress to determine the place of the Russian Federation in the world life quality rating [46]. In her opinion, social progress is the ability of society to satisfy basic human needs of citizens, to establish a basis that will allow population groups to raise or permanently maintain a high quality of life, and, accordingly, life expectancy, to create conditions for achieving their maximum personal potential.

M. Galas, M. Rylskaya consider the problem of matching the interests of civil society strata as one of the causes of conflict situations. Stratification conflict is interpreted as a factor in the development of social relations. While developing the socio-economic and political situation of the strata also change. Conflict in this aspect is an indicator of the relevance of social transformations in order to maintain a balance of strata interests [42].

The analysis determines the following scientific schools and the results of empirical studies of the stratification of modern Russian society.

The National Research University "Higher School of Economics" has made a fairly successful attempt to stratify the society on the basis of 'trust-distrust' to the main social institutions [43].

The School of Science by L. Tretyakova based on the Belgorod State National Research University researches the stratification of civil society in the system of economic relations [44]. When identifying and describing social strata, the representatives of this approach use the criteria of 'quality of life', access to 'authoritative resources', the existence of structures for 'representing interests', characteristics of 'labor potential' and the conditions for its use.

Property relations are the basis of the concept of gender stratification by Professor G. Sillaste [45]. The concept is based on the division of society into socio-class, national, socio-demographic, socio-professional and socio-territorial structures. Each subclass of the social structure consists of a set of social groups classified according to the criteria of size, status, density of communication links and sustainability.

The scientists of the Institute of Sociology of the Russian Academy of Sciences introduced the scientific concept of stratification of Russian society into scientific use [46]. The problem of social stratification: a real social status of individuals in any case is only a consequence of their being in the framework of certain social fields (power, economic, cultural etc.), characterized by a definite set of status positions.

Serious scientific developments in the social stratification field were made by the team of the Center for the Study of Social Structure and Social Stratification, headed by Professor Z. Golenkova [47]. They perform the stratification of society, singling out strata and groups of the population with the whole system of social conflicts and contradictions, united according to regional, social, professional, age characteristics.

This article treats the genesis (system analysis of processes) of stratification and socio-political formatting of the civil society of Russia in accordance with the structural and synchronic study of objects from 2005 to 2016 using the available data for the first half of 2017. The system analysis was accomplished on the basis of the sociological research "Conflictogenity of the Stratification Process of Civil Society and Social Interests as a Risk Factor and Threats to Regional Stability" according to the methodology by G. Sillaste.

Most successful social groups in promoting their interests (% of respondents)

Social groups	Total	Donors	Subsidized
1 Government	70.5	61.5	79.2
2 Large business	60.0	53.8	66.0
3 Small and medium-sized business	48.6	30.8	66.0
Defence and law enforcement agencies	43.8	34.6	52.8
4 High-qualified specialists	28.6	30.8	26.4
5 Mass media and show business	11.4	9.6	13.2
Employees	11.4	17.3	5.7
6 Ethnic groups outside the historical territories	10.5	15.4	5.7
7 Students	8.6	11.5	5.7
Different confessions	6.7	7.7	5.7
8 Different spheres of the shadow economy	4.8	7.7	1.9
9 Retiree	1.9	0.0	3.8

The differentiation of the indicators measured in the research was accomplished according to economic success of the region, i.e. subsidy or economic independence).

Social changes and processes of the 1990s radically changed the social structure of the population of Russian regions. The stratification of the social structure has brought a new group into the arena of social actions. These are owners. They differ not only with their living environment, but also in their property segmentation: from the oligarchic cohort of the super-rich and wealthy to the wealthy, from the middle segment to the poor and the indigent.

Table 2 will clarify how different strata and groups of people managed to promote their interests, depending on the type of donor and subsidized regions. There are nine social interest promotion groups.

Social interests, as a reflection of the real causes, actions formed in social groups due to their differences in position and role in the life of the regional society, generate the diversity of social groups on this basis.

The social interests of different social and social-role groups (producers, employees, managers, investors, creditors, savers, etc.) will diverge due to developing social and political contradictions, as well as the desire for access to the allocation of material resources (including property) in the region.

The process of the society stratification in general and in regional communities, in particular, has various forms and in different spheres of life. At present, stratification has taken different forms. The most popular of them are as following:

- property (in terms of property security)
- political (in terms of the depth of discrepancies between political views and preferences among the population)
- economic (stratification of owners and employers)
- class
- confessional (different confessions)
- national-ethnic (different nationalities and ethnic groups).

The reason for the disagreement of the interests of the social formation strata may be its longstanding, but not resolved problems. These include, in particular, socio-political tension, economic instability, the level of social inequality (differentiation of stratification) and, as a result, an increase in the trend of deviant behavior in society.

In addition, the situation may be exacerbated by the dependence on funding of the center (subsidization) and low subsistence level of the population, the sense of historical injustice of repatriated peoples, uncontrolled exploitation of natural resources, hostility towards migrants, growing crime, deterioration of the ecological situation in the places of residence.

When internal regional problems are recognized by a significant part of the population, the conflict potential is accumulating in the region. That leads to an increase in the general discontent and aggressiveness of some groups and individuals.

If, in the general social plan, the growth of potential conflict is associated with a loss of trust and a loss of authority, then at the regional level its indicators are determined by the activation of various socio-political parties and movements while struggling for power and influence among the masses. At the same time, the state of dissatisfaction and anxiety, which has been lasting for quite long time, is usually the cause of protest actions as rallies and demonstrations, the emergence of extremist manifestations and deviant behavior. It is significant to note that estimating the mismatch of the strata of the existing social formation is also an indicator of the emergence of deviance.

Summarizing the results of the research, we can draw conclusions.

1. There is a deformation of stratification processes, stratification of population groups according to income and lifestyle, destruction of general public relations, moral foundations and values. Stratification destruction undermines the confidence of citizens in authority and public institutions, initiates the restructuring of the political regime, the state system. These terms create risks for social stability.

The modern socio-political formation can be interpreted as a pluralistic, multi-vector, mentally antagonistic, transforming into a class, latently and/or actually conflictogenic, which forms an emerging civil society with sustainable social, political, and legitimized quasi-civil institutions, with a tendency to the protest activity growth and social tension, of the strata of civil society in the regions of the Russian Federation.

2. The demoststructure of the stratification Russian model is impossible without the research of the effectiveness of government measures to ensure the balance of the budgets of the constituent entities of the Russian Federation, the distribution of inter-budgetary transfers from the federal budget to the budgets of the constituent entities of the Russian Federation in the context of matching the interests of the civil society of Russia; as well as the implementation of Federal Targeted Programs and the implementation of the Federal Targeted Investment Program; allocation of subventions, provided from the Federal budget to the budgets of the constituent entities of the Russian Federation to exercise delegated powers of the Russian Federation to provide certain categories of citizens with Government social assistance. The influence of the state monetary, customs and tariff, tax policy is significant on the stratification and social formatting of the civil society of Russia.

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Limitations of Modern International Finance and Accounting Practices through Analysis of Short-Termism

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Abstract. This paper is devoted to analysis of short-termism in its influence on modern international finance and accounting practices. One might say that short-termism is a problem of a particular company and the market should correct this inefficiency in a usual way. However, many analysts and scientists suggest that it is problem of the society as well. Short-termism is not a recent issue in the world of finance and accounting, however, there are not many extensive researches available. The topic became more popular after 2008–2009 when financial crisis hit the financial world and made professionals analyze what went wrong, at what stage and why. The overview of main views on the issue is provided in the article. Main causes of focus on short-term outlook are reasoned in this work. Formal foundation of short-termism and main disadvantages of it is disclosed. In order to mitigate negative impact of short-termism it is recommended to implement three-part model.

Keywords: short-termism; creative accounting; financial results manipulation; internal control.

Выявление недостатков современной международной финансовой и учетной практики посредством проведения анализа явления «шорт-термизм»

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Аннотация. Статья посвящена анализу явления «шорт-термизм» и его влиянию на современную международную финансовую и учетную практику. Можно считать, что шорт-термизм является проблемой конкретной компании, и эта проблема будет скорректирована рынком в стандартном порядке. Однако многие ученые и практики предполагают, что это проблема всего общества. Шорт-термизм не новое явление в мировых финансах и учете, однако сейчас не существует достаточного количества исследований в этой области. Данная проблематика стала более популярной после 2008–2009 гг., когда кризис настиг финансовую сферу и заставил профессионалов

начать анализировать, что же пошло не так, когда и почему. В данной статье представлен обзор основных взглядов на проблему, рассмотрены основные причины и недостатки шорт-термизма и рекомендована трехуровневая модель для преодоления негативных последствий данного явления.

Ключевые слова: шорт-термизм; креативный учет; манипуляции финансовыми результатами; внутренний контроль.

INTRODUCTION

It is important to mention several factors that underlie importance of phenomenon of short-termism. Firstly, in the case when institutions including public regulators are subject to short-term thinking, consequences may have an impact on all market participants in different ways, for example causing adverse macroeconomic and social consequences, negatively affecting economic growth, increasing the unemployment rate or deteriorating price dynamics.

Secondly, an excessive focus on short-term objectives of one company may result in other companies behaving similarly and in a simultaneous way. For example, this behavior may take the form of excessive risk-taking in order to maximize short-term profit. As a result, short-termism leads to serious macroeconomic imbalances causing a sudden economic downturn.

Finally, considering the fact that short-termism often leads to the neglect of investment and human activity, it reduces international competitiveness of the company and its capability to meet new market challenges and demands in an effective manner. Short-termism thus results in the reduced potential not only of individual companies, but also of the whole economy.

It is important to stress out that short-termism should not be considered as a problem 'per se', mainly negative consequences appear when long-term goals are sacrificed upon due to excessive concentration on short-term benefits obtained and short-term results expected. Short-termism serves as a primary reason for existence of specific finance and accounting limitations that have an impact on both the company's performance and wider society.

Urgency of this work is denoted by the fact that consequences resulting from excessive short-termism that is considered as a problem of certain individual or a certain company may be destructive for the whole society and the economy. Based on the above, there is little doubt that mitigating the short-termism would contribute to building a better and more transparent business environ-

ment. Existing problem of negative impact created by short-termism denotes the necessity of further investigation of this issue.

OVERVIEW OF THE LITERATURE. METHODS

To achieve the primary goal of the research, the following information sources were used: works of Russian and foreign authors, publications in professional periodicals and mass media, tutorials and Code of Ethics for Professional Accountants. Additional modern methods of scientific research applied in the work include synthesis that allowed combining results of the analysis provided in the work with an aim of developing efficient and effective model to be recommended for implementation. Modeling and computations were used in assessing long-term impact that short-termism imposes on financial statements.

One of the first who raised concerns about short-termism issue was Martin Lipton in "Takeover Bids in the Target's Boardroom" in 1979. More recent studies on this issue include the study by the Business Roundtable in the US and the Discussion Paper released in the UK by the Department of Business, Innovation and Skills. Although concerns over short-termism and its effects are not new, the reasons for these concerns appear to have changed over a period of time.

Earlier research concerned short-termism as a result of market imperfections due to information asymmetry. On the other hand, recent researchers addressed this issue as a deliberate strategy required of managers by stakeholders.

Consequently, regulators and researchers considered short-termism as being potentially harmful to the credibility of markets in the long run, as well as to the economy, and society in general. Besides, there was a fear that short-termism might have a negative impact on decisions of potential creditors; it may discourage corporate managers from undertaking long-term R&D investments, thus adding to the volatility of capital markets through rapid shifts in investment.

Most existing literature on this issue places its focus on the damage to the economy caused by the short-term outlook of investors with substantial capital (for example, hedge funds and institutional shareholders), as well as on the question if short-termism is the product of investors with substantial capital making managers to act in this way, or whether the investors choose to invest in entities whose managers engage in short-term conduct.

In 2011 Dominic Barton, managing director of McKinsey & Company, appealed to business leaders 'to reform the capitalist system by fighting the tyranny of short-termism' (Denning, 2014). However, the situation is getting worse and worse. In order to understand why it is so difficult to cope with short-termism and financial results manipulation, several studies were used including those conducted by Ernst & Young in 2014, Deutsche Bank in 2011 and 2014, Forbes in 2014, The New Yorker in 2015 and Harvard Business Review in 2015.

The goal of the Ernst & Young report is to contribute to the discussion on short-termism through empirical research conducted for European companies, which have not been the subject of many studies so far. Taking into account the costs that short-termism cause for the whole economy, E&Y strongly recommends considering number of the measures outlined in the report, as well as other instruments that may help to address the excessive focus on short-term goals. If dealt with effectively, it would improve the capacity and competitiveness of national businesses, encourage long-term value creation and contribute to the welfare of society (Kedzior & Rozkrut, 2014a, 2014b).

Even despite the numerous amount of conducted studies, the results are quite controversial and suggest conflicting assessments of causes and consequences of the issue. Depending on the way how short-termism is measured, different opinions are expressed — sometimes even relating to the existence of short-termism in general.

Consequences of short-termism such as creative accounting or human capital neglect are described in articles and studies conducted by foreign analysts. For example, G.D. Chryssides and J.K. Kaler provide comprehensive assessment of ethical issues involved in creative accounting process. Furthermore, their colleagues K. Gowthorp and J. Blake analyze general impact of ethics on accounting and its limitations created due to short-term outlook.

Short-termism as a phenomenon is closely looked at by L. Roger and A. Rappaport in their articles. Moreover, S. Denning and J. Surowiecki consider conditions that have an impact on companies trying to cope with this phenomenon. Corporate short-termism is described in detail by such authors as R. Sappideen and N. Shilon who analyze it in the context of current corporations.

Interlink between remuneration and short-termism is investigated by P. Bolton, N. Scheinkman, C. Andrew and D. Gregg in published articles, where authors suggest that there is direct relationship between compensation and focus on short-term perspective.

In general, as short-termism was not fundamentally studied before XXI century, mainly articles of foreign analysts and studies conducted by large audit companies were used in this research. Additionally, literature on business ethics, financial fraud, remuneration policies and corporate governance was examined in order to investigate preconditions that cause short-termism existence and measures that may be implemented in order to mitigate negative consequences.

MAIN CAUSES AND THE BACKGROUND OF SHORT-TERMISM

In order to understand why the short-termism exists, it is necessary to consider main causes and the background of this phenomenon.

First of all, as mentioned before, expectations and objectives of stakeholders provide for significant impact on the behavior of company's management. Not many stakeholders who have direct power on the company are interested in the long-term prospects — some of them have short-term concerns causing management to act appropriately. While employees require increase in salary, shareholders want to see quarterly profits and good figures in the financial statements. Lenders are interested in the current ability of the company to repay debts, and only general community usually have the most long-term vision among other stakeholders as they are looking at the place of the company in general and are interested in more large-scale issues such as environmental protection.

Attempts to satisfy all expectations at once is rarely possible or effective for business and thus it needs to concentrate on the most significant objectives — implying objectives of the parties who may have the greatest influence on the company.

Usually these appear to be shareholders and other investors.

Secondly, management of the company has constant fear of funds withdrawal and lack of investments of company. As company needs to finance its operations and expansions, it is necessary to be able to attract and retain significant amount of funds. Primary objective of investors is to make profit — and in this case the quicker the profit is made the better for investors.

When deciding on where to invest in, market participants examine financial statements and current figures of prospective companies; inspect recent ratios and stock prices. Thus, as management is interested in increasing volume of investments, they want the company and its figures to look attractive. In order for financial statements to look good, management focuses its efforts on achieving good financial figures and ratios in short-term when new financial inflows are needed. Thus, management is able to slightly manipulate financial figures in order for the public information to look attractive. Consequences of such actions are to be discussed later in the study.

Looking further, when the current investor notices deteriorations in the performance of the company he invested into, he becomes worried about future returns and may think about withdrawing his funds before the situation gets even worse. The wave-making effect may appear and cause other investors to withdraw their investments as well — consequently, the company will not only lose potential funds that it uses for day-to-day operations and future development, but also financial statements will be deteriorated as large withdrawal of funds affects figures dramatically causing new potential investors to make a negative decision regarding investment in this company.

In order to avoid withdrawal of funds by investors, the company will do its best in order to hide financial problems applying different accounting methods. Current practices suggest many ways how the company, legally or illegally, may make its problems undetected by its shareholders and potential investors. In the case when company has problems that should be kept back, the focus of the management is to hide unfavorable details in the short-term with an intention to change the situation in the nearest future. However, when the focus is placed on the short-term without thinking about long-term consequences, the situation for the business may

even worsen when it appears that the company is not able to manage its problems effectively and quickly.

Remuneration schemes used by many companies also play significant role in determining time horizon for management's attention. Currently lots of large companies implement performance-based pay system, which implies payments to employees based on the performance achieved. There are several reasons why the company chooses this system exactly:

Performance-based pay promotes behavior desired by management and shareholders;

It inspires employees to implement new efficient ways of work;

It assists in retention of high-performing workers and discourages low-performers;

Finally, many employees prefer this system to be used themselves as it works as additional incentive for them.

While this system is commonly used, in many cases it causes short-termism to appear. In order to implement performance-based pay, every employee is assigned with goals, KPIs and is then assessed against these targets. This system may be rather motivating for employees, but a huge difference exists between theoretical aspects and its practical implementation.

The problem is that it is rarely applied effectively enough to deliver strategic outcomes of the business. This system may lead to dysfunctional behavior (Ryan, 2015) — for example, salesmen may get involved in window dressing in order to meet sales target set by applying a 'sale and return basis' in the final month of the year, with the inherent understanding that the goods will be returned in the following month of next financial year. This also leads to short-term thinking and acting, where salesmen never put the customer above the sales target.

For top-management staff, which is not an exclusion from the rule, quarterly profits and short-term figures are often set as KPIs to be achieved — and this is made in order to make shareholders and potential investors satisfied as discussed above. Thus, as management wants to receive high salary and related bonuses, they are self-motivated to achieve quarterly figures. When manager is putting all the efforts on short-term results achievement there is no time left to think about the strategy and long-term outcomes — thus, short-termism prevails.

The next point to consider as background of the short-termism phenomenon is allocation of goals in the company depending on time phasing. It is

quite common that every employee is responsible for some short-term goals within his or her area of work, but also for contributing to achievement of long-term goals. Long-term goals may not be always clear or evident for the low grade staff and moreover not all of them have a strategic vision on the company's future — thus, they decide to focus on the short-term goals they have.

Lack of specific strategic goals among employees and absence of relevant reward system together lead to the situation when employees do not align their activities with the global goals of the business and have no ability to guide themselves through strategic directives set by the management. Such disorientation often results in ineffective resource utilization and short-termism.

Moreover, inability to allocate your time and efforts efficiently may cause useless actions and high proportion of waste of time and resources. While this problem may be attributed to low-level staff, it may also be present at higher levels of the company. These skills need to be improved so they would not serve as additional underlying reason for short-term focus. Otherwise sooner or later the situation arises when due to inefficient time allocation employees concentrate all their efforts on short-term targets just before the deadline in order to ensure at least some level of acceptable performance.

Another underlying reason is relationship between the length of Chief Executive Officer (CEO) tenure and the short-term way of thinking. While some studies suggest longer CEO tenure leading to better performance, other assume that longer tenure and higher pay lead to CEO being more inclined towards taking risks. After investigating different studies available, it can be assumed that it is more often that longer CEO tenure leads to weakened relationships with customers and worsened performance which may cause financial results manipulation in order to maintain the CEO position. On the other hand, when tenure is short, CEO aims at having high and convincing short-term results thus showing that even during such short employment he or she is able to achieve high results and improve company's performance.

Reasons mentioned in this section are not the only ones that serve as a background for short-term outlook of employees and management of the company — the list is extensive and not limited only by these causes. Studies conducted by various companies and researchers emphasize that short-termism

may appear in any company and cause consequences affecting the business suddenly.

FORMAL FOUNDATION AND MAIN DISADVANTAGES OF SHORT-TERMISM

Discussion of reasons behind short-term thinking may be convincing regarding necessity of taking this issue into account and placing efforts in mitigation of its potential effects. In order to estimate how bad this phenomenon is, it would be useful to estimate its advantages and disadvantages.

It is rather difficult to claim that short-termism provides for some benefits — thus, it should be stressed out that this section does not compare benefits and drawbacks of the issue under consideration, but assists in deciding whether some formal foundations may be found as soft justification for existing disadvantages.

Justification of short-termism is based on its causes and looking behind them — here it is necessary to take into account personal motives and reasoning of employees. While formal foundation may not be convincing enough for acceptance of this phenomenon existence, it still helps us to understand why it happens this or another way. It is also necessary to point out that justification of short-term outlook is based on the causes mentioned in the previous section, but this time they are considered from more person-specific side of company's management and employees.

Looking back at consideration of remuneration schemes, while it creates conditions for existence of short-termism, it still provides incentives for outperformance. A paper in *The Journal of Finance* found that firms that give CEOs high equity incentives outperform those with low equity incentives by 4–10% per year (Lilienfeld-Toal & Ruenzi, 2014). It is assumed that executives are intrinsically motivated, and that extrinsic motivators like performance-based pay system only crowds out these intrinsic motivators.

The evidence suggests that those executives who are not provided with incentives may simply choose to work in a quiet and slow manner and allow the status quo to persist, avoiding difficult tasks such as major reorganizations, engaging with difficult partners and negotiations, or unpopular decisions. Thus, while short-termism may be present due to application of performance-based pay, it still provides the management of the company with additional

incentives that are to improve its performance and increase profitability and effectiveness.

Furthermore, considering the issue of attracting new investment, the situation is almost the same. While short-termism exists due to necessity of showing good figures to potential investors in the short-run, it still allows the company to obtain additional funds for further development. There are two different options for where this situation might evolve to. On the one hand, the company may concentrate on the short-term, assure nice figures and ratios to be shown to potential investors, attract new investors and make good use of these funds. The outcome here is positive as new investments are used so effectively that the company will be able to retain new investors and succeed from this decision in the long-run.

On the other hand, let us consider another outcome of the same situation. The company concentrates its efforts on short-term figures, new investors decide to invest but after that the company is not able to make a good use of additional resources. Thus, the ratios and figures will deteriorate even more seriously and may cause unfavorable consequences resulting in loss of investors and worsened performance. However, as the company needs investments in order to develop, short-termism in this case may still be justified — taking into account possible consequences of management actions.

Another possible justification for short-termism concerns expectations of shareholders. In many situations this group of stakeholders is considered to be the most significant one as they have power and control over the company and may influence crucial decisions. Thus, actions of management aimed at achievement of short-term profits and return for the shareholders may be understood. However, it is vitally important to ensure that these actions will not have large negative effect in the future — otherwise loyal shareholders may lose confidence in the company and trustworthiness will get worsened causing funds withdrawal and loss of key investors.

As mentioned before, these reasons are not to justify myopia of executives in full, but to provide some examples for better understanding of short-termism. While short-termism is generally considered as a negative phenomenon, under certain circumstances it may ensure rather acceptable outcomes.

Some of disadvantages might be clearly seen, while some are to be revealed only in the long-term outlook of the company's operations. The list of drawbacks is not limited only by those mentioned

below and may be extended depending on the specific situation in reality.

First of all, short-termism causes unfaithful representation of company's performance. In order to make shareholders and investors satisfied, management manipulates accounting figures so that financial ratios look good for some short period of time. Actions aimed at intended overstatement of company's achievements undermine the principle of faithful representation and deteriorates assurance of users in company's financial statements and reports.

Consequently, unfaithful representation leads to misleading results that may cause investors, shareholders, lenders and any other interested party to make decisions they would not make under usual circumstances. Misleading results might be even considered as a violation as they cause irrational behavior and may lead to further losses by market participants.

Another drawback associated with misleading results is loss of confidence of intended users. It is of crucial importance for the company to be trusted by stakeholders in order to be able to attract necessary funds and realize its goods and services efficiently. If the fact of unfaithful representation is revealed, the further relationship between the company and interested parties might be seriously challenged.

Taking it even further, such actions may finally result in undermining market's credibility as a whole due to the fact that companies tend to copy each other's behavior. In order to stay competitive, short-term outlook spread among the industry eventually resulting in the total erosion of credibility.

The next drawback to be mentioned is negative effect on the long-term performance and strategic outcomes. Short-termism is the phenomenon that usually exists at an expense of the company's long-term objectives as it causes insufficient attention to be paid to long-term value creation and the strategy of the company. As long-term objectives are crucial to the company's survival and further operations, it is highly important not to neglect long-term focus.

Besides discouraging long-term value creation, short-termism may also negatively influence long-term investments. Many companies postpone large long-term investments in pursuit of short-term figures and do not replace obsolete or damaged equipment. Consequently, this also leads to deteriorations in the production process, as well as reduced efficiency and quality.

Finally, looking at the problem from the global prospective, some researchers assume that global economic downturn points to short-termism of financial organizations and lenders as a fundamental cause. Probably, this may be explained by the snowball effect — when one company engages in short-term behavior, other companies follow the same pattern causing the whole industry's credibility to be undermined. Furthermore, if short-termism is present on a global level, it does not take long time for serious consequences to appear.

RECOMMENDATIONS

In order to mitigate negative impact of short-termism, we recommended implementing three-part model. The model was developed on the basis of analysis provided and mainly refers to internal processes and conditions.

First part of the model includes promotion of long-term value creation that enables executives and employees to fully understand importance and process of wealth creation and benefits that long-term horizon focus enables for company's performance and strategic success. Establishment of appropriate balance between internal and external perspectives, short-term goals and long-term strategic objectives assists in enhancing sustainable development of the company in the long-term. This balance consequently improves company's value for money consisting of economy, efficiency and effectiveness. Focus on long-term strategy and incentives enables the management to find optimal ways of organizing operational activities and also to achieve stated objectives in the most efficient way. Methods of promotion include deep understanding of business environment; improvements in communication processes; forward-looking strategic measures; de-emphasis on short-term financial performance; changes in the reporting framework towards more strategic

one; application of integrated reporting; and proper corporate governance.

Second part of the model includes remuneration system based on balanced scorecard. Remuneration system that supports long-term focus and mitigates short-termism impact should promote sustainable growth of the company rather than exclusively short-term accounting benefits, and thus it requires a reasonable proportion of compensation to be in an equity-based form. Remuneration system should be initially developed in accordance with four perspectives: financial, customer, internal process, and learning and growth. System should encompass strategic objectives, measures, targets and strategic actions corresponding to each perspective. It is necessary to rationally set strategic objectives in individual areas within the framework of strategic balanced scorecard system. In order for short-termism to be mitigated by the balanced scorecard application, it is necessary to ensure that targets and consequent performance rewards sufficiently represent and guarantee fulfillment of strategic outcomes. Moreover, it helps employees and executives to understand important interrelationships and connections.

Third part of the model includes establishment of internal controls and forensic accounting function. This function should ensure foreseeing, preventing and eliminating accounting and finance limitations created by excessive short-term outlook in a timely and effective manner. Internal control system and forensic accounting element should be introduced so that they are able to detect and prevent fraudulent activities imposed by short-termism. Supervision of internal control effectiveness should be regularly made for estimation if controls still operate and whether new risks require amendments in internal control procedures. This part of the model may be practically implemented only if control processes are regularly performed and ethical principles are being followed.

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Internet Access Cut to the Test of Law in the Democratic Republic of Congo: Violation of the Rights of the Users or Imperative Security?

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Abstract. This article discusses the freedom of expression and the right to information that are constitutionally guaranteed. The authors emphasize that the use of the Internet is a right but the fact of depriving this right to the population constitutes a violation of rights and individual liberties of citizens and implicates the democracy.

Keywords: cutting; internet; political democracy; the rule of law; constitution; fundamental freedoms.

Интернет-доступ в свете закона в Демократической Республике Конго: нарушение прав пользователей или императив безопасности?

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Аннотация. В статье рассматривается свобода выражения мнений и право на информацию, гарантируемую конституцией. Авторы подчеркивают, что пользование Интернетом является правом, но факт лишения этого права для населения представляет собой нарушение прав и индивидуальных свобод граждан, что противоречит принципам демократии.

Ключевые слова: Интернет; политическая демократия; верховенство закона; конституция; основные свободы.

INTRODUCTION

The Congolese State has expressed in its Constitution the will to build the rule of law and a nation based on true political democracy¹. However, these two related concepts imply, for the former, a State which all the authorities act in accordance with the rules of law in force and in which all individuals also enjoy guarantees and fundamental freedoms². For the second, he expresses the idea that citizens participate in power. The idea that freedom is natural to man and that the state does not have to intervene to 'create' it, but must confine itself to recognizing it and allowing it to be exercised without hindrance³.

However, it is found that this willingness, and therefore contradictory, what is involved, access to the internet in D.R. Congo cuts have become like a habit. About, every time during the uprisings caused by political demands, the Congolese State deprives users internet access⁴. The last two report January 2015⁵ and December 2016⁶. The first was during a popular uprising raised by the challenge of changing the

electoral law⁷. The second, by the contestation of the continuation of the mandate of the President of the Republic, after exhausting his two constitutional terms⁸. In this regard, Japheth TEKILA notes that: "sometimes the public authorities block access to web sites containing keywords such as 'Yebela', 'Avisé-toi', 'Article 64' (Const. R.D. Congo), 'Do not touch to my constitution', etc."⁹

In the light of the foregoing, it seems necessary to ask ourselves the following questions: what are the right of expression and the right to information? What are the circumstances, the cause and the purpose of the cutoff of internet access which took place in DR Congo? The decision to cut access to the internet, is it consistent with respect for freedom of expression and the right to information?

Answering these questions requires identifying the notion of freedom of expression and the right to information, address the issue of the circumstances, causes and purpose of these decisions of cuts and finally, to analyze the nature of these decisions against one side of the edge the exercise of freedom of expression and the right to information and the other side to the character of the sanction arising from beyond the limits of this freedom and right.

I. NOTIONS OF FREEDOM OF EXPRESSION AND THE RIGHT TO INFORMATION

It is about to do a cap on their legal basis, then define the limits of their exercise, and finally

¹ Cf. Préambule de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 Janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

² Raymond, Guillien, & Vincent, Jean. (2005). *Lexiques des termes juridiques* [Glossaries of legal terms]. 15^{ème} éditions. Paris, France: DALLOZ, p. 273. s.v *État de droit*.

³ *Ibidem*, p. 217. S.V *Démocratie politique*.

⁴ Cf. Tekila, Japhet. (2017). La liberté d'expression sur internet au carrefour des droits de l'homme et des peuples en Afrique centrale. Ce dont on ne parle pas [The freedom of expression on the internet at the crossroads of the rights of man and of peoples in central Africa. What we do not speak]. *Congo-Afrique: économie, culture, vie sociale*, 514, pp. 330–340.

⁵ Cf. OKAPI, «SMS et internet coupés en RDC», In *Radio OKAPI*, [En ligne] disponible sur www.radiookapi.net/actualite/2015/01/20/sms-internet-coupees-en-rdc, (Page consultée le 01.01.2017 à 08h41).

⁶ Cf. *Matin infos*. «L'internet sera coupé dès ce 18 décembre 2016». *Matin infos*, www.matininfos.net/rdc-le-service-internet-sera-coupe-des-ces-18-decembre-2016.

⁷ Cf. RFI. «RDC: empoignades sur la loi électorale dans la rue et au parlement». *RFI Afrique*, www.rfi/afrique/2015113-rdc-empoignades-loi-electorale-rue-parlement-badibangaramazani-shasari.

⁸ Cf. *Paris Match*, «RDC: manifestations à Kinshasa pour la fin du mandat de Kabila», In *Paris Match*, [En ligne] disponible sur www.parismatch.com/actua/international/RDC-manifestation-a-kinshasa-pour-la-fin-du-manda-de-kabila-1148063.

⁹ Cf. Japhet Tekila, *Art. Cit.*, pp. 330-340.

address the issue of their importance in a democracy.

The legal foundations of freedom of expression and the right to information are internal and international. At the internal level, reference is made to the Constitution, in its articles 23, paragraph 1, and 24, paragraph 1, which have respectively for the first: "Everyone has the right to freedom of expression"¹⁰ and for the second: "everyone has the right to information."¹¹ According to the international level, there is, for example, the African Charter of the rights of man and peoples of 1981 which article 9 stipulates: "1. Everyone has the right to information. 2. Any person has the right to express and disseminate his opinions within the laws and regulations."¹² We can also mention the Universal Declaration of human rights which article 19 states: "Everyone has the right to freedom of opinion and expression, which implies the right to not be worried about his opinions and to seek, receive and to spread, without consideration of borders, information and ideas by any means of expression whatsoever."¹³

How to understand the freedom of speech and the right to information? Freedom of expression is recognized latitude individually any person to be able to express his opinion by all means: speaking, writing, image, gesture, etc.¹⁴ The right to information about him can be defined as a prerogative of individually recognized a person to enjoy, for information. Freedom of expression is manifested by the show, while the right to information is manifested by the reception. Both are corollaries

¹⁰ Article 23 alinéa 1 de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 Janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

¹¹ Article 24 alinéa 1 de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

¹² Article 9 de la Charte Africaine des Droits de l'Homme et des Peuples de 1981.

¹³ Article 19 de la Déclaration Universelle des Droits de l'Homme du 10 décembre 1948.

¹⁴ Cf. Pierre Tourev. *Dictionnaire en ligne la toupie*. www.toupie.org/Dictionnaire/liberte_d'expression.htm, s.v. liberté d'expression.

of the freedom of the press, of assembly, of demonstration, of association, etc.¹⁵

Junction points between freedom of expression and the right to information are that they are both legally guaranteed and protected, individual, usable by the same means and limited in their exercise.¹⁶

1. Legally guaranteed and protected: exist based on the law and their violation is also constitutive of a legal sanction;

2. Individual: their exercise is not conditioned by a group, which means that we can exercise it individually;

3. Can be used by the same means: freedom of expression and the right to information are almost exercisable by the same means, it is among others, print media, radio, television; Internet; conferences, debates, points of Press, songs, slogans, meetings; of literary and artistic works in all their forms (written publications, shows, movies, etc.)¹⁷;

4. Limited: that is their exercise is subject to certain limits that must not exceed under penalty of committing offences.

As mentioned above in point 4, the exercise of freedom of expression and the right to information knows limits.

Indeed, there are for example article 23 paragraph 2 and article 24 paragraphs 2 and 3 of the Constitution which stipulate, respectively for the first: "this right includes the freedom to express his opinions or convictions, including by speech, writing, and the image under reserve of the respect of law, public order and good morals."¹⁸ For the second "freedom of the press, freedom of information and broadcast by radio and television, the print media or any other means of communication are guaranteed subject to respect for public order, public mor-

¹⁵ Cf. Les articles 24 al.2, 25, 26 al. 1, 37 al. 1, de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

¹⁶ Cf. EUPOL RD CONGO et al., *Guide des libertés publiques*, Kinshasa, S.L., 2012, pp. 55-56.

¹⁷ *Ibidem*. p. 70.

¹⁸ Article 23 alinéa 2 de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

als and the rights of others. Procedure for the exercise of these freedoms are set by law.”¹⁹ The article 31 of the Constitution stipulates: “everyone is entitled to respect for his private life and secrecy of correspondence, communications or any other form of communication.” It cannot be infringed this right only in cases provided by law.²⁰

So we can understand that the limits of freedom of expression and the right to information are: public order, morals and the rights of others. These limits are provided for in the legal standards and are strict interpretation.²¹ This means, only laws obey the principles which set the terms of their exercise and that these principles must be entered in specific texts. These limits should not be diverted to other purposes and in particular to silence any challenge or to protect the benefits or privileges.

Concepts such as the public order, national security or even morals are not defined by the texts. They should be interpreted strictly. The disturbing public order invoked to restrict freedoms must be serious, characterized and real.²²

Beyond these limits may be constitutive of a number of offences such as: revelation of professional secrecy; violations of the inviolability of the secrecy of the letters; posting harmful and insults; provocation and incitement to violations against the public authority; threats of attack against persons or property; insults and violence against members of the National Assembly or the Senate, the members of the Government, the custodians of the authority or public force; public outrage to public morals; violations of the rights guaranteed to individuals²³; etc.

¹⁹ Article 24 alinéa 2 de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

²⁰ Article 31 de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C.*, N° spécial, 52^{ème} Année, du 5 Février 2011.

²¹ Cf. EUPOL RD CONGO et al., *Op. Cit.*, pp. 55–56.

²² *Idem.*

²³ Cf. Les articles 73, 70, 74, 75, 76, 78, 135 Bis et ter, 158, 136, 175, 179 du décret du 30 janvier 1940 tel que modifié et complété à ce jour, *J.O.R.D.C.*, Numéro spécial, 45^{ème} année, du 30 Novembre 2004.

The prosecution of these offences is as much subject to the rules of the criminal law against any other offence. It is mainly the individual character and legalistic sentence.

Three concepts deserve to be set initially to well understand the importance of freedom of expression and the right to information in a State said democratic. There are democracy, human rights and public freedoms, as well as the rule of law. The Greek *demokratia*, *demos*, ‘people’, *kratein*, ‘to govern’, democracy can be defined in the simplest way, as a political system in which the people are primary sovereign, exerts his will and contributes to the management of the *res publica* by the authorities.²⁴ Where the expression: “power of the people, by the people and for the people.” Human rights and civil liberties can be understood for the first as independent, inalienable, imprescriptible, ontological, universal rights, the guarantees and protected.²⁵ For civil liberties, they are recognized and guaranteed in a human rights law. Finally, the rule of law is an institutional system in which the public authority is subject to the law. In other words, the rulers and the ruled are all subject to the laws.²⁶

These concepts form an inseparable trilogy which one cannot be individually accepted without the presence of the other two.

Indeed, democracy implies the existence of human rights and public freedoms, and these exist only when they are both enshrined in a text and are actually respected. This trilogy is the basis of the guarantee of the real existence of each of these elements. In other words: where we advocate the existence of one of these three elements, the other two should definitely exist to ensure the presence of the first really real. Human rights and public freedoms are the counterweight of the governed in the face of the roots of the power of the authorities, to the extent that throughout most of the States where the authorities

²⁴ Microsoft Corporation. «Démocratie». *Encarta 2009*, 2008, s.v. *Démocratie*.

²⁵ Lire largement l'article sur le droit de l'homme sur Wikipédia, «Droit de l'homme». *Wikipédia*, https://fr.wikipedia.org/wiki/Droits_de_l'homme.

²⁶ Lire largement l'article sur le droit de l'homme sur Wikipédia, «Droit de l'homme». *Wikipédia*, https://fr.wikipedia.org/wiki/Droits_de_l'homme.

deviate from their mission, which is mostly the well-being of governed, they are not only more than theoretical and practical, but also threatened by an interpretation often in addition that their real meaning.

As elsewhere, in the DR Congo, the internet is a part of undoubtedly important for the exercise of freedom of expression and the right to information. It is easy, fast, and extended channel. Its importance is not without disadvantages, because he is sometimes accused of be used improperly and therefore users are occasionally deprived of access.²⁷ There is no wonder, because the 'rule of law' regarded as the soul of democracy is in crisis.²⁸ The internet tends to become the relay of the "against democracy".²⁹

II. CIRCUMSTANCES, CAUSES AND PURPOSE TO CUT OFF ACCESS TO THE INTERNET IN THE DRC

Two cuts internet access significantly marked the life of the Congolese people. It is first that preceded by the temptation of changing the electoral law, and secondly that surrounding the eve of December 19, 2016, the end of the mandate of President Joseph Kabila.

Access to internet and telephone messaging, sms, were cut on January 20 in the early morning: writing the journal CongoForum.³⁰ He continues: "overnight, the vote of the electoral law by both houses of Parliament, the spokesman for the Congolese Government, Lambert Mende, [immediately] assured that the internet would be reinstated gradually."³¹ The break took place on January 20 and such progressive recovery announced by the Government spokesman announced on 5 February

in a press briefing. Therefore, the break lasted 15 days.

The problem of the change of the election law was the conditioning of the presidential election by a census of the population. Which according to popular opinion, would delay the date of the elections and so would extend the mandate of the president of the Democratic Republic of Congo. Be remembered for heated debates on articles 8 and 13 of the famous Bill.³² Indeed, the Government had tabled a draft law on the amendment of the electoral law of June 25, 2011, having that voters "must be refreshed" taking into account the evolution the identification of the population and demographic data. And the opposition fiercely objected to this Bill and promised demonstrations.

The last week of the end of the presidential term, a letter from the regulatory authority of the post and telecommunications of Congo instructing internet cut toured of social networks. Far from an Assembly, after a few days, the Congolese authorities, noted radio okapi, ordered: "a temporary blocking of all exchanges of images, videos and voice via social networks."³³ The same letter states that «insofar as the partial blocking of raised services would not be possible», will be asked to providers "to block all access" to these social networks.³⁴ The break took place on 18 December 2016 at 23:59. The measure was lifted at midnight on December 28. So it lasted 10 days.

The problem of the presidential mandate was based on article 70 paragraph 2 of the Constitution of January 20, 2011, which content is: "at the end of his term, the president of the Republic remains in office until the effective installation of the newly elected president." After the inter-

²⁷ Voy. Supra. Introduction, paragraphe 2.

²⁸ Cf. Japhet Tekila, *Art. Cit.*, pp. 330–340.

²⁹ Cf. Pierre Rosanvallon. *La contre-démocratie: la politique à l'âge de la défiance*, Paris, Seuil, 2006, pp. 16, 73–75. Cité par Japhet Tekila, *Art. cit.*, pp. 330–340.

³⁰ Cf. CongoForum. «RDC: Lambert Mende annonce le rétablissement d'internet dans les heures qui viennent». *CongoForum*, www.congoforum.be/fr/nieuwsdetail.asp?suitem=1&newsid=200690&Actualiteit=selected.

³¹ Cf. CongoForum. «RDC: Lambert Mende annonce le rétablissement d'internet dans les heures qui viennent», In *CongoForum*, www.congoforum.be/fr/nieuwsdetail.asp?suitem=1&newsid=200690&Actualiteit=selected.

³² Cf. Angelo Mobateli. «Modification de la loi électorale: la lecture du projet de la loi électorale par Évariste Boshab sous les sifflets des débutés de l'oppositions». *Le potentiel*, www.lepotentielonline/i,dex.php?option=conten&view=article&id=11755:modification-de-la-loi-electorale-la-lecture-du-projet-de-loi-evariste-boshab-sous-les-sifflets-des-deputes-de-l-opposition&catid=90:online-depeches.

³³ Radio Okapi. «RDC: les autorités décident une restriction des réseaux sociaux». *Radio OKAPI*. www.radiookapi.net/2016/12/16/actualite/societe/rdc/-les-autorites-decident-une-restriction-des-reseaux-sociaux.

³⁴ *Idem*.

pretation of the constitutional Court³⁵, which said the continuation of the exercise of the function of the president after December 19, 2016 to ensure respect for the principle of the continuity of the State devoted by the same Constitution and to avoid the vacuum at the head of the State³⁶, the opposition did not comply with this decision, arguing, not only that it was a wrong interpretation³⁷, but also the fact that the convening of the electoral body is a deliberate, and considering that after December 19, 2016, the regime would be more constitutional, she promised to apply after that date, article 64 of the constitution³⁸ which stipulates: “every Congolese citizen has the duty to defeat any individual or group of individuals which takes power by force or who exercises it in violation of the provisions of this Constitution.” In other words, the promise of the use of force: the use of violence.

What caused exactly these two cuts? What is the purpose of these cuts according to the authorities?

No one can ignore that the internet is a powerful way to flow of information. Some do not hesitate to call it highway information.³⁹ As such, it is the most effective way to not only express his thoughts, but also to learn and that with inestimable speed, to a virtually unlimited field, so teach it seems to be not manageable.

Indeed, users exchange on everything. In January 2015 as in December 2016 in DRC peo-

³⁵ Jeuneafrique. «RD Congo: la Cour constitutionnelle estime que Kabila peut rester en fonction après la fin de son mandat» In *Jeuneafrique*. www.jeuneafrique.com/324889/politique/rd-congo-cour-constitutionnelle-estime-kabila-restr-fonction-apres-fin-de-mandat.

³⁶ Article 69 alinéa 3 de la Constitution de la République démocratique du Congo telle que révisée par la loi N° 11/002 du 20 janvier 2011 portant révision de la Constitution de la République démocratique du Congo du 18 Février 2006, *J.O.R.D.C*, N° spécial, 52^{ème} Année, du 5 Février 2011.

³⁷ Rédacteur Radio Okapi. «L'arrêt de la Cour constitutionnel a touché des matières verrouillées, selon Valentin Mubake». *Radio OKAPI*, www.radiookapi.net/2016/05/25/actualite/politique/l-arret-de-la-cour-constitutionnelle-touche-des-matieres-verrouilles.

³⁸ Kongotimes. «RDC: Article 64 de la constitution sera d'appliqué». *Kongotimes*. fr.kongotimes.infos/2016/11/01/rdc-article-64-de-la-constitution-sera-applique.

³⁹ Cf. Michel Wautelet. *Les cyberconflits: internet, autoroute de l'information et cyberspace, Quelle menaces?* ebook. la-croix.com/ebook/les-cyberconflit-internet-autoroute-de-l-information-et-cyberspace-quelle-menaces-9782402030120_9782402030120_html.

ple, opponents and those of the majority have lived an experience out of the ordinary. Political seduction joined the highway information. Opponents have significantly used the internet to lobby the Government in denouncing them, manifest human rights such as criminal repression of the demonstrators and violations, with writings, images, or even amateur videos to support describing unimaginable scenes such as gunshots point-blank police on protesters civilians unarmed. For its part, the Government has also used the same method of communication to replicate, by demonstrating, by the political actors of his movement, it is the opposition which incites to violence. In short, the political struggle was enhanced by 6th continent, which is cyberspace.

Information circulating on the internet about the country's policy amplified political tensions. The people was spoiled information which did not prevent the installation of General psychosis, but at the same time contributed to the level of understanding of certain political situations, which have consequently sharpened the level of vigilance. This trend has increased the level of violence in clashes and therefore crime, among other killings, destruction, nasty, name-calling, abduction, etc. It is for this purpose that the Congolese authorities have seen fit to cut off access to internet (in 2015 and 2016) with a view to maintain public order. Therefore, the search for peace disturbed by the flow of certain information and/or opinions. Raymond Tshibanda, Minister and member of the presidential majority, said that “there has been a malicious use of the internet.”⁴⁰ I must say that this decision seeks peace by depriving the exercise of public freedom and fundamental rights.

III. DEPRIVATION OF ACCESS TO THE INTERNET IN THE FACE OF THE RESPECT OF FREEDOM OF EXPRESSION AND THE RIGHT TO INFORMATION

Is the decision on deprivation of access to the internet compatible with the individual character of freedom of expression and the right

⁴⁰ France24. «En Rdc, il y a eu une utilisation malicieuse des réseaux sociaux» *YouTube*, <https://m.youtube.com/watch?v=KHjjquDJUy>.

to information? What about those who did not respect this decision?

Freedom of expression is an individual freedom, remember, it does not need to be exercised collectively. It can be exercised alone. As a result, a violation of the law resulting from the non-respect of the conditions of exercise of this freedom also entails an individual sanction. After all, any violation of an individual's liberty constitutes an offense. The sanction of the offense is individual. Unfortunately, the sanction of deprivation of access to the Internet was not 'individual' but rather 'collective'. It affected even those who not only did not abuse this freedom, but also those who did not even exercise it on the internet, that is, those who did not, for example, of politics during this period.

It must be said, the internet can be used without using social networks. This is the case of a person who uses Gmail without having to resort to Facebook or whoever's doing online courses without using Whatsapp.

On the subject of the right to information, it is necessary to hammer first of all on the fact that on the Internet, it is not only the political information of the Democratic Republic of the Congo relating to the elections and the mandate of the President of the Republic, which, according to the government, incite to uprisings. In addition, the internet is not at all just political information (DR Congo). It goes well beyond! Except for restrictions related to the profession or function, the right to information is guaranteed for all without discrimination. To know the evolution of the political situation of a State has nothing to do with the limits of the possession of information, qualified of professional secret or State, even to disturb the public order, to undermine good morals or the rights of others. In addition, the sanction of the deprivation of the issue of information should concern the media player who does not respect these limits. These actors are subject to the obligation to process information as part of their professional ethics. This assumes that there is a whole structure that oversees and controls everything they do, and therefore has the means to avoid deviations. Unfortunately, this decision affected even innocent people.

It sanctioned on the basis of intent, not of the act.

The strength of the law lies in the sanction and strength of the authority that has enacted it to compel it. The decision of the deprivation of access to the internet by the authorities was not respected by all Internet users.

Indeed, as soon as the communication regulator's letter instructing internet service providers to cut off the internet service has been circulated, several Internet users, after having read the said letter, took the care of download anti-internet access protection software such as VPN, super FIRE, etc. As a result, they did not suffer any deprivation. The software was increasingly shared by Bluetooth because of its success. It is curiously noted that even the journalists who received these authorities for questions not only violated this decision by resorting to such software, but also did not address the question of what punishment reserved for users who did not respect this decision –What's more normal since they have also used this software...

Therefore, it is useful to reflect on the very meaning of the binding nature of the violation of this decision since the State was unable to punish those who violated this measure. The deprivation decision seems not to be effective since it was limited to ignorant or amateur Internet users, and more serious no sanction was attached to its violation. Men are not afraid of the law, but rather of the sanction to which it is attached. If a law does not have a sanction, if a measure which tends to the protection of the public order, morality and the right of others is not accompanied by a sanction in case of its violation, what is it for? What is his meaning?

If certain political authorities, like Raymond Tshibanda, spoke through television channels, about reasons that led to this decision, it is somewhat curious to note that the regulatory authority of the post and Congo's telecommunications was not the object of this in his letter instructing the temporary suspension of social networks. In addition, it may be curiously noted the absence of legal references attributing to the ARPTC the competence to take such as decision.

The content of the letter of the regulatory authority of the post and telecommunications

of Congo December 14, 2016 instructing the blocking of access to some social networks and eventually to all social networks suffers from lack of motivation. That authority gave no justification for the measure taken, let alone the end and the conditions for the lifting of that measure. Apart from the absence of the reasoning, this letter does not include any legal reference attributing such competence to the ARPTC to take such a decision.

CONCLUSION

Democracy agrees in text and practice with the rule of law. The rule of law is the radical of any so-called democratic state. The violation of freedom of expression and the right to information is the most perfect expression of a state that is everything but no democratic.

On the one hand, many computer mechanisms of individual restrictions of access to specific sites in cases of misconduct, the individual nature of the rights and freedoms constitutionally guaranteed, supposed to be poorly exercised on the internet, according to the Congolese authorities, by the commission of several offenses, the punishment of which should be individual, as well as the individual and legal nature of the sanction, and the lack of motiva-

tion and legal reference of the decision which was the subject of the present reflection, we assert with the last energy that there is no valid justification for the blockage or partial or total removal of access to social networks, or the common deprivation of access to the internet, except that a deliberate and deliberate intention of certain political actors to want to flout the rule of law guaranteeing democratic alternation with the teacher its illegitimate, illegal and selfish interests, this can be understood by analyzing both the circumstances that preceded the cuts and the objects of claims. Beyond all, this decision has caused enormous financial damage to internet service providers and users.

To deprive a people of their freedom to express themselves is to incite them to do so by violence. To prevent him from inquiring to know the true truth is to force him to imagine beyond what is simmering. Democracy is not only theoretical but also practical. True democracy begins when you give the person who does not share the same idea as you, the opportunity to express themselves in compliance with legal limits without being pursued unfairly. It is at this level that a democracy acquires maturity. To punish an innocent unfairly is to turn him slowly to a criminal.

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Greening of Economy as a Factor of the Russia's Innovative Development

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Abstract. Through the lens of the “green growth” concept prepared by OECD and used in many developed countries, the article addresses issues of development and adoption of environmentally clean technologies with an appeal to the Russian legislation’s current trends. Enacted by laws and regulations, plans of the Russian industry for the transition to the principles of best available technologies demonstrate a significant progress towards improvement of environmental regulation.

Keywords: green growth; innovation; industrial modernization.

Экологизация экономики как фактор инновационного развития России

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Аннотация. Через призму используемой во многих развитых странах концепции «зеленого роста», разработанной ОЭСР, статья рассматривает аспекты развития и внедрения экологически чистых технологий с обращением к текущим тенденциям российского законодательства. Закрепленные нормативно-правовыми актами планы перехода российской промышленности на принципы наилучших доступных технологий представляются серьезным прогрессом на пути совершенствования экологического регулирования. В дополнение рекомендуется уделять большое внимание осуществлению НИОКР в целях получения экологически чистой продукции, которую следует реализовывать на внешних рынках.

Ключевые слова: зеленый рост, инновации, промышленная модернизация.

In anticipation of the government choosing and adopting a Strategy for social and economic development of Russia for the period of 2018–2024, debates on sources of economic growth and technological modernization continue. In this view, it is crucial to understand ways of achieving innovative development. In light of existing tendencies in the leading Western economies, as well as in

the largest economies such as China and India, there is a special place for the development of environmentally clean technologies.

It seems reasonable to consider a concept of green growth, developed by experts of OECD in 2011, that is being incorporated into economic strategies of leading developed countries. Comprehension of the green growth strategy (henceforth referred to as the Strategy), firstly, gives

an idea of trajectories of further development of countries, which are leaders in the world economy, and secondly, allows for forming a theoretical basis of programs aimed at productivity enhancement, technological modernization, and improvement of resource management.

Green growth means ‘fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies’ [1, p. 4]. Authors of the Strategy highlight that the possibility of substituting reproducible capital (such as machines) for (depleted) natural capital is limited in the absence of innovation. It is important for policymakers in Russia to take this fact into consideration given a high share of extractive industry in the country’s economic structure, the situation is known as ‘resource curse’—the state of affairs when a resource-rich country does not develop other than mineral industries and faces stagnant growth or even economic contraction. For this reason, it is relevant to pay more attention to ideas underlying the concept of green growth.

According to the Strategy, efficient resource use and management are the main goal of economic policy. One cannot disagree with this statement. The more resources, which are the core for life support and in the international trade, are depleted, the more relevant the issue of their optimal use becomes. The OECD experts on green economy point to the necessity to charge for pollution or excessive use of scarce resources. In this view, it is appropriate to determine whether resources of Russia are considered deficit or not and therefore, how ‘excessive’ is appreciated. In 2016 The Ministry of the energy of the Russian Federation evaluated that the country’s hydrocarbon reserves will suffice for the next 40 to 50 years¹. Oil production limits were set in Russia as a result of an international agreement in an attempt of solving the problems of the global oversupply and low oil prices, and not as a result of concern about depletion of the resource. If one considers projects and governmental programs on a substantial development of the Arctic zone and statements made by senior officials of relevant

ministers on them, reduction in hydrocarbon reserves do not seem to pose a problem. The Ministry of natural resources and environment of the Russian Federation estimates that the Arctic zone of Russia holds initial recoverable reserves standing at 258 billion toes or 60% of all hydrocarbon reserves of the country².

Regarding payments for pollution, a literature review of numerous sources, including OECD’s green growth strategy, shows that Western authors stress such forms as taxes and tradable permit systems. These pricing mechanisms are promoted on the grounds that they tend to minimize the costs of achieving environmental targets and provide incentives for further efficiency gains and innovation. Notably, pollution taxes are seen not as an additional burden on economic agents, but as an alternative to increase in other taxes, for example, on labor or returns of enterprises. However, an argument about the attractiveness of pollution taxes due to their nature of being a source of public revenue should be carefully weighted in case of their imposition as an alternative to raising other taxes. It is worth noting, as a response to criticism by opponents of adoption of the above-mentioned market instruments (they fall into this category of environmental measures according to the OECD classification) in Russia, that the OECD experts and other ideologists of green growth underline that these measures are not applicable in every case.

The central argument for incorporating the green growth concept into economic strategy is a modernization of industries and catalyzation of innovation, which should definitely trigger economic growth and increase a country’s competitiveness. This idea dates back to 1990s when Michael Porter introduced his hypothesis (later coined as Porter hypothesis) and developed it together with Claas van der Linde. The hypothesis states that well-designed instruments of environmental policy are able to induce innovation, benefits from which can partly or fully compensate compliance costs [2]. There is no doubt that a more efficient use of energy, saving of materials by recycling and lower costs of product disposal for users bring about the

¹ GAZETA.RU. URL: <https://www.gazeta.ru/business/2016/10/04/10229945.shtml>. Accessed: 26.09.2017.

² RIA NEWS. URL: <https://ria.ru/economy/20160525/1439399879.html>. Accessed: 02.10.2017.

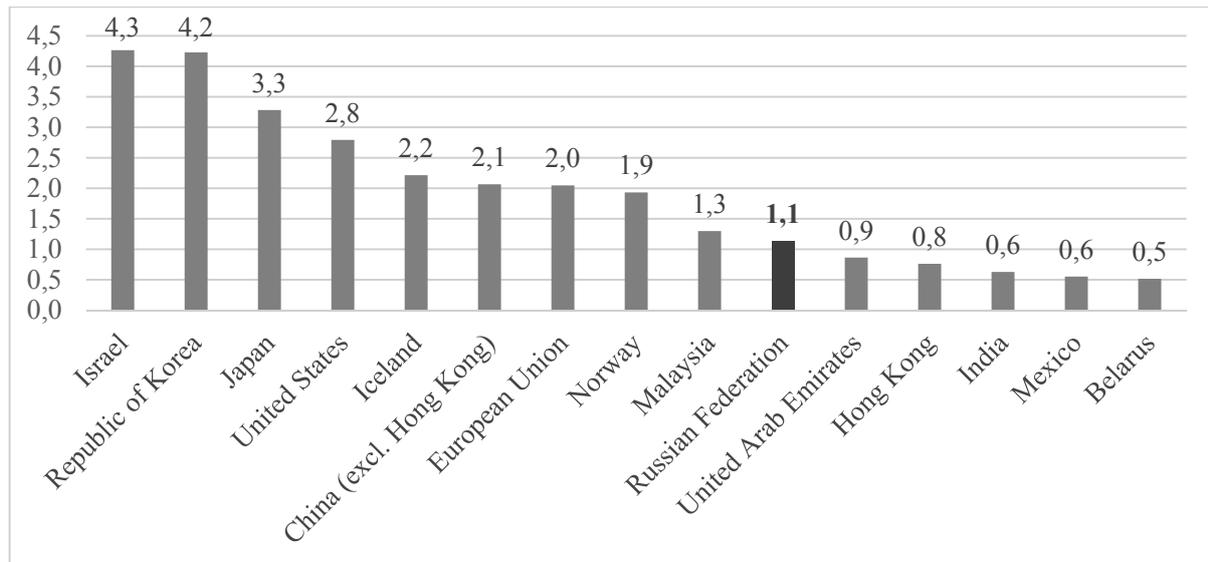


Fig. 1. R&D expenditure as percentage of GDP, 2015

Source: World Bank [4]. URL: <https://data.worldbank.org>.

financial benefit. The question is about ways of spurring innovation because research and development require additional expenses. And this is where the government should step in.

The idea of ramping up R&D financing in Russia is not new and is attributable to technological underdevelopment and a low share of high-tech products in exports. Comparison of R&D expenditure as a percentage of GDP across a range of countries shows that in order to prosper internally and gain a significant position in the world economy Russia should spend more than 1% of its total output for scientific and experimental works. Israel, Republic of Korea, Japan, United States, Iceland, China (excluding Hong Kong), and the European Union are leaders by this indicator at 2015 year-end (Fig. 1) with the world average standing at 2.2% of GDP. Environmentally clean innovations are an area of investment that is and will recoup costs due to an increasing demand for 'green' products in international markets. The international market for environmental goods is estimated at approximately 1 trillion dollars [3, p. 6]. Hence, it is viable to support R&D in this area. And successful promotion of green innovations requires regulatory instruments to be implemented, such as for instance, public procurement and standards and rules in particular local markets.

It is important, however, to take into consideration experts on green growth draw attention

to technological lock-in—a situation when only existing technologies are used while new ones are ignored. In order to avoid technological lock-in specialists recommend leaving industries and not state bodies to choose approaches to innovate in order to meet environmental targets. The system of best available technologies (BAT) was practically introduced by Federal law No. 219-FZ 'On amendments being made to Federal law 'On environmental protection', dated 21.07.2014. Apart from this, a series of other laws and regulations were adopted to regulate and promote BAT, specifically the following:

- Order of the government of the Russian Federation No. 398-r dated 19 March 2014 (policy package on BAT)
- Order of the government of the Russian Federation No. 2178-r dated 31 October 2014 (Reference books on BAT)
- Decree of the government of the Russian Federation No. 1458 'On procedure for defining technology as best available technology and preparing, updating and publishing of information and technical reference books on BAT' dated 23 December 2004
- Order of the government of the Russian Federation No. 2674-r dated 24 December 2014 (Implementation areas for BAT)
- Decree of the government of the Russian Federation No. 1029 'On approving criteria for qualifying objects that have a negative environmental impact as categories I, II, III, and

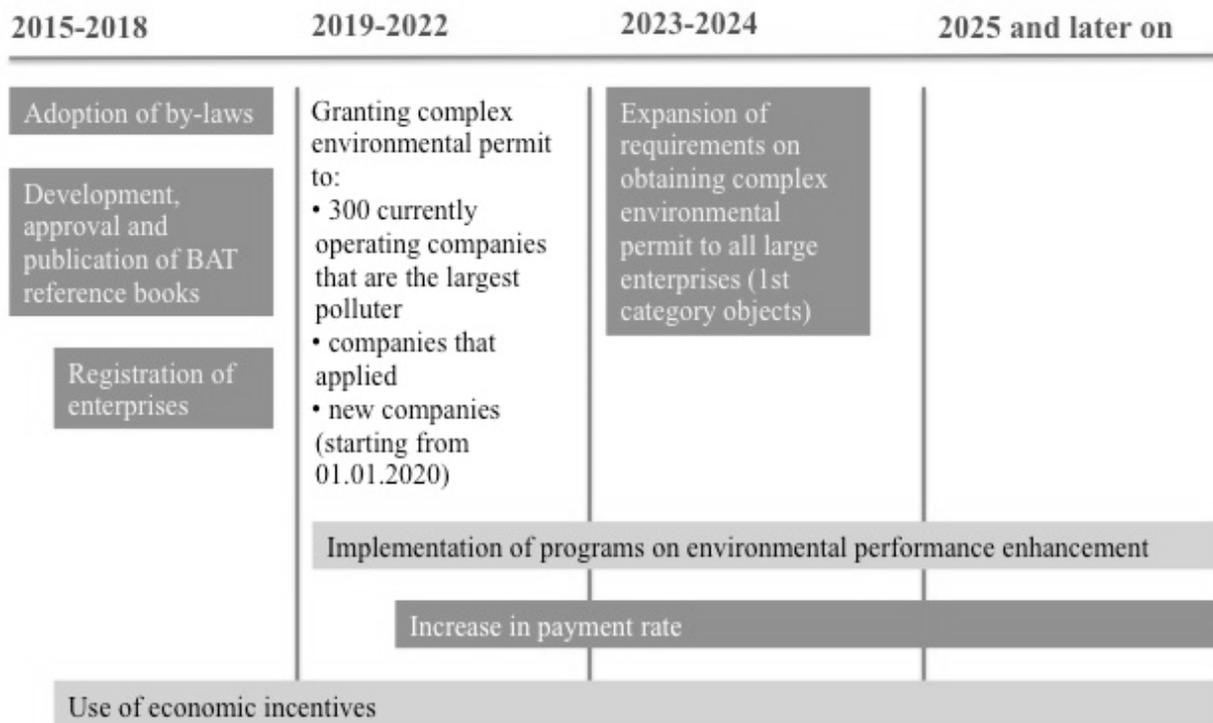


Fig. 2. Stages of the Russian industry's transition to the principles of BAT

Source: Ministry of industry and trade of the Russian Federation [5].

IV' dated 28 September 2015.

Previously, there has been one article (28.1) in the Federal law No. 7-FZ 'On environmental protection' dated 10.01.2002 related to BAT, which includes several key statements. Firstly, criteria for defining best available technologies are set. They are the following:

- The minimum negative impact on environment calculated by unit of time or production output, works performed, serviced provided or other indicators stated in international treaties of the Russian Federation
 - Economic effectiveness from its adoption and exploitation
 - Use of resource- and energy saving methods
 - Period of its adoption
 - Industrial adoption of a technology at two or more objects that produce negative environmental impact.

Secondly, the article of the law dated 2002 comprises information that should be incorporated into reference books on BAT in different sectors, on the basis of which business chooses ways of environmentally related modernization (point 2). Thirdly, Federal law 'On environmental protection' defines adoption of a best available

technology as 'the time-limited process of design, reconstruction, technical re-equipment of facilities that have negative environmental impact, equipment installation as well as the use of technologies that are described in reference books and (or) environmental impact indicators of which do not exceed specified technological parameters of BAT' (point 10).

Work undertaken during the past several years in the area of regulation of technologies aimed at diminishing harmful environmental effects led to fixing deadlines for the Russian industry to switch to operations according to the principles of the BAT. There is a slide on stages of best available technologies' adoption in the presentation of the Ministry of industry and trade dated May 2017 (Fig. 2). The plan is that 51 reference books should be approved by the end of 2017. These reference books contain information on technological solutions, adoption of which is expected to reduce the burden on nature alongside with preserving potential of industrial development. The Ministry of natural resources and environment will set requirements, which will be used when granting a complex environmental permit to companies, on the basis of the reference books. The com-

plex environmental permit will replace three currently existing permits: for air pollution, discharges to water, and for industrial and consumer waste storage. By 2020 year-end complex permits are to be granted to 300 enterprises that are largest polluters.

The danger of technological lock-in can be seen at the stages of, firstly, development of reference books and, secondly, preparation of requirements by the Ministry of natural resources and environment. Regarding the former, the country's federal body in the area of standardization (Rosstandart) is responsible for arranging development of reference books, for the purpose of which a Bureau on BAT was created. On the one hand, it is very useful that working groups of the Bureau, which formed to prepare reference books in a particular sector, included representatives of companies, industrial associations, unions of entrepreneurs and others (including scientific and non-commercial organizations, etc.), because concerns they expressed were then taken into consideration and, at the same time, there was an opportunity of promotion of businesses that focus on innovative activities. On the other hand, as it was mentioned above, environmental policy compliance and related innovation require additional expenses. For the reason that general practice shows reluctance of companies to reallocate funds for the purpose of environmental cleanup and pollution prevention and taking into consideration opposition of the Russian business community to measures described in the Paris Climate Agreement, it is most likely, that participation of business in preparation of reference books on BAT has weakened this instrument of environmental modernization and limited opportunities for choosing technological solutions.

The Ministry of industry and trade estimates that transition of industry to the principles of best available technology will require 8.2 trillion rubles while re-equipment of production facilities will amount to 13.6 trillion [5]. Forms of governmental support envisaged can be considered as a significant shift in environmental regulation. Specifically, the following measures are envisaged and already used:

- Reductions of payments for negative environmental impact
- Investments tax credit

- Introduction of a special depreciation rate
- Subsidies for interest payments on the loan (for amounts of subsidies and requirements for investment projects see slide 11 of the same presentation)

- Subsidies for R&D costs.

The initiated scheme of transition to operating under the principles of the BAT will become an important trigger of increase in internal demand for existing technologies, will ensure a large-scale modernization of the key Russian industries, thus making them more competitive in the international markets. Moreover, adoption of environmentally clean technologies will secure the Russian economic agents from potential trade barriers from foreign partners. Nevertheless, apart from ramping up use of technologies by the country's economic agents, it is of great significance to, firstly, promote existing knowledge and skills abroad, and secondly, carry out R&D for the purpose of producing environmentally clean goods, which will be of high demand with foreign buyers in the near- and mid-term. In order to finance these initiatives, funds could be partly diverted from the Government program on the coal industry development until 2030 (hereinafter referred to as the Program).

As the author stated in the previous publication [6, p. 149], it does not seem reasonable to plan large-scale exports from newly developed coal fields to China and building coal-fired power plants at the border, which are mentioned in the Program. The first signal is that according to China's 13th Five-Year Plan the country plans to reduce its use of coal to less than 58 percent of total energy consumption³. China has focused on meeting its obligations under Paris Climate Agreement and intends to increase the share of non-fossil fuels in total primary energy consumption to 20% by 2030⁴. The second indication is that the International Energy Agency resting on all the environmental and energy initiatives announced by China forecasts that

³ The State Council of the People's Republic of China. URL: http://english.gov.cn/policies/latest_releases/2016/11/04/content_281475482956889.htm.

⁴ As stated in the Intended Nationally Determined Contributions (INDC) submitted by China to the United Nations before signing the Paris Climate Agreement.

the country's coal use is set to decline by almost 15% over the period to 2040 [7, p. 4]. Therefore, some funds of the Program could be used to gain a double benefit: firstly, economic one from selling environmentally clean products (as a result of research and development), and secondly, environmental by not allowing air pollution from burning more coal.

To sum up, it is possible to conclude that there has been a significant shift in the Rus-

sian legislation targeting reduction in negative environmental impact with a basis on adoption of existing technologies that are to bring about large-scale industrial modernization. In order to avoid technological lock-in and give impetus to innovative activities, it is necessary to invest in R&D. Reallocation of funds from the Government program on the coal industry development could become a source of public financing of green research and development.

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